Introduction

This appendix provides information on the MicroStrategy Tutorial, including the data model and physical warehouse schema.

What is the MicroStrategy Tutorial?

The MicroStrategy Tutorial is a MicroStrategy 7i project (metadata and warehouse are included) and a set of demonstration applications designed to illustrate the rich functionality of the MicroStrategy 7i platform.

A project is the highest-level intersection of a data warehouse, metadata repository, and user community. Conceptually, the project is simply the environment in which all related reporting is done. A typical project contains reports, filters, metrics, and functions. You create the projects that users access to run reports.
The theme of the MicroStrategy Tutorial project is a retail store for the 2002-2003 time period that sells electronics, books, movies and music. The key features include

- Five hierarchies: Customer, Geography, Products, Promotions, and Time. Each hierarchy can be viewed graphically through MicroStrategy Desktop and Web (through documents)

- 10,000 customers and 400,000 items purchased

- Six reporting areas: Enterprise Reporting Documents, Human Resources, Inventory, Financial, Product Sales, Supplier

- Options to create reports from MicroStrategy Web or Desktop focusing on a particular analysis area, such as Customer, Inventory, Time, Products, Category, Employee, or Call Center

**MicroStrategy Tutorial reporting areas**

As noted above, the analysis areas are grouped into six categories that illustrate the various types of business analysis possible with MicroStrategy 7i:

- **Enterprise Reporting Documents**: This folder contains various examples of the different types of standard enterprise reporting documents such as scorecards and dashboards, managed metrics reports, production and operational reports, invoices and statements, and business reports.

- **Financial**: Reports containing information based on time, geography, and products, such as Regional and Quarterly Profit Margins.

  The Financial Reports represent the types of financial reports used in any business. These reports include profit and loss information, company forecasts, and margin reports. These reports give executives, general managers, and operations managers immediate access to financial data so that they can quickly analyze trends and key performance indicators. They ensure that all decision-makers have access to a single repository of financial information, so executives can be sure that
departments are all working from the same set of facts. Decision-makers are able to determine immediately the profitability of categories, departments, districts, and business units. Individual managers are able to determine their own performance against budget plan and standard business performance metrics. Furthermore, decision-makers can get timely reports on key metrics, uncover opportunities to raise revenue and lower costs, track changes in operational costs, analyze categories and business units, and compare actual performance against budget.

- **Human Resources**: Reports containing information on employees; headcount, birthdays, length of employment, top five employees by revenue. These reports are based on employees, time, geography, and sales.

  The Human Resources Reports provide insight into human capital so that managers can boost the efficiency and effectiveness of their employees. Human Resource Representatives can highlight under-performing employees and misallocated headcount. Managers at all levels can focus on the performance of their people, drill down to an individual employee detail level, view trends, and extract intelligence not otherwise evident.

- **Inventory**: Reports containing information based on supplier, product, cost, and profit, such as Inventory and Unit Sales, or Inventory Received from Suppliers by Quarter.

  The Inventory Reports track inventory information within the company and through to suppliers. Essentially these reports show how many units of an item are on hand, how many are expected from a particular supplier, and units sold. Inventory reports are used to ensure that the supply chain is as efficient as possible. Using these reports, employees can analyze trends and details, quickly adjust inventory and distribution, and understand underlying supply chain costs and inefficiencies.

- **Product Sales**: Reports that allow for market basket analysis, such as Sales by Region, Revenue over Time, and Yearly Revenue Growth by Customer Region.
The Product Sales Reports allow managers and analysts to monitor and analyze sales trends, track corporate revenue goals, compare store-to-store performance, and respond more quickly and accurately to feedback from the marketplace. In turn, executives can analyze sales trends and details, quickly adjust pricing and promotions, identify product affinities, key profit centers, and understand costs and revenue trends.

- **Supplier**: Reports containing supplier, sales, profit, and revenue information, such as Brand Sales by Supplier, Supplier Sell-Through Percentage, and Units Sold and Profit by Supplier.

The Supplier Reports allow managers and analysts to monitor and analyze vendor performance so that they can quickly identify performance problems. These reports track brands and items sold that came from a particular vendor. They also correlate profit and revenue information with particular suppliers so that relationships with key vendors can be strengthened.

These reports are located in the Reports folder of the MicroStrategy Tutorial project.

Once the areas of analysis are determined, a data model is created.

### The MicroStrategy Tutorial data model

A logical data model graphically depicts the flow and structure of data in a business environment. It provides a way of organizing facts so that they can be analyzed from different business perspectives. For example, a simple logical data model for a retail company might organize all necessary facts by store, product, and time—three common business perspectives typically associated with retail business.

For more detailed information about data modeling, see “Introduction to Data Modeling” starting on page 259 in this guide or to the data modeling appendixes in the *Advanced Reporting Guide* or *Basic Setup Guide*. 
Geography hierarchy

The MicroStrategy Tutorial Geography hierarchy contains attributes such as Country and Region, as well as Distribution Center, Call Center, and employee-specific attributes. It might be easy to understand why Country and Region are in the Geography hierarchy, but what about Distribution Center, Call Center, and the employee-related attributes?

The data used in MicroStrategy Tutorial is based on a fictitious company that sells electronics, movies, music and books. The company does not have physical stores; it does business from catalog and Web sales. Customers review the products in a printed or online catalog and call in their order over the phone. The order is processed by an employee located at a call center and fulfilled by a distribution center which sends it via one of the shippers.

The Geography hierarchy contains the following attributes.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>Countries where the company does or hopes to do business in the future. Also, Countries where employees work.</td>
<td>USA, Spain, France</td>
</tr>
<tr>
<td>Region</td>
<td>Each country is split into Regions.</td>
<td>Central, Northeast, Southwest</td>
</tr>
<tr>
<td>Call Center</td>
<td>Where product phone-in orders are taken. Each Call Center is located in a different city.</td>
<td>Atlanta, Boston, Charleston</td>
</tr>
<tr>
<td>Distribution Center</td>
<td>The location where product orders are sent out to customers. Currently, each is located in the same city as the Call Center it services.</td>
<td>Miami, New Orleans, Fargo</td>
</tr>
<tr>
<td>Manager</td>
<td>Person responsible for a specific Call Center</td>
<td>Peter Rose, Alice Cooper</td>
</tr>
<tr>
<td>Employee Experience</td>
<td>The number of years an employee has worked for the organization</td>
<td>3, 5, 6</td>
</tr>
<tr>
<td>Hire Date</td>
<td>The date on which a particular employee was hired</td>
<td>2/16/03, 3/15/03</td>
</tr>
<tr>
<td>Salary</td>
<td>The amount of money an employee makes per year</td>
<td>24,000, 35,000</td>
</tr>
<tr>
<td>Employee Age</td>
<td>The age of each employee</td>
<td>29, 36, 52</td>
</tr>
<tr>
<td>Employee Birth Date</td>
<td>The date each employee was born</td>
<td>5/6/56, 1/1/77</td>
</tr>
<tr>
<td>Employee</td>
<td>The lowest level in the Geography hierarchy, representing the individual responsible for each order placed</td>
<td>Jennifer Lee, Laura Kelly</td>
</tr>
</tbody>
</table>
Refer to the graphic below to see how all these attributes are organized into the MicroStrategy Tutorial Geography hierarchy.
Products hierarchy

The products hierarchy contains attributes such as category, brand, catalog, and supplier. It should be noted that the attributes Transaction, Warranty, and Discontinued Code are not part of the main data model—these are extra attributes that were introduced to support the MicroStrategy Transactor and MicroStrategy Narrowcast Server demos.

The Products hierarchy contains the following attributes.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Products are organized into Categories at the highest level.</td>
<td>Electronics, Music</td>
</tr>
<tr>
<td>Subcategory</td>
<td>Used to further differentiate a subset of Products within a Category</td>
<td>Business, Cameras, Drama</td>
</tr>
<tr>
<td>Warranty</td>
<td>The time period in months during which a manufacturer repairs a broken item (specific to Narrowcast Server)</td>
<td>3, 5</td>
</tr>
<tr>
<td>Brand</td>
<td>The manufacturer or artist for a particular product</td>
<td>Ayn Rand, 3Com, Sony</td>
</tr>
<tr>
<td>Catalog</td>
<td>The medium used to sell products</td>
<td>Spring 2002, Fall 2003</td>
</tr>
<tr>
<td>Supplier</td>
<td>The distributor for a set of Brands</td>
<td>McGraw Hill, Disney Studios</td>
</tr>
<tr>
<td>Discontinued Code</td>
<td>(Currently not implemented in the project.) 0 = discontinued product, 1 = non-discontinued product.</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>The individual Product sold</td>
<td>The Great Gatsby, Sony Discman</td>
</tr>
<tr>
<td>Transaction</td>
<td>Describes a resupply transaction from the fictitious company that the MicroStrategy Tutorial product uses to its suppliers for additional stock</td>
<td></td>
</tr>
</tbody>
</table>
Refer to the graphic below to see how all these attributes are organized into the MicroStrategy Tutorial Products hierarchy.

**Customers hierarchy**

The Customers hierarchy contains customer demographic and purchase information, such as Customer Age, Income Bracket, Payment Method, and Ship Date.

The Customers hierarchy contains the following attributes.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Region</td>
<td>The highest level of differentiation for where Customers live</td>
<td>Northeast, South, France</td>
</tr>
<tr>
<td>Customer State</td>
<td>Each Customer Region is divided into multiple States.</td>
<td>Main, North Dakota</td>
</tr>
</tbody>
</table>
Refer to the graphic below to see how all these attributes are organized into the MicroStrategy Tutorial Customers hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer City</td>
<td>Each Customer State is broken down into Cities</td>
<td>Albany, Chicago, Memphis</td>
</tr>
<tr>
<td>Customer Age</td>
<td>The Age of a particular customer at a current point in time</td>
<td>26, 38, 59</td>
</tr>
<tr>
<td>Customer Birth Date</td>
<td>The Date on which the Customer was born</td>
<td>8/4/50, 4/30/72</td>
</tr>
<tr>
<td>Income Bracket</td>
<td>The salary range reported by the Customer</td>
<td>$31,000 - 40,000, $61,000 - 70,000</td>
</tr>
<tr>
<td>Zip Code</td>
<td>The lowest level of differentiation for where Customers live</td>
<td>07026, 36303</td>
</tr>
<tr>
<td>Customer</td>
<td>The name of the individual Customer</td>
<td>Selene Allen, Chad Laurie</td>
</tr>
<tr>
<td>Shipper</td>
<td>The vendor used to send Products to the Customer</td>
<td>Pronto Packages, MailFast</td>
</tr>
<tr>
<td>Rush Order</td>
<td>(Currently not implemented in the project.) Indicates whether a customer chose to expedite delivery of an Order</td>
<td></td>
</tr>
<tr>
<td>Payment Method</td>
<td>The way a Customer pays for an Order</td>
<td>Amex, Check</td>
</tr>
<tr>
<td>Ship Date</td>
<td>The Date on which an Order is shipped from the Distribution Center</td>
<td>9/15/02, 3/26/03</td>
</tr>
<tr>
<td>Order</td>
<td>The tracking number associated with a particular group of Items purchased</td>
<td>167, 2635</td>
</tr>
</tbody>
</table>
Time hierarchy

The Time hierarchy contains time-specific attributes—Year, Quarter, Month, and Day.

The Time hierarchy contains the following attributes.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Calendar Year of purchase.</td>
<td>2002, 2003</td>
</tr>
<tr>
<td>Quarter</td>
<td>Calendar Quarter of purchase.</td>
<td>Q2 02, Q3 03</td>
</tr>
<tr>
<td>Month of Year</td>
<td>Calendar Month of purchase.</td>
<td>January, November</td>
</tr>
<tr>
<td>Month</td>
<td>Month of purchase.</td>
<td>Jul 02, Aug 03</td>
</tr>
<tr>
<td>Day</td>
<td>Calendar Date of purchase.</td>
<td>5/14/02, 12/26/03</td>
</tr>
</tbody>
</table>

Refer to the graphic below to see how all these attributes are organized into the MicroStrategy Tutorial Time hierarchy.
Promotions hierarchy

The Promotions hierarchy contains Promotion and Promotion Type. This hierarchy is useful for recording whether a sale was a promotional purchase.

The Promotions hierarchy contains the following attributes.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion Type</td>
<td>(Currently not implemented in the project.) Type of discount period offered (Sale type).</td>
<td>Mother’s Day, Labor Day</td>
</tr>
<tr>
<td>Promotion</td>
<td>(Currently not implemented in the project.) Date range for a particular discount period under which an Item is purchased (Sales Date).</td>
<td>9/1/02 - 9/4/02, 2/16/03 - 2/19/03</td>
</tr>
</tbody>
</table>

Refer to the graphic below to see how all these attributes are organized into the MicroStrategy Tutorial Promotions hierarchy.
Viewing the MicroStrategy Tutorial data model

Although the MicroStrategy Tutorial data model is displayed in the previous pages, you can also view it directly in the product.

To view the MicroStrategy Tutorial data model

1. If you are not already using the Tutorial, log in to the project source containing the MicroStrategy Tutorial and expand the MicroStrategy Tutorial project. You must log in as an Administrator (user name Administrator, no password) to complete these steps.

2. From the Schema menu, point to Graphical View, and then choose Hierarchies. Once loaded, the Hierarchies - MicroStrategy Tutorial dialog box opens.

3. To view a different hierarchy, select it from the Hierarchy drop-down menu in the toolbar.

4. To focus on a different entry point, select it from the Entry Point drop-down menu in the toolbar.

5. To view the entire hierarchy in the window, click Fit in window from the toolbar.

6. You can rearrange the attributes by dragging and dropping them.

   This does not affect the browse order, but allows you to view the hierarchy in a way meaningful to you.

7. To return to the default view, click Auto arrange in the toolbar.

8. To save the layout view of the hierarchy, click Save in the toolbar. The next time you open the Hierarchy Viewer, this saved view is displayed.

Once the data model is created, the next step is the schema.
A schema is a logical and physical definition of warehouse data elements, physical characteristics, and interrelationships.

The logical data model is a picture of all the pieces of information necessary to understand your data and how it relates to your business. It is a graphic-intensive technique that results in a data model representing the definition, characteristics, and relationships of data in a business, technical, or conceptual environment.

The physical warehouse schema is based on the logical data model, such as Day, Item, Store, or Account. Several physical warehouse schemas can be derived from the same logical data model. While the logical data model tells you what facts and attributes to create, the physical warehouse schema tells you where the underlying data for those objects is stored. The physical warehouse schema describes how your data will be stored in the data warehouse.

This appendix shows the physical warehouse schema with datatypes shown.

For more detailed information on the schema, refer to the Data modeling appendix in the Basic Setup or Introduction to MicroStrategy 7i manuals.

The MicroStrategy Tutorial schema is divided into the following parts:
- geography
- products
- customers
- time
- promotions
- fact tables
Schema notations

The following notations are used in the graphical depictions of the following MicroStrategy Tutorial schema.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Indicates</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>LU_</td>
<td>a lookup table</td>
<td>A database table used to uniquely identify attribute elements. They typically consist of descriptions of dimensions. Lookup tables are usually joined to fact tables in order to group the numeric facts in the fact table by dimensional attributes in the lookup tables.</td>
</tr>
<tr>
<td></td>
<td>a primary key</td>
<td>In a relational database, the set of columns required to uniquely identify a record in a table.</td>
</tr>
<tr>
<td>REL_</td>
<td>a relationship table</td>
<td>While lookup tables store information about one or more attributes, relate tables store information about the relationship between two attributes. Relate tables contain the ID columns of two or more attributes, thus defining associations between them.</td>
</tr>
<tr>
<td>PMT_</td>
<td>a partition mapping table</td>
<td>A warehouse table that contains information used to identify the partitioned base tables as part of a logical whole. Also referred to as a PMT.</td>
</tr>
</tbody>
</table>

The schema also contains fact tables. A fact table is a database table containing numeric data that may be aggregated along one or more dimensions. Fact tables may contain atomic or summarized data. The basic facts from which all metrics in the MicroStrategy Tutorial were created from are listed below:

<table>
<thead>
<tr>
<th>Fact</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>The total amount charged by the supplier to the company</td>
</tr>
<tr>
<td>Discount</td>
<td>A monetary reduction made from a regular price</td>
</tr>
<tr>
<td>End on hand</td>
<td>The number of individual items remaining at the close of each month</td>
</tr>
<tr>
<td>Freight</td>
<td>The compensation paid for the transportation of goods</td>
</tr>
<tr>
<td>Profit</td>
<td>The excess of the selling price of goods over their cost</td>
</tr>
<tr>
<td>Revenue</td>
<td>The total income produced by a given source accounting for all product sales deducting discounts</td>
</tr>
<tr>
<td>Rush Charge</td>
<td>The amount of money charged to expedite delivery service</td>
</tr>
<tr>
<td>Unit Cost</td>
<td>The amount of money charged by the supplier to the company per individual item purchased</td>
</tr>
</tbody>
</table>
### Fact Description

<table>
<thead>
<tr>
<th>Fact</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Price</td>
<td>The amount of money charged by the company to the customer per individual item sold</td>
</tr>
<tr>
<td>Unit Profit</td>
<td>Unit price - unit cost</td>
</tr>
<tr>
<td>Units Received</td>
<td>The number of individual items acquired from a supplier</td>
</tr>
<tr>
<td>Units Sold</td>
<td>The number of individual items bought by customers</td>
</tr>
</tbody>
</table>

#### Geography schema

![Geography schema diagram]

- **LU_COUNTRY**
  - COUNTRY_ID
  - COUNTRY_NAME

- **LU_REGION**
  - REGION_ID
  - REGION_NAME
  - COUNTRY_ID

- **LU_MANAGER**
  - MANAGER_ID
  - MGR_LAST_NAME
  - MGR_FIRST_NAME
  - EMAIL
  - ADDRESS_DISPLAY
  - DEVICE_ID

- **LU_CALL_CTR**
  - CALL_CTR_ID
  - CENTER_NAME
  - REGION_ID
  - MANAGER_ID
  - COUNTRY_ID
  - DIST_CTR_ID

- **LU_DIST_CTR**
  - COUNTRY_ID
  - DIST_CTR_ID
  - DIST_CTR_NAME
Products schema

LU CATEGORY
- CATEGORY_ID
- CATEGORY_DESC

LU_SUBCATEG
- SUBCAT_ID
- SUBCAT_DESC
- CATEGORY_ID

LU SUPPLIER
- SUPPLIER_ID
- SUPPLIER_NAME
- CONTACT_LAST_NAME
- CONTACT_FIRST_NAME

LU ITEM
- ITEM_ID
- ITEM_NAME
- ITEM_LONG_DESC
- ITEM_FOREIGN_NAME
- ITEM_URL
- DISC_CD
- WARRANTY
- UNIT_PRICE
- UNIT_COST
- SUBCAT_ID
- SUPPLIER_ID
- BRAND_ID

REL_CAT_ITEM
- CAT_ID
- ITEM_ID

LU CATALOG
- CAT_ID
- CAT_DESC
- CAT_URL
- CAT_SHIP_COUNT

LU BRAND
- BRAND_ID
- BRAND_DESC
Customers schema

LU_CUST_REGION
- CUST_REGION_ID
- CUST_REGION_NAME

LU_CUST_STATE
- CUST_STATE_ID
- CUST_STATE_NAME
- CUST_REGION_ID

LU_CUST_CITY
- CUST_CITY_ID
- CUST_CITY_NAME
- CUST_STATE_ID

LU_CUSTOMER
- CUSTOMER_ID
- CLST_LAST_NAME
- CLST_FIRST_NAME
- CLST_BIRTHDATE
- EMAIL
- ADDRESS
- ZIPCODE
- INCOME_ID
- CLST_CITY_ID

LU_ORDER
- ORDER_ID
- CUSTOMER_ID
- PYMT_TYPE

LU_PYMT_TYPE
- PYMT_TYPE
- PYMT_DESC

LU_INCOME
- INCOME_ID
- BRACKET_DESC

LU_SHIPPER
- SHIPPER_ID
- SHIPPER_DESC
- CONTRACT_NBR
Time schema

Promotions schema
Sales fact tables
Inventory fact tables

```
INVENTORY_ORDERS
- MONTH_ID
- ITEM_ID
- UNITS_RECEIVED
- MONTH_DURATION

PMT_INVENTORY
- QUARTER_ID
- PSTNAME

INVENTORY_Q1_2000
- MONTH_ID
- ITEM_ID
- BOH_QTY
- EOQ_QTY

INVENTORY_Q2_2000
- MONTH_ID
- ITEM_ID
- BOH_QTY
- EOQ_QTY

INVENTORY_Q3_2000
- MONTH_ID
- ITEM_ID
- BOH_QTY
- EOQ_QTY

INVENTORY_Q4_2000
- MONTH_ID
- ITEM_ID
- BOH_QTY
- EOQ_QTY

INVENTORY_Q1_2001
- MONTH_ID
- ITEM_ID
- BOH_QTY
- EOQ_QTY

INVENTORY_Q2_2001
- MONTH_ID
- ITEM_ID
- BOH_QTY
- EOQ_QTY

INVENTORY_Q3_2001
- MONTH_ID
- ITEM_ID
- BOH_QTY
- EOQ_QTY

INVENTORY_Q4_2001
- MONTH_ID
- ITEM_ID
- BOH_QTY
- EOQ_QTY
```

Miscellaneous fact tables

```
RUSH_ORDER
- ORDER_ID
- RUSH_CHARGE

PROMOTIONS
- ITEM_ID
- DAY_DATE
- PROMO_SALE_ID
- DISCOUNT

INVENTORY_CURR
- ITEM_ID
- TARGET_QTY
- EOQ_QTY
- ON_ORDER_QTY
- UNIT_COST
- REORDER_QTY
- TOTAL_AMT
- LAST_TRANS_ID
```
Viewing the MicroStrategy Tutorial schema

Although the MicroStrategy Tutorial physical schema is displayed in the previous pages, you can also view it or the logical schema directly in the product.

To view the MicroStrategy Tutorial schema

1. If you are not already using the Tutorial, log in to the project source containing the MicroStrategy Tutorial and expand the MicroStrategy Tutorial project. You must login as an Administrator (user name Administrator, no password) to complete these steps.

2. From the Schema menu, point to Graphical View, and then choose Tables. Once loaded, the Tables - MicroStrategy Tutorial dialog box opens with the physical view displayed.

3. To switch to the logical view, select View, then Logical View.

4. To change display preferences for the physical view, use the following from the Options menu:
   - Show joins: Select whether to connect the tables to represent the joins between the warehouse tables.
   - Use circular joins: Select whether to use circular joins.
   - Show column data types: Select whether to show the data type and size for each column.
   - Show table prefixes: Select whether to display the table prefix as part of the table name.
5 To change display preferences for the logical view, use the following from the Options menu:

- Show joins: Select whether to connect the tables to represent the joins between the table columns.
- Use circular joins: Select whether to use circular joins.
- Show relationships: Choose whether to map the relationships between the tables.
- Show relationship types: Choose whether to differentiate between one-to-one, one-to-many, many-to-one, and many-to-many relationships.
- Show columns: Select whether to display the warehouse columns that define each attribute, as a link between the logical and physical views.

6 To switch back to the physical view, select View, then Physical View.

7 To view the entire schema in the window, click Fit in window from the toolbar.

8 You can rearrange the tables by dragging and dropping them.

   This does not affect the relationships or joins, but allows you to view the tables in a way meaningful to you.

9 To return to the default view, click Auto arrange in the toolbar.

10 To save the layout view of the tables, click Save in the toolbar. The next time you open the Table Viewer, this saved view is displayed.

11 To copy the layout view, select Copy as Metafile from the File menu.
Introduction

This appendix presents the logical data model on which the Customer Analysis Module (CAM) is built.

This appendix provides a description for

- business hierarchies, including attributes and relationships, and their metadata objects definitions
- module facts
- module transformations

See Chapter 1, Introduction, for a general description, basic procedures, and additional details about understanding and working with CAM’s logical data model.

Information can also be found by accessing each attribute’s definition using the Attribute Editor. The attributes can be found in the Schema Objects/Attributes folder. Double-click an attribute to open the Attribute Editor.
Prerequisites

This appendix assumes you have prior experience with logical data modeling and creating business intelligence applications using MicroStrategy technology.

CAM logical schema

The following diagram represents the logical model shipped with CAM. The logical schema diagram is available in an Erwin file, located in Program Files/MicroStrategy/Analytics Modules/CAM/CA.erl.
Fact tables appear in teal (color) or gray (black and white).
Business hierarchies

CAM assists analysts, managers, and executives to obtain insight into the various factors that drive customer profitability for a business. CAM accomplishes this partly through a set of attributes (business concepts) and their relationships to each other. These attributes are arranged in a specific sequence according to a business structure, and that arrangement is called a hierarchy.

The key business hierarchies in the customer analysis process are

- Customer: Entities that buy products and services from the company
- Product: The products or services offered by the company
- Transaction: The unique numeric identifier for each transaction type posted
- Time: The calendar time

Each business hierarchy in the previous list is detailed in this section. For additional information on the hierarchies, see the MicroStrategy project definitions in CAM’s Schema Objects/Attributes and Schema Objects/Facts folders. From one of these folders, double-click an attribute or fact to view definitions, properties, source tables, and so on.

Customer hierarchy

This hierarchy represents individuals that have or had a relationship with the company.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Customer ID</td>
<td>John Brown, Nat Turner</td>
</tr>
<tr>
<td>Customer Acquisition Date</td>
<td>Date when the customer was acquired</td>
<td>10-JAN-2001</td>
</tr>
<tr>
<td>Customer Lost Date</td>
<td>Date when the customer was lost</td>
<td>12-DEC-2002</td>
</tr>
<tr>
<td>Attribute</td>
<td>Description</td>
<td>Example</td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Current Customer Status</td>
<td>Customer’s status, as of the last warehouse load date</td>
<td>Active, Lost</td>
</tr>
<tr>
<td>Current Customer Tenure (months)</td>
<td>Tenure of the customer in months, as of the last warehouse load date</td>
<td>1, 2, 10, 20</td>
</tr>
<tr>
<td>Customer Status</td>
<td>Historical customer status information</td>
<td>Active, Lost</td>
</tr>
<tr>
<td>Customer Tenure (months)</td>
<td>Historical customer tenure information</td>
<td>1, 2, 10, 20</td>
</tr>
<tr>
<td>Customer Age Range</td>
<td>Customer’s age range, as of the last warehouse load date</td>
<td>Below 20, 21-40, 41-60</td>
</tr>
<tr>
<td>Customer Gender</td>
<td>Customer’s gender</td>
<td>Male, Female</td>
</tr>
<tr>
<td>Customer Income Range</td>
<td>Customer’s income range, as of the last warehouse load date</td>
<td>20001-40000, 40001-60000</td>
</tr>
<tr>
<td>Customer City</td>
<td>Customer’s city of residence, as of the last warehouse load date</td>
<td>Chicago, New Orleans</td>
</tr>
<tr>
<td>Customer State</td>
<td>Customer’s state of residence, as of the last warehouse load date</td>
<td>Maryland, California</td>
</tr>
<tr>
<td>Customer Region</td>
<td>Customer’s region of residence, as of the last warehouse load date</td>
<td>East, West</td>
</tr>
<tr>
<td>Customer Education</td>
<td>Education level of the customer, as of the last warehouse load date</td>
<td>Undergraduate, Graduate</td>
</tr>
<tr>
<td>Customer Household Count</td>
<td>Number of people in the household of the customer, as of the last warehouse load date</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Customer Housing Type</td>
<td>Type of housing of the customer, as of the last warehouse load date</td>
<td>Rented, Home Owner</td>
</tr>
<tr>
<td>Customer Marital Status</td>
<td>Marital status of the customer, as of the last warehouse load date</td>
<td>Single (never married), Divorced, Married</td>
</tr>
<tr>
<td>Customer Lifetime Value Score</td>
<td>Lifetime value score of the customer, as of the last warehouse load date</td>
<td>Medium, High, Low</td>
</tr>
</tbody>
</table>

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.
# Customer

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUSTOMER_ID</td>
<td>L_CUSTOMER</td>
<td>F_CUST_STATUS_HIST, F_CUST_TXN_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>CUSTOMER_NAME</td>
<td>L_CUSTOMER</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Current Customer Status</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Age Range</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer City</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Education</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Gender</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Household Count</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Housing Type</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Income Range</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Lifetime Value Score</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Marital Status</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

# Customer Acquisition Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ACQUISITION_DATE</td>
<td>L_CUSTOMER</td>
<td>None</td>
</tr>
</tbody>
</table>
**Customer Lost Date**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LOST_DATE</td>
<td>L_CUSTOMER</td>
<td>None</td>
</tr>
</tbody>
</table>

**Current Customer Status**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_STATUS_ID, CURR_CUST_STATUS_ID</td>
<td>L_CURR_CUST_STATUS</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_STATUS_DESC</td>
<td>L_CURR_CUST_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

Note the following:

When porting, be aware that multiple form expressions are used.

L_CURR_CUST_STATUS is a logical table defined as a table alias of L_CUST_STATUS. This feature allows two attributes to be based on the same physical table although each of them is a different concept. Values for Customer Status and Current Customer Status are the same.

**Current Customer Tenure (months)**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CURR_TENURE</td>
<td>L_CUSTOMER</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>
### Customer Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_STATUS_ID</td>
<td>L_CUST_STATUS</td>
<td>F_CUST_STATUS_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_STATUS_DESC</td>
<td>L_CUST_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

### Customer Tenure (months)

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>TENURE</td>
<td>F_CUST_STATUS_HIST</td>
<td>None</td>
</tr>
</tbody>
</table>

### Customer Age Range

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_AGE_RNG_ID</td>
<td>L_CUST_AGE_RNG</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_AGE_RNG_DESC</td>
<td>L_CUST_AGE_RNG</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

### Customer Gender

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_GENDER_ID</td>
<td>L_CUST_GENDER</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_GENDER_DESC</td>
<td>L_CUST_GENDER</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>
### Customer Income Range

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_INC_RNG_ID</td>
<td>L_CUST_INC_RNG</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_INC_RNG_DESC</td>
<td>L_CUST_INC_RNG</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

### Customer City

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_CITY_ID</td>
<td>L_CUST_CITY</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_CITY_DESC</td>
<td>L_CUST_CITY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer State</td>
<td>One-to-many</td>
<td>L_CUST_CITY</td>
</tr>
</tbody>
</table>

### Customer State

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_STATE_ID</td>
<td>L_CUST_CITY</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_STATE_DESC</td>
<td>L_CUST_CITY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>City</td>
<td>None</td>
<td>One-to-many</td>
</tr>
<tr>
<td>None</td>
<td>Customer Region</td>
<td>One-to-many</td>
<td>L_CUST_CITY</td>
</tr>
</tbody>
</table>
## Customer Region

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_REGION_ID</td>
<td>L_CUST_CITY</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_REGION_DESC</td>
<td>L_CUST_CITY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>State</td>
<td>One-to-many</td>
<td>L_CUST_CITY</td>
</tr>
</tbody>
</table>

## Customer Education

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_EDUCATION_ID</td>
<td>L_CUST_EDUCATION</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_EDUCATION_DESC</td>
<td>L_CUST_EDUCATION</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

## Customer Household Count

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_HH_COUNT_ID</td>
<td>L_CUST_HH_COUNT</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_HH_COUNT_DESC</td>
<td>L_CUST_HH_COUNT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>
# Customer Housing Type

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_HOUSING_ID</td>
<td>L_CUST_HOUSING</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_HOUSING_DESC</td>
<td>L_CUST_HOUSING</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

# Customer Marital Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_MARITAL_STS_ID</td>
<td>L_CUST_MARITAL_STS</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_MARITAL_STS_DESC</td>
<td>L_CUST_MARITAL_STS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

# Customer Lifetime Value Score

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_LV_SCORE_ID</td>
<td>L_CUST_LV_SCORE</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_LV_SCORE_DESC</td>
<td>L_CUST_LV_SCORE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>
Product hierarchy

This hierarchy represents the products or services offered by the company.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Group</td>
<td>Classification of products.</td>
<td>Food &amp; Beverages, Cosmetics</td>
</tr>
<tr>
<td>Product</td>
<td>Product.</td>
<td>Coffee, Tea</td>
</tr>
<tr>
<td>Affinity Product</td>
<td>Dummy attribute for product used for affinity analysis. (Affinity products are products closely related to each other or often purchased together).</td>
<td>Coffee, Tea</td>
</tr>
</tbody>
</table>

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Product Group

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PRODUCT_GRP_ID</td>
<td>L_PRODUCT</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>PRODUCT_GRP_DESC</td>
<td>L_PRODUCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
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<td>One-to-many</td>
<td>L_PRODUCT</td>
</tr>
</tbody>
</table>

### Product

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PRODUCT_ID</td>
<td>L_PRODUCT</td>
<td>F_CUST_TXN_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>PRODUCT_DESC</td>
<td>L_PRODUCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Product Group</td>
<td>Many-to-one</td>
<td>L_PRODUCT</td>
</tr>
</tbody>
</table>
Affinity Product

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PRODUCT_ID</td>
<td>L_PRODUCT</td>
<td>F_CUST_TXN_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>PRODUCT_DESC</td>
<td>L_PRODUCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Product Group</td>
<td>One-to-many</td>
<td>L_PRODUCT</td>
</tr>
</tbody>
</table>

Transaction hierarchy

This hierarchy represents the unique numeric identifier for each transaction type posted.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction</td>
<td>A unique transaction identifier that indicates a transaction occurred</td>
<td>12000</td>
</tr>
</tbody>
</table>

The detailed definitions of the attribute in the MicroStrategy metadata repository listed previously are shown in the following table.

Transaction

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>TXN_ID</td>
<td>L_TRANSACTION</td>
<td>F_CUST_TXN_HIST</td>
</tr>
</tbody>
</table>
Time hierarchy

This hierarchy represents the calendar time.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Calendar year.</td>
<td>2003</td>
</tr>
<tr>
<td>Quarter</td>
<td>Calendar quarter. This also includes attributes in the other fact tables that are associated with time period as quarter.</td>
<td>Q3-2003</td>
</tr>
<tr>
<td>Month</td>
<td>Calendar month. This also includes attributes in the other fact tables that are associated with time period as month.</td>
<td>Nov, 2003</td>
</tr>
<tr>
<td>Date</td>
<td>Calendar date. This also includes attributes in the other fact tables that are associated with time period as date.</td>
<td>12/24/2003</td>
</tr>
</tbody>
</table>

The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.

**Date**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DATE_ID</td>
<td>L_CAL_DATE</td>
<td>F_CUST_TXN_HIST</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Month</td>
<td>One-to-many</td>
<td>L_CAL_DATE</td>
</tr>
</tbody>
</table>

**Month**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>MNTH_ID</td>
<td>L_CAL_MNTH</td>
<td>F_CUST_STATUS_HIST L_CAL_DATE</td>
</tr>
<tr>
<td>DESC</td>
<td>MNTH_DESC</td>
<td>L_CAL_MNTH</td>
<td>None</td>
</tr>
<tr>
<td>Children</td>
<td>Parents</td>
<td>Relationship Type</td>
<td>Table</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Date</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_DATE</td>
</tr>
<tr>
<td>Quarter</td>
<td>Quarter</td>
<td>One-to-many</td>
<td>L_CAL_MNTH</td>
</tr>
</tbody>
</table>

**Quarter**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>QTR_ID</td>
<td>L_CAL_QTR</td>
<td>L_CAL_DATE</td>
</tr>
<tr>
<td>DESC</td>
<td>QTR_DESC</td>
<td>L_CAL_QTR</td>
<td>None</td>
</tr>
</tbody>
</table>

**Year**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>YEAR_ID</td>
<td>L_CAL_YEAR</td>
<td>L_CAL_DATE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>
Facts

This section describes the facts used in CAM. The underlying processes are also explained briefly.

The main fact groups are

- **Revenue**: The amount of money generated from a transaction. It is also the price at which products were sold to a customer.
- **Cost**: The price the company paid to acquire or manufacture the products.
- **Index for Customer Counts from Customer Lookup**: All customer counts based on current information.
- **Index for Customer Counts with Historical Status**: All customer counts based on historical information.
- **Index for Customer Counts with Transactions**: A count of all customers with transactions.
- **Index for Order Counts**: A count of all orders and transactions based on historical information.

For additional details, see the MicroStrategy project definitions in the *Schema Objects/Attributes* and *Schema Objects/Facts* folders. Double-click any attribute or fact to view definitions, properties, source tables, and so on.

Revenue fact

This fact is the amount of money generated from a transaction, and provides a value for generated revenue. It is also the price at which products were sold to a customer. Metrics based on this fact are used for ranking customers by their revenue contributions and, when combined with cost, for profit calculations.
Fact

Revenue

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVENUE</td>
<td>Automatic</td>
<td>F_CUST_TXN_HIST</td>
<td>Customer, Date, Product, Transaction</td>
</tr>
</tbody>
</table>

Cost fact

This fact provides the cost of products sold. It is the price that the company paid to acquire or manufacture the products. Metrics based on this fact, along with those based on revenue, are used for calculating product and customer profitability, as well as cost.

Fact

Cost

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>COST</td>
<td>Automatic</td>
<td>F_CUST_TXN_HIST</td>
<td>Customer, Date, Product, Transaction</td>
</tr>
</tbody>
</table>
Index for Customer Counts from Customer Lookup fact

This fact is used for all customer counts based on current information. The Current Customer Count metrics are calculated using the CUSTOMER_ID column from the L_CUSTOMER table. All current status customer counts are based on this fact.

Fact

Index for Customer Counts from Customer Lookup

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMER_ID</td>
<td>Manual</td>
<td>L_CUSTOMER</td>
<td>Customer, Age Range, City, Education, Gender, Household Count, Housing Type, Income Range, Lifetime Value Score, Marital Status, Acquisition Date, Lost Date, Current Customer Tenure (Months), Current Customer Status</td>
</tr>
</tbody>
</table>

Index for Customer Counts with Historical Status fact

This fact is used for all the customer counts based on historical information. All Historical Customer Count metrics are calculated using the CUSTOMER_ID column from the F_CUST_STATUS_HIST table. The rate at which information is updated is reflected in the time key of this table.

Fact

Index for Customer Counts with Historical Status
Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMER_ID</td>
<td>Manual</td>
<td>F_CUST_STATUS_HIST</td>
<td>Customer, Customer Status, Month,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Customer Tenure (Months)</td>
</tr>
</tbody>
</table>

**Index for Customer Counts with Transactions fact**

This fact is used for all counts of customers with transactions. All customer count metrics are calculated using the CUSTOMER_ID column from the F_CUST_TXN_HIST table.

**Fact**

Index for Customer Counts with Transactions

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMER_ID</td>
<td>Manual</td>
<td>F_CUST_TXN_HIST</td>
<td>Customer, Product (Affinity Product), Date, Transaction</td>
</tr>
</tbody>
</table>

**Index for Order Counts fact**

This fact is used for all order and transaction counts based on historical information. All transaction count metrics are calculated using the TXN_ID column from the F_CUST_TXN_HIST table.
Fact

Index for Order Counts

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>TXN_ID</td>
<td>Manual</td>
<td>F_CUST_TXN_HIST</td>
<td>Customer, Product (Affinity Product), Date, Transaction</td>
</tr>
</tbody>
</table>

Transformations

CAM includes the following time transformations to enable analysis of a selected time period compared to another time period. All these transformations are based on table transformations.

<table>
<thead>
<tr>
<th>Transformation</th>
<th>Definition</th>
<th>Attribute</th>
<th>Transformation Table</th>
<th>Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Month</td>
<td>Enables analysis of a selected month compared to the previous month</td>
<td>Month</td>
<td>L_CAL_MNTH</td>
<td>LAST_MNTH_ID</td>
</tr>
<tr>
<td>Previous Quarter</td>
<td>Enables analysis of a selected quarter compared to the previous quarter</td>
<td>Quarter</td>
<td>L_CAL_QTR</td>
<td>LAST_QTR_ID</td>
</tr>
<tr>
<td>Previous Year</td>
<td>Enables analysis of a selected year compared to the previous year</td>
<td>Year</td>
<td>L_CAL_YEAR</td>
<td>LAST_YEAR_ID</td>
</tr>
</tbody>
</table>
INTRODUCTION

This appendix provides a diagram of the physical schema that comes with the Customer Analysis Module (CAM). This appendix also provides descriptions of all the tables and columns in the default data warehouse.

PREREQUISITES

This appendix was written for consultants and developers implementing and customizing the CAM application and for those building ETL routines to populate the data warehouse. It assumes you are familiar with basic RDBMS concepts and Erwin data modeling.
CAM physical schema

The following diagram represents the physical schema shipped with CAM. The physical schema is available in an Erwin file, located in Program Files/MicroStrategy/Analytics Modules/CAM/CA.erl.

Fact tables appear in teal (color) or gray (black and white).
Table information

This section describes each physical table used in CAM.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
<th>Analysis Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>F_CUST_STATUS_HIST</td>
<td>Fact table containing the history of Customer Statuses tracked on a monthly basis. It is expected that all customers have a record in this table for every month for which history has to be tracked.</td>
<td>Customer</td>
</tr>
<tr>
<td>F_CUST_TXN_HIST</td>
<td>Fact table containing information about products purchased by customers.</td>
<td>Transaction</td>
</tr>
<tr>
<td>L_CAL_DATE</td>
<td>Lookup table for dates.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_MNTH</td>
<td>Lookup table for months.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_QTR</td>
<td>Lookup table for quarters.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_YEAR</td>
<td>Lookup table for years.</td>
<td>Time</td>
</tr>
</tbody>
</table>
| L_CUST_AGE_RNG        | Lookup table for Customer Demographic: Income Range. The values are:  
  • 1 for below 20  
  • 2 for 21-40  
  • 3 for 41-60  
  • 4 for 61-80  
  • 5 for 81 and above  
                                                                                                                                   | Customer      |
| L_CUST_CITY           | Lookup table for customer geographic information: City, State, and Region.                                                                                                                                   | Customer      |
| L_CUST_EDUCATION      | Lookup table for Customer Psychographics: Level of Education. Values are:  
  • 1 - Undergraduate  
  • 2 - Graduate  
  • 3 - Other  
                                                                                                                                   | Customer      |
| L_CUST_GENDER         | Lookup table for Customer Demographic: Gender. The values are:  
  • 1 - Male  
  • 2 – Female  
                                                                                                                                   | Customer      |
| L_CUST_HH_COUNT       | Lookup table for Customer Psychographics: Number of people in the household in which the customer resides.                                                                                                 | Customer      |
| L_CUST_HOUSING        | Lookup table for Customer Psychographics: Housing information. Values are:  
  • 1 - Renter  
  • 2 - Owner  
<pre><code>                                                                                                                               | Customer      |
</code></pre>
<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
<th>Analysis Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>L_CUST_INC_RNG</td>
<td>Lookup table for Customer Demographic: Income Range. Values are:</td>
<td>Customer</td>
</tr>
<tr>
<td></td>
<td>• 1 for 0 - 20,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 2 for 20,001 - 40,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 3 for 40,001 - 60,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 4 for 60,001 - 80,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 5 for 80,001 upward</td>
<td></td>
</tr>
<tr>
<td>L_CUST_LV_SCORE</td>
<td>Lookup table for Customer Lifetime Value Score. Values are:</td>
<td>Customer</td>
</tr>
<tr>
<td></td>
<td>• 1 - High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 2 - Medium                    • 3 – Low</td>
<td></td>
</tr>
<tr>
<td>L_CUST_MARITAL_STS</td>
<td>Lookup table for Customer Psychographics: Marital Status. Values are:</td>
<td>Customer</td>
</tr>
<tr>
<td></td>
<td>• 1 - Single (Never Married)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 2 - Married                   • 3 - Divorced</td>
<td></td>
</tr>
<tr>
<td>L_CUST_STATUS</td>
<td>Lookup table for Customer Statuses. Values are 1 for Active and 2 for Lost.</td>
<td>Customer</td>
</tr>
<tr>
<td></td>
<td>An alias of this table also serves as the lookup for Current Customer Status.</td>
<td></td>
</tr>
<tr>
<td>L_CUSTOMER</td>
<td>Lookup table for customer data. This targets a customer as a consumer rather</td>
<td>Customer</td>
</tr>
<tr>
<td></td>
<td>than a business.</td>
<td></td>
</tr>
<tr>
<td>L_PRODUCT</td>
<td>Lookup table for product information.</td>
<td>Product</td>
</tr>
<tr>
<td>L_TRANSACTION</td>
<td>Lookup table for transactions.</td>
<td>Transaction</td>
</tr>
</tbody>
</table>
This section describes each physical table column used in CAM.

The Data Type column information in the following table reflects an Oracle database-specific format; depending on what database type you use, your data type may appear differently. You can use the Erwin file (see the CAM physical schema section above) to easily convert this information to another database type.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table: F_CUST_STATUS_HIST</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUST_STATUS_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Status of the customer in a particular month.</td>
<td>References CUST_STATUS_ID in L_CUST_STATUS</td>
</tr>
<tr>
<td>CUSTOMER_ID</td>
<td>Double</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Customer identification.</td>
<td>References CUSTOMER_ID in L_CUSTOMER</td>
</tr>
<tr>
<td>MNTH_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Month identification.</td>
<td>References MNTH_ID in L_CAL_MNTH</td>
</tr>
<tr>
<td>TENURE</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Number of months customer has had a relationship.</td>
<td></td>
</tr>
</tbody>
</table>

<p>| <strong>Table: F_CUST_TXN_HIST</strong> |            |               |                          |                                                      |                                                       |
| CUSTOMER_ID          | Double     | Not NULL      | Yes/Yes                  | Customer identification.                             | References CUSTOMER_ID in L_CUSTOMER                  |
| PRODUCT_ID           | Numeric    | Not NULL      | Yes/Yes                  | Product which the customer has purchased/subscribed to. | References PRODUCT_ID in L_PRODUCT                   |
| DATE_ID              | TimeStamp  | Not NULL      | Yes/Yes                  | Date of the transaction/order.                       | References DATE_ID in L_CAL_DATE                     |
| TXN_ID               | Numeric    | Not NULL      | Yes/Yes                  | Transaction/order identification.                    | References TXN_ID in L_TRANSACTION                   |</p>
<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVENUE</td>
<td>Numeric (15, 3)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Revenue tagged with the record. This is not the revenue for the transaction, which may have multiple products. However, if there are multiple items of the same product, Revenue is the consolidated figure of all items.</td>
<td></td>
</tr>
<tr>
<td>COST</td>
<td>Numeric (15, 3)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Cost tied with the record. This is not the cost for the transaction, which may have multiple products. However, if there are multiple items of the same product, Cost is the consolidated figure of all items.</td>
<td></td>
</tr>
<tr>
<td>NO_OF_ITEMS</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Number of product items the customer purchased as part of this transaction.</td>
<td></td>
</tr>
</tbody>
</table>

**Table: L_CAL_DATE**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE_ID</td>
<td>TimeStamp (0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of calendar date.</td>
<td></td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Year of the date.</td>
<td>References YEAR_ID in L_CAL_YEAR</td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Quarter of the date.</td>
<td>References QTR_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>MNTH_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Month of the date.</td>
<td>References MNTH_ID in L_CAL_MNTH</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Table: L_CAL_MNTH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNTH_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Month of the date.</td>
<td></td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Quarter of the date.</td>
<td>References QTR_ID in L_CAL_QTR</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Year of the date.</td>
<td>References YEAR_ID in L_CAL_YEAR</td>
</tr>
<tr>
<td>MNTH_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Month description.</td>
<td></td>
</tr>
<tr>
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<td>No/Yes</td>
<td>Month previous to the month indicated by this record.</td>
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</tr>
<tr>
<td><strong>Table: L_CAL_QTR</strong></td>
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<td>Year of the date.</td>
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<td>Quarter previous to the quarter indicated by this record.</td>
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<td><strong>Table: L_CAL_YEAR</strong></td>
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</tr>
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<td><strong>Table: L_CUST_AGE_RNG</strong></td>
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</tr>
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<td>Yes/No</td>
<td>Unique identifier of age range brackets for customers.</td>
<td>Default values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 - below 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2 - 21-40</td>
</tr>
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<td></td>
<td></td>
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<td></td>
<td>• 3 - 41-60</td>
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<td></td>
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<td></td>
<td>• 4 - 61-80</td>
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<td></td>
<td></td>
<td></td>
<td>• 5 - 81 and above</td>
</tr>
<tr>
<td>Column Name</td>
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<td>Primary Key/Foreign Key</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
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<td>---------------------------</td>
<td>------------</td>
<td>---------------</td>
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<td>Description of age range brackets for customers.</td>
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<td>Unique identifier of customer city values.</td>
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<td>Unique identifier of customer state.</td>
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</tr>
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<td>Description of customer city.</td>
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<td>Unique identifier of customer region.</td>
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<td>Description of customer region.</td>
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<td>Description of customer state.</td>
<td></td>
</tr>
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<td></td>
</tr>
<tr>
<td>CUST_EDUCATION_ID</td>
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<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer education level. Default values are:</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 - Undergraduate</td>
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<td></td>
<td></td>
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<td>• 2 - Graduate</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 3 - Other</td>
<td></td>
</tr>
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<td>No/No</td>
<td>Description of customer education level.</td>
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</tr>
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<td></td>
<td></td>
</tr>
<tr>
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<td>Yes/No</td>
<td>Unique identifier of gender of a customer. Default values are:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 - Male</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2 - Female</td>
<td></td>
</tr>
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<td>No/No</td>
<td>Description of gender of a customer.</td>
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<td>Table: L_CUST_HH_COUNT</td>
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<td></td>
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<td>CUST_HH_COUNT_ID</td>
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<td>Yes/No</td>
<td>Unique identifier of set of customer household counts.</td>
<td></td>
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<tr>
<td>Column Name</td>
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<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
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<td>---------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CUST_HH_COUNT_DESC</td>
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<td>No/No</td>
<td>Description of sets of customer household counts.</td>
<td></td>
</tr>
<tr>
<td>Table: L_CUST_HOUSING</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUST_HOUSING_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer housing category.</td>
<td>Default values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 - Renter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2 - Owner</td>
</tr>
<tr>
<td>CUST_HOUSING_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer housing category.</td>
<td></td>
</tr>
<tr>
<td>Table: L_CUST_INC_RNG</td>
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<td></td>
</tr>
<tr>
<td>CUST_INC_RNG_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of income range bracket for a customer.</td>
<td>Default values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 - 0-20,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2 - 20,001-40,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 3 - 40,001-60,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 4 - 60,001-80,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 5 - 80,001 upward</td>
</tr>
<tr>
<td>CUST_INC_RNG_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description for customer income range bracket.</td>
<td></td>
</tr>
<tr>
<td>Table: L_CUST_LV_SCORE</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CUST_LV_SCORE_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer lifetime value level.</td>
<td>Default values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 - High</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2 - Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 3 - Low</td>
</tr>
<tr>
<td>CUST_LV_SCORE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer lifetime value score.</td>
<td></td>
</tr>
<tr>
<td>Table: L_CUST_MARITAL_STS</td>
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<td></td>
</tr>
<tr>
<td>MARITAL_STS_ID</td>
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<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of marital status for a customer.</td>
<td>Default values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 - Single (never married)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2 - Married</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 3 - Divorced</td>
</tr>
<tr>
<td>MARITAL_STS_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of marital status for customer.</td>
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</tr>
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</table>
### Table: L_CUST_STATUS

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<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUST_STATUS_ID</td>
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<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer status.</td>
<td>Default values are: 1 - Active 2 - Lost</td>
</tr>
<tr>
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<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer status.</td>
<td></td>
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</table>

### Table: L_CUSTOMER

<table>
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<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMER_ID</td>
<td>Double</td>
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<td>Yes/No</td>
<td>Unique identifier of customer.</td>
<td></td>
</tr>
<tr>
<td>CURR_CUST_STATUS_ID</td>
<td>Numeric</td>
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<td>No/Yes</td>
<td>Unique identifier of customer status.</td>
<td>References CURR_CUST_STATUS_ID in L_CURR_CUST_STATUS</td>
</tr>
<tr>
<td>CUST_LV_SCORE_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Lifetime value score for the customer.</td>
<td>References CUST_LV_SCORE_ID in L_CUST_LV_SCORE</td>
</tr>
<tr>
<td>CUST_HOUSING_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Housing type for the customer.</td>
<td>References CUST_HOUSING_ID in L_CUST_HOUSING</td>
</tr>
<tr>
<td>CUST_EDUCATION_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Education level for the customer.</td>
<td>References CUST_EDUCATION_ID in L_CUST_EDUCATION</td>
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<tr>
<td>MARITAL_STS_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Marital status for the customer.</td>
<td>References CUST_MARITAL_STS_ID in L_CUST_MARITAL_STS</td>
</tr>
<tr>
<td>CUST_HH_COUNT_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Number of people in the customer household.</td>
<td>References CUST_HH_COUNT_ID in L_CUST_HH_COUNT</td>
</tr>
<tr>
<td>CUST_GENDER_ID</td>
<td>Numeric</td>
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<td>No/Yes</td>
<td>Gender of the customer.</td>
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</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
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<td>------------------------</td>
<td>-----------------</td>
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<td>--------------------------</td>
<td>--------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CUST_AGE_RNG_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Age range of the customer.</td>
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</tr>
<tr>
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<td>Numeric (38,0)</td>
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<td>No/Yes</td>
<td>Income range of the customer.</td>
<td>References CUST_INC_RNG_ID in L_CUST_INC_RNG</td>
</tr>
<tr>
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<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>City of residence of the customer.</td>
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</tr>
<tr>
<td>ACQUISITION_DATE</td>
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<td>No/No</td>
<td>Date when the customer was acquired.</td>
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<td>No/No</td>
<td>Customer description.</td>
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</tr>
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<td>CURR_TENURE</td>
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<td>No/No</td>
<td>Current tenure in months of the customer.</td>
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</tr>
<tr>
<td>LOST_DATE</td>
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<td>NULL</td>
<td>No/No</td>
<td>Date on which customer was lost, if customer status equals lost.</td>
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</table>

**Table: L_PRODUCT**

<table>
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<tr>
<th>PRODUCT_ID</th>
<th>Numeric (38,0)</th>
<th>Not NULL</th>
<th>Yes/No</th>
<th>Unique identifier of products which customer can purchase or subscribe to.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT_GRP_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Unique identifier of product classification.</td>
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</tr>
<tr>
<td>PRODUCT_DESC</td>
<td>VarChar (30)</td>
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<td>No/No</td>
<td>Product description.</td>
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<tr>
<td>PRODUCT_GRP_DESC</td>
<td>VarChar (30)</td>
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<td>No/No</td>
<td>Description of product classification.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
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</tr>
<tr>
<td>TXN_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of transactions/orders.</td>
<td></td>
</tr>
</tbody>
</table>
Introduction

This appendix presents the logical data model on which the Sales Analysis Module (SAM) is built.

This appendix provides a description for

- business hierarchies, including attributes and relationships, and their metadata objects definitions
- module transformations and user hierarchies
- module facts

For a general description, basic procedures, and additional details about understanding and working with SAM’s logical data model, see Chapter 1, Introduction to the Sales Analysis Module.

Information can also be found by accessing each attribute’s definition using the Attribute Editor. The attributes can be found in the Schema Objects/Attributes folder. Double-click an attribute to open the Attribute Editor.
Prerequisites

This appendix assumes you have prior experience with logical data modeling and creating business intelligence applications using MicroStrategy technology.

SAM logical schema

The following diagram represents the logical model shipped with SAM. The logical schema diagram is also available in an Erwin file, which is located in Program Files/MicroStrategy/Analytics Modules/SAM/Sales.E1.

Fact tables appear in teal (color) or dark gray (black and white). Relate tables appear in light gray.
Business hierarchies

SAM is designed to provide deep insight into your entire sales process. SAM accomplishes this partly through a set of attributes (business concepts) and their relationships to each other. These attributes are arranged in a specific sequence according to a business structure, and that arrangement is called a hierarchy.

The key business hierarchies in the sales analysis process are

- Account: The external party in the sales cycle
- Sales Organization: The organization within the company leading the sales cycle
- Product: The product (or services) offered by the company
- Lead: When an account expresses interest in company products
- Opportunity: The sales cycle and its many stages
- Order: Whenever an opportunity is closed because the company sells products
- Time: The calendar time

Each business hierarchy is detailed in the following sections. For additional information on hierarchies, see the MicroStrategy project definitions in SAM's Schema Objects/Attributes and Schema Objects/Facts folders. From one of these folders, double-click an attribute or fact to view definitions, properties, source tables, and so on.
Account hierarchy

This hierarchy represents the external party in the sales cycle. The attributes and relationships in the following figure represent the Account hierarchy.

A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>Industry to which the company belongs</td>
<td>Retail, banking, telco</td>
</tr>
</tbody>
</table>
| Number of Employees | Measure of the size of the company  
**Note**: This attribute is not included in the MicroStrategy project. | Numeric value or range                       |
| Company        | The prospect or customer                                                     | The Cheesecake Company                       |
| Account        | Entity within the company that originates an opportunity or purchases products | Marketing department, IT department          |

The detailed definition of each attribute in the MicroStrategy metadata repository listed previously is shown in the following tables (except where noted in the previous table).
## Industry

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
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<th>Other Tables</th>
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</tr>
<tr>
<td>DESC</td>
<td>INDUS_DESC</td>
<td>L_COMPANY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
<td>None</td>
<td>One-to-many</td>
<td>L_COMPANY</td>
</tr>
</tbody>
</table>

## Company

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>COMPANY_ID</td>
<td>L_COMPANY</td>
<td>L_ACCT</td>
</tr>
<tr>
<td>DESC</td>
<td>COMPANY_DESC</td>
<td>L_COMPANY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account</td>
<td>None</td>
<td>One-to-many</td>
<td>L_ACCT</td>
</tr>
<tr>
<td>None</td>
<td>Industry</td>
<td>Many-to-one</td>
<td>L_COMPANY</td>
</tr>
<tr>
<td>None</td>
<td>Number of Employees</td>
<td>Many-to-one</td>
<td>L_COMPANY</td>
</tr>
</tbody>
</table>

## Account

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LEAD_ID</td>
<td>L_ACCT</td>
<td>F_LEAD_STATUS, F_OPTY and F_ORDER</td>
</tr>
<tr>
<td>DESC</td>
<td>LEAD_DESC</td>
<td>L_ACCT</td>
<td>None</td>
</tr>
</tbody>
</table>
Sales Organization hierarchy

This hierarchy represents the sales organization within the company leading the sales cycle. The attributes and relationships in the following figure represent the Sales Organization hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Region</td>
<td>Sales Organization is subdivided into Regions. Several districts may be assigned to one sales region.</td>
<td>Canada, Europe, United States</td>
</tr>
<tr>
<td>Sales District</td>
<td>Within each Sales Region, there is a subdivision into Sales Districts. Several sales representatives may be assigned to one sales district.</td>
<td>Ontario, Quebec, Northern Europe, Central Europe, Northeast US, Central US</td>
</tr>
<tr>
<td>Sales Representative</td>
<td>This is the lowest level in the sales organization, representing the individual who is responsible for the sales cycle.</td>
<td>Jane Doe, Jim Smith</td>
</tr>
</tbody>
</table>
The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.

**Sales Region**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_REGN_ID</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_REGN_DESC</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales District</td>
<td>None</td>
<td>One-to-many</td>
<td>L_SALES_REP</td>
</tr>
</tbody>
</table>

**Sales District**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_DIST_ID</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_DIST_DESC</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Representative</td>
<td>None</td>
<td>One-to-many</td>
<td>L_SALES_REP</td>
</tr>
<tr>
<td>None</td>
<td>Sales Region</td>
<td>Many-to-one</td>
<td>L_SALES_REP</td>
</tr>
</tbody>
</table>
Sales Representative

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_REP_ID</td>
<td>L_SALES_REP</td>
<td>F_ORDER, F_OPTY, F_OPTY_MNTH_HIST, and F_SALES_REP_QTA</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_REP_DESC</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Sales Region</td>
<td>Many-to-one</td>
<td>L_SALES_REP</td>
</tr>
<tr>
<td>None</td>
<td>Sales District</td>
<td>Many-to-one</td>
<td>L_SALES_REP</td>
</tr>
</tbody>
</table>

Product hierarchy

This hierarchy represents the products (or services) offered by the company. The attributes and relationships in the following figure represent the Product hierarchy.

A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.
The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following table.

### Product Group

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Group</td>
<td>Products are organized into categories. Each product group includes several products.</td>
<td>Servers, storage products</td>
</tr>
<tr>
<td>Product</td>
<td>The product or service sold by the company. • An order may include one or more products. • An opportunity will also have a number of products assigned. • Lead does not include product information.</td>
<td>NT servers, UNIX servers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PROD_GRP_ID</td>
<td>L_SALES_PRODUCT</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>PROD_GRP_DESC</td>
<td>L_SALES_PRODUCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>None</td>
<td>One-to-many</td>
<td>L_SALES_PRODUCT</td>
</tr>
</tbody>
</table>

### Product

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PROD_ID</td>
<td>L_SALES_PROD</td>
<td>F_ORDER</td>
</tr>
<tr>
<td>DESC</td>
<td>PROD_NAME</td>
<td>L_SALES_PROD</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Product Group</td>
<td>Many-to-one</td>
<td>L_SALES_PRODUCT</td>
</tr>
<tr>
<td>None</td>
<td>Opportunity</td>
<td>Many-to-many</td>
<td>R_OPTY_PROD</td>
</tr>
</tbody>
</table>
Lead hierarchy

A lead is established when an account expresses interest in the company products (or services). The attributes and relationships in the following figure represent the Lead hierarchy.

A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Source</td>
<td>Source through which a lead was generated</td>
<td>Web, campaign, indirect, partner</td>
</tr>
<tr>
<td>Lead Type</td>
<td>Indicates whether a lead is from a new prospect or from an existing customer</td>
<td>New business or existing business</td>
</tr>
</tbody>
</table>
| Lead Status | The lead’s current situation; for example, “qualified” when it becomes a sales opportunity, or “closed” because the lead didn’t qualify
  • Only the last Lead Status is stored; whenever the status changes, the value is updated in all tables | Qualified, closed, no response               |
| Lead        | Represents an account’s interest in the company’s products or services, which may become a sales opportunity
  • Each Lead will be assigned to one account
  • Once a lead is qualified, an Opportunity is created and assigned to the lead
  • Finally, when an Opportunity is closed and an order generated, Order will be associated to the original Lead | High NT Performance Seminar – November, DC |

The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.
### Lead Source

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LEAD_SRC_ID</td>
<td>L_LEAD_SOURCE</td>
<td>L_LEAD</td>
</tr>
<tr>
<td>DESC</td>
<td>LEAD_SRC_DESC</td>
<td>L_LEAD_SOURCE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>None</td>
<td>One-to-many</td>
<td>L_LEAD</td>
</tr>
</tbody>
</table>

### Lead Type

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LEAD_TYPE_ID</td>
<td>L_LEAD_TYPE</td>
<td>L_LEAD</td>
</tr>
<tr>
<td>DESC</td>
<td>LEAD_TYPE_DESC</td>
<td>L_LEAD_TYPE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>None</td>
<td>One-to-many</td>
<td>L_LEAD</td>
</tr>
</tbody>
</table>

### Lead Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LEAD_STAT_ID</td>
<td>L_STATUS</td>
<td>L_LEAD</td>
</tr>
<tr>
<td>DESC</td>
<td>LEAD_STAT_DESC</td>
<td>L_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>
Opportunity hierarchy

Opportunity represents the sales cycle and its various stages. The relationship with Opportunity was established to identify products associated with an opportunity (R_OPTY_PROD) and then analyze product closure (opportunities compared to orders at the product level).

Drilling from Opportunity to Product when opportunity size metrics are present is not recommended because those facts are not defined at the product level.
The attributes and relationships in the following figure represent the Opportunity hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity Open Date</td>
<td>Day when opportunity was opened; therefore, when a qualified lead was assigned to a sales representative</td>
<td>12/15/2001</td>
</tr>
<tr>
<td>Opportunity Close Date</td>
<td>Day when opportunity was closed, or when opportunity reached the status of “Closed” or “Lost”</td>
<td>1/15/2003</td>
</tr>
<tr>
<td>Opportunity Estimated Close Date</td>
<td>Estimated date for when an opportunity will be closed</td>
<td>11/10/2003</td>
</tr>
<tr>
<td>Primary Competitor</td>
<td>Other company involved in the sales opportunity offering competitive products</td>
<td>Advanced Microsystems, Inc.</td>
</tr>
<tr>
<td>Opportunity Status</td>
<td>For a specific time, the status of the opportunity in the sales cycle</td>
<td>Top of the funnel, In the funnel, Commit, Closed, or Lost</td>
</tr>
<tr>
<td>Current Opportunity Status</td>
<td>For any given time, the most recent value for the sales cycle status</td>
<td>Top of the funnel, In the funnel, Commit, Closed, or Lost</td>
</tr>
<tr>
<td>Close Probability</td>
<td>Probability that the opportunity will become a sale based on the status of the opportunity</td>
<td>An opportunity with a Closed status has a 100% probability assigned; an opportunity with a Commit status has an 80% probability; an opportunity with a Lost status has a 0% probability</td>
</tr>
</tbody>
</table>

A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.
The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.

**Opportunity Open Date**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_OPEN_DATE</td>
<td>L_OPTY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity</td>
<td>None</td>
<td>One-to-many</td>
<td>L_OPTY</td>
</tr>
</tbody>
</table>

**Opportunity Close Date**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_CLOSE_DATE</td>
<td>L_OPTY</td>
<td>None</td>
</tr>
</tbody>
</table>
### Logical Data Model

#### Opportunity Estimated Close Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_EST_CL_DATE</td>
<td>L_OPTY</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Primary Competitor

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PRIMARY_COMP_ID</td>
<td>L_OPTY</td>
<td>None</td>
</tr>
<tr>
<td>ID</td>
<td>COMPETITOR_ID</td>
<td>L_COMPETITOR</td>
<td>None</td>
</tr>
<tr>
<td>DES</td>
<td>COMPETITOR_NAME</td>
<td>L_COMPETITOR</td>
<td>None</td>
</tr>
</tbody>
</table>

### Business hierarchies© 2004 MicroStrategy, Inc.
Opportunity Status

This attribute is related to Opportunity through the fact tables.

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_STAT_ID</td>
<td>L_OPTY_STATUS</td>
<td>F_OPTY, F_OPTY_MNTH_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>OPTY_STAT_DESC</td>
<td>L_OPTY_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Close Probability</td>
<td>Many-to-one</td>
<td>L_OPTY_STATUS</td>
</tr>
</tbody>
</table>

Current Opportunity Status

L_CURR_OPTY_STATUS is a logical table defined as a table alias of L_OPTY_STATUS. This feature allows two attributes to be based on the same physical table, although each of them is a different concept.

Values for Opportunity Status and Current Opportunity Status are the same.

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_STAT_ID</td>
<td>L_CURR_OPTY_STATUS</td>
<td>None</td>
</tr>
<tr>
<td>ID</td>
<td>CURR_OPTY_STAT_ID</td>
<td>None</td>
<td>L_OPTY</td>
</tr>
<tr>
<td>DESC</td>
<td>OPTY_STAT_DESC</td>
<td>L_CURR_OPTY_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Current Close Probability</td>
<td>Many-to-one</td>
<td>L_CURR_OPTY_STATUS</td>
</tr>
<tr>
<td>Opportunity</td>
<td>None</td>
<td>One-to-many</td>
<td>L_OPTY</td>
</tr>
</tbody>
</table>
Close Probability

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_PROB</td>
<td>L_OPTY_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity Status</td>
<td>None</td>
<td>One-to-many</td>
<td>L_OPTY_STATUS</td>
</tr>
</tbody>
</table>

Current Close Probability

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_PROB</td>
<td>L_CURR_OPTY_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Opportunity Status</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CURR_OPTY_STATUS</td>
</tr>
</tbody>
</table>

Opportunity

The relationship with Product was established to identify products associated with an opportunity (R_OPTY_PROD) and then analyze product closure (opportunities vs. orders at the product level).

Drilling from Opportunity to Product when opportunity size metrics are present is not recommended because those facts are not defined at the product level.

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_ID</td>
<td>L_OPTY</td>
<td>F_OPTY, F_OPTY_MNTH_HIST, R_OPTY_PROD, F_ORDER</td>
</tr>
<tr>
<td>DESC</td>
<td>OPTY_DESC</td>
<td>L_OPTY</td>
<td>None</td>
</tr>
</tbody>
</table>
Order hierarchy

An order is established whenever an opportunity is closed and the company sells products. The attributes and relationships in the following figure represent the Order hierarchy.
A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discount Indicator</td>
<td>Indicates whether the order has any form of discount associated with it</td>
<td>Yes or No</td>
</tr>
</tbody>
</table>
| Order                | Unique ID that identifies a purchase  
- An opportunity that is closed (the end of the sales cycle) results in an order  
- Each order has one or more products that have been purchased | Numeric ID: 12573983          |

The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Discount Indicator

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DISCOUNT_IND</td>
<td>L_ORDER</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order</td>
<td>None</td>
<td>One-to-many</td>
<td>L_ORDER</td>
</tr>
</tbody>
</table>

### Order

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ORDER_ID</td>
<td>L_ORDER</td>
<td>F_ORDER</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Discount Indicator</td>
<td>Many-to-one</td>
<td>L_ORDER</td>
</tr>
</tbody>
</table>
Time hierarchy

This hierarchy represents the calendar time. The attributes and relationships in the following figure represent the Time hierarchy.

![Diagram of Time hierarchy]

- A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Calendar year</td>
<td>2003</td>
</tr>
<tr>
<td>Quarter</td>
<td>Calendar quarter.; also includes attributes in the other fact tables that are associated with time period as Quarter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sales Representative Quota is tracked at a quarterly level</td>
<td>Q3-2002</td>
</tr>
</tbody>
</table>
The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Year

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
| Month | Calendar month; also includes attributes in the other fact tables that are associated with time period as Month  
- Opportunity History is tracked at the month level; there is data for all opportunities that are still open with the most recent status for that month stored along with them | Nov, 2003 |
| Date | Calendar date; also includes attributes in the other fact tables that are associated with time period as Date  
- Lead Open Date is tracked in the lead fact table  
- Each opportunity status has an Open Date that is tied to the Time hierarchy through Date  
- Each order has an Order Date that is tied to the Time hierarchy through Date | 12/24/2002 |

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>YEAR_ID</td>
<td>L_CAL_YEAR</td>
</tr>
<tr>
<td>Form Expression</td>
<td></td>
<td>L_CAL_QTR, L_CAL_MNTH, and L_CAL_DATE</td>
</tr>
<tr>
<td>Lookup Table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Tables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Type</td>
<td></td>
<td>One-to-many</td>
</tr>
<tr>
<td>Table</td>
<td></td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>

### Quarter

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>QTR_ID</td>
<td>L_CAL_QTR</td>
</tr>
<tr>
<td>Form Expression</td>
<td></td>
<td>L_CAL_QTR</td>
</tr>
<tr>
<td>Lookup Table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Tables</td>
<td></td>
<td>L_CAL_MNTH, L_CAL_DATE, and F_SALES REP_QTA</td>
</tr>
<tr>
<td>DESC</td>
<td>QTR_DESC</td>
<td>L_CAL_QTR</td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>QTR_ID</td>
<td>L_CAL_QTR</td>
</tr>
<tr>
<td>Form Expression</td>
<td></td>
<td>L_CAL_QTR</td>
</tr>
<tr>
<td>Lookup Table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Tables</td>
<td></td>
<td>L_CAL_MNTH, L_CAL_DATE, and F_SALES REP_QTA</td>
</tr>
<tr>
<td>DESC</td>
<td>QTR_DESC</td>
<td>L_CAL_QTR</td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Month

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td></td>
<td>One-to-many</td>
<td>L_CAL_MNTH</td>
</tr>
<tr>
<td>None</td>
<td>Year</td>
<td>Many-to-one</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>

**Form**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>MNTH_ID</td>
<td>L_CAL_MNTH</td>
<td>L_CAL_DATE, F_OPTY_MNTH_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>MNTH_DESC</td>
<td>L_CAL_MNTH</td>
<td></td>
</tr>
</tbody>
</table>

**Date**

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_DATE</td>
</tr>
<tr>
<td>None</td>
<td>Quarter</td>
<td>Many-to-one</td>
<td>L_CAL_MNTH</td>
</tr>
</tbody>
</table>

**Form**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DATE_ID</td>
<td>L_CAL_DATE</td>
<td>None</td>
</tr>
<tr>
<td>ID</td>
<td>LEAD_OPEN_DATE</td>
<td>None</td>
<td>F_LEAD_STATUS</td>
</tr>
<tr>
<td>ID</td>
<td>STAT_OPEN_DATE</td>
<td>None</td>
<td>F_OPTY</td>
</tr>
<tr>
<td>ID</td>
<td>ORDER_DATE</td>
<td>None</td>
<td>F_ORDER</td>
</tr>
</tbody>
</table>
Transformations

SAM includes the following time transformations to enable analysis of a selected time period compared to another time period. All these transformations are based on table transformations.

<table>
<thead>
<tr>
<th>Transformation</th>
<th>Definition</th>
<th>Attribute</th>
<th>Transformation Table</th>
<th>Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Month</td>
<td>Enables analysis of a selected month compared to the previous month</td>
<td>Month</td>
<td>L_CAL_MNTH</td>
<td>PREV_MNTH_ID</td>
</tr>
<tr>
<td>Previous Quarter</td>
<td>Enables analysis of a selected quarter compared to the previous quarter</td>
<td>Quarter</td>
<td>L_CAL_QTR</td>
<td>PREV_QTR_ID</td>
</tr>
<tr>
<td>Previous Year</td>
<td>Enables analysis of a selected year compared to the previous year</td>
<td>Year</td>
<td>L_CAL_YEAR</td>
<td>PREV_YEAR_ID</td>
</tr>
<tr>
<td>Year to Month</td>
<td>Enables analysis of a selected month compared to all months, from the beginning of the year to the selected month</td>
<td>Month</td>
<td>L_MONTH_YTD</td>
<td>YTD_MNTH_ID</td>
</tr>
<tr>
<td>Year to Quarter</td>
<td>Enables analysis of a selected quarter compared to all quarters, from the beginning of the year to the selected quarter</td>
<td>Quarter</td>
<td>L_QUARTER_YTD</td>
<td>YTD_QTR_ID</td>
</tr>
</tbody>
</table>

User hierarchies

SAM includes several user hierarchies to facilitate navigation through some of the business hierarchies listed previously.

<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Level</th>
<th>Attribute</th>
<th>Entry Point?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account</td>
<td>1</td>
<td>Company</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation for Account hierarchy attributes.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Industry</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Account</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Hierarchy</td>
<td>Level</td>
<td>Attribute</td>
<td>Entry Point?</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------</td>
<td>------------------------</td>
<td>--------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Lead</td>
<td>1</td>
<td>Lead Status</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation for Lead hierarchy attributes.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Lead Source</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Lead Type</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Lead</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>1</td>
<td>Opportunity Status</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation for Opportunity hierarchy attributes.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Current Opportunity Status</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Opportunity Open Date</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Opportunity Close Date</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Primary Competitor</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Opportunity</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Order</td>
<td>1</td>
<td>Discount Indicator</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation for the Order hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Order</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Product</td>
<td>1</td>
<td>Product Group</td>
<td>Yes</td>
<td>• This user hierarchy allows users to navigate through the Product hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Product</td>
<td>No</td>
<td>• Product Group is the entry point.</td>
</tr>
<tr>
<td>Sales Organization</td>
<td>1</td>
<td>Sales Region</td>
<td>Yes</td>
<td>• This user hierarchy allows users to navigate through the Sales Organization hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Sales District</td>
<td>No</td>
<td>• Sales Region is the entry point.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Sales Representative</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>Year</td>
<td>Yes</td>
<td>• This user hierarchy allows users to navigate through the Time hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Quarter</td>
<td>No</td>
<td>• Year is the entry point.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Month</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Date</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Time – Year to Month</td>
<td>1</td>
<td>Year</td>
<td>Yes</td>
<td>• This hierarchy is used for prompts and drill navigation, and allows users to select any time level from year to month.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Quarter</td>
<td>No</td>
<td>• Year is the entry point.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Month</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Time – Year to Quarter</td>
<td>1</td>
<td>Year</td>
<td>Yes</td>
<td>This user hierarchy is used for drill navigation, and allows users to select any time level from year to quarter.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Quarter</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
Facts

This section describes the facts used in SAM.

The main facts are

- **Lead Size**: This fact provides an estimated value of the revenue that may be generated from a lead and is used in amount-related lead metrics.

- **Opportunity Size**: This fact provides the estimated revenue size of an opportunity and is used for estimated revenue metrics.

- **Weighted Opportunity Size**: This fact provides the weighted estimated revenue, and it is dependent on the opportunity size and the opportunity status.

- **Order Amount**: This fact measures revenues generated by each product in an order.

- **Sales Representative Quota**: This is the quota assigned to each sales representative for a specific period. SAM’s default time period for this is Quarter.

- **Index for Lead Counts**: This is a “logical” fact created for lead counts. All lead count metrics are based on this fact.

- **Index for Opportunity Counts**: This is a “logical” fact created for opportunity counts. All opportunity count metrics are based on this fact.

- **Index for Order Counts**: This is a “logical” fact created for order counts. All order count metrics are based on this fact.

For additional details, see the MicroStrategy project definitions in the Schema Objects/Attributes and Schema Objects/Facts folders. Double-click any attribute or fact to view definitions, properties, source tables, and so on.
Lead Size fact

This fact is designed for metrics that are based on the size of the lead. The size of the lead is tracked with every change in the lead status. It is possible that the initial lead size will be different from the lead size when the lead is qualified to become an opportunity. Only the current lead size is recorded in the fact table, so no history details are kept.

If this fact is absent, all reporting on lead size metrics is eliminated.

Fact

Lead Size

Comment

This fact provides an estimated value of the revenue that may be generated from a lead and is used in amount-related lead metrics. The lead size metrics are based on this fact.

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD_SIZE</td>
<td>Automatic</td>
<td>F_LEAD_STATUS</td>
<td>Lead, Lead Status, Account, Date</td>
</tr>
<tr>
<td>L_LEAD</td>
<td></td>
<td>L_LEAD</td>
<td>Lead, Lead Status, Lead Source, Lead Type</td>
</tr>
</tbody>
</table>

Opportunity Size fact

This fact is designed for metrics that are based on the size of the opportunity. The size of the opportunity is tracked with every change in the opportunity status. It is possible that the final opportunity size (when the opportunity is closed) will be different (higher or lower) than the initial opportunity size (top of the funnel opportunity).
Unlike leads, each opportunity status is tracked separately (a new record is created for each opportunity status change). Therefore, for a given opportunity, each status is tracked separately in the fact table, and the corresponding opportunity size is also tracked separately.

The metrics based on this fact work more like an inventory metric, because you are only interested in the most recent value or the last value. The metrics are of a non-aggregate type.

⚠️ If this fact is removed from the project, all Opportunity Size-based metrics are affected.

**Fact**

**Opportunity Size**

**Comment**

This fact provides the estimated revenue size of an opportunity and is used for estimated revenue metrics.

**Definition**

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTY_SIZE</td>
<td>Automatic</td>
<td>F_OPTY</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F_OPTY_MNTH_HIST</td>
</tr>
</tbody>
</table>
Weighted Opportunity Size fact

This fact is designed for metrics that are based on the size of the opportunity and the opportunity status. The weighted size of the opportunity is tracked with every change in the opportunity status and the opportunity size. Each opportunity status is assigned a weight (a factor between 0.0 and 1.0), and this factor is applied to the opportunity size for each status to calculate the weighted opportunity size.

Unlike leads, each opportunity status is tracked separately (a new record is created for each status change). Therefore, for a given opportunity, each status is tracked separately in the fact table, and the corresponding opportunity size and weighted opportunity are also tracked separately.

The metrics based on this fact work more like an inventory metric, because you are only interested in the most recent value or the last value. The metrics are of a non-aggregate type.

⚠️ The absence of this fact does not impact reporting significantly. The opportunity size can be used for calculating the weighted opportunity size.

Fact

Weighted Opportunity Size

Comment

This fact provides the weighted estimated revenue and is dependent on the opportunity size and the opportunity status.
## Definition

### Order Amount fact

This fact is based on the order amount. The order amount is tracked at the level of the order and a product. An order can have one or more purchased products. There is a record for each product purchased in an order, and an associated order amount.

- **Order amount is not at the level of the order but at the level of the product within the order.**

- **If the order amount fact is not present, all reporting based on order amount is eliminated, including reporting based on total sales and sales representative quota.**

### Fact

**Order Amount**

### Comment

This fact measures revenue generated by each product in an order.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGHTE_OPTY_SIZE</td>
<td>Automatic</td>
<td>F_OPTY</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F_OPTY_MNTH_HIST</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Month</td>
</tr>
</tbody>
</table>
Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER_AMT</td>
<td>Automatic</td>
<td>F_ORDER</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Product, Order, Date.</td>
</tr>
</tbody>
</table>

Sales Representative Quota fact

This fact is based on the target sales associated with a sales representative. This fact, when aggregated at one level higher, provides the target quotas for sales districts, and one level higher again provides the target quotas for sales regions.

The fact information is currently stored at the quarterly level. Therefore, reporting on target sales and actual sales can be done at the level of Quarter or higher. Such reporting cannot be done at a level lower than Quarter, for example, Month.

If this fact is absent, it impacts those reports that return data on target sales vs. actual sales, quota vs. percent achieved, and other sales organization analysis.

Fact

Sales Representative Quota

Comment

This is the quota assigned to each sales representative for a specific time period, by default set to Quarter.

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALES_REP_QTA</td>
<td>Automatic</td>
<td>F_SALES_REP_QTA</td>
<td>Sales Representative, Quarter</td>
</tr>
</tbody>
</table>
Index for Lead Counts fact

This fact is used for all Lead Count metrics. The purpose of this fact is that all the Lead Count metrics are calculated using the LEAD_ID column from the F_LEAD_STATUS table.

⚠️ If this fact is removed, it is not possible to execute the Lead Analysis reports. By default, all the lead metrics go against the fact table F_LEAD_STATUS, but not L_LEAD.

Fact

Index for Lead Counts

Comment

All Lead Count metrics are based on this fact.

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD_ID</td>
<td>Manual</td>
<td>F_LEAD_STATUS</td>
<td>Lead, Lead Status, Account, Date</td>
</tr>
</tbody>
</table>

Index for Opportunity Counts fact

This fact is used for all the Opportunity Count metrics. The purpose of this fact is that all the Opportunity Count metrics are calculated using the OPTY_ID column from the F_OPTY or F_OPTY_MNTH_HIST table.

⚠️ If this fact is removed, it is not possible to execute the Pipeline and Sales Performance reports. By default, all the opportunity metrics go against the fact table F_OPTY and F_OPTY_MNTH_HIST, but not L_OPTY.

Fact

Index for Opportunity Counts
Comment

All Opportunity Count metrics are based on this fact.

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTY_ID</td>
<td>Manual</td>
<td>F_OPTY</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F_OPTY_MNTH_HIST</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Month</td>
</tr>
</tbody>
</table>

Index for Order Counts fact

This fact is used for all the Order Count metrics. The purpose of this fact is that all the Order Count metrics are calculated using the ORDER_ID column from the F_ORDER table.

If this fact is removed, it is not possible to execute the Product Sales Analysis reports. By default, all the order metrics go against the fact table F_ORDER, but not L_ORDER.

Fact

Index for Order Counts

Comment

All Order Count metrics are based on this fact.
### Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER_ID</td>
<td>Manual</td>
<td>F_ORDER</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Product, Order, Date</td>
</tr>
</tbody>
</table>
**PHYSICAL SCHEMA AND DATA DICTIONARY**

**Introduction**

This appendix provides a diagram of the physical schema that comes with the Sales Analysis Module (SAM). This appendix also provides descriptions of all the tables and columns in the default data warehouse.

**Prerequisites**

This appendix was written for consultants and developers implementing and customizing the SAM application and for those building ETL routines to populate the data warehouse. It assumes you are familiar with basic RDBMS concepts and Erwin data modeling.
SAM physical schema

The following diagram represents the physical schema shipped with SAM. The physical schema definition is also available in an Erwin file, which is located in Program Files/MicroStrategy/Analytics Modules/SAM/Sales.ER1.

Fact tables appear in teal (color) or dark gray (black and white). Relate tables appear in light gray.
# Table information

This section describes each physical table used in SAM.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
<th>Analysis Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>L_ACCT</td>
<td>This hierarchy/look-up table contains information about accounts. An account is associated with a Company or an Organization.</td>
<td>Company</td>
</tr>
<tr>
<td>L_COMPANY</td>
<td>This is the hierarchy/look-up table for Company/Organization. There is one record for each company, with information on the company name, industry, and the number of employees.</td>
<td>Company</td>
</tr>
<tr>
<td>Note: A record is inserted for every new company that is targeted as a lead. In addition, if any of the existing characteristics of the company change (like the number of employees), the record is updated.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L_LEAD</td>
<td>This hierarchy/look-up table contains all the Lead information, including the description, the open date, source, type, status, and the size.</td>
<td>Lead</td>
</tr>
<tr>
<td>Note: A record is inserted each time a new lead is generated. The lead status and lead size information are updated every time there is a change of status for the lead.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L_LEAD_SOURCE</td>
<td>This hierarchy/look-up table contains information about the various lead sources. This designates where the lead came from. Some lead sources include campaign, partner, website, trade show, and Internal.</td>
<td>Lead</td>
</tr>
<tr>
<td>L_LEAD_STATUS</td>
<td>This hierarchy/look-up table contains information about the various lead statuses. This shows what the current status of the lead is. This information is dependent on how you track leads. For example, a lead might have such statuses as Open, Rejected, and Closed, or it could be much more complex.</td>
<td>Lead</td>
</tr>
<tr>
<td>L_LEAD_TYPE</td>
<td>This hierarchy/look-up table contains information about the various lead types. This shows whether the lead is from an existing business, a new business, or any other lead type you might want to track.</td>
<td>Lead</td>
</tr>
<tr>
<td>L_OPTY</td>
<td>This hierarchy/look-up table contains information about opportunities, including the opportunity open date, close date, current status, and the primary competitor associated with an opportunity.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>Note: For every opportunity generated, a record is inserted in this table. Each time the status of the opportunity changes, the record is updated. Once the opportunity closes, the opportunity close date is also updated.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L_OPTY_STATUS</td>
<td>This hierarchy/look-up table contains information about the various opportunity statuses. This information is dependent on how you track opportunities. For example, an opportunity can have such statuses as Active or Closed, or it could be much more complex.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>L_COMPETITOR</td>
<td>This hierarchy/look-up table is for competitors. This contains the names of all competitors.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
<td>Analysis Area</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>L_SALES_PROD</td>
<td>This hierarchy/look-up table contains information about Product. By default, there are two levels of information: Product and Product Group.</td>
<td>Product</td>
</tr>
<tr>
<td>R_OPTY_PROD</td>
<td>This relate table contains information about the product associated with an opportunity. This has a record for each product associated with the opportunity. This table can be enhanced to capture more information if necessary. Note: For every opportunity generated, corresponding records are present in this table. This contains the list of products the opportunity is associated with. During a sales cycle, if products associated with an opportunity change, all corresponding records are updated.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>L_SALES_REP</td>
<td>This hierarchy/look-up table contains information about the Sales Organization. Currently, three levels of information are stored in Sales Organization: Sales Representative, Sales District, and Sales Region. By default, information is based on the following structure: • Sales Region - can have one or more Sales Districts • Sales District - can have one or more Sales Representatives</td>
<td>Sales Organization</td>
</tr>
<tr>
<td>L_ORDER</td>
<td>This hierarchy/look-up table contains information about orders. By default, it stores the discount indicator information. This shows whether the order had a discount associated with it or not. Note: For every closed opportunity, there will be an Order.</td>
<td>Order</td>
</tr>
<tr>
<td>L_CAL_DATE</td>
<td>This is the hierarchy/look-up table for Time at the Date Level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_MNTH</td>
<td>This is the hierarchy/look-up table for Time at the Month Level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_QTR</td>
<td>This is the hierarchy/look-up table for Time at the Quarterly level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_YEAR</td>
<td>This is the hierarchy/look-up table for Time at the Year Level.</td>
<td>Time</td>
</tr>
<tr>
<td>F_LEAD_STATUS</td>
<td>This fact table contains the lead and its status information, including Lead and Account ID, with Lead Status, Size, and Open Date. For every lead generated, a record is inserted in this table. Note: All information except LEAD_STATUS and LEAD_SIZE remain the same for the lead. The lead status and lead size are updated every time there is a change of status for the lead. No historical information is tracked in this table except the most recent lead status.</td>
<td>Lead</td>
</tr>
<tr>
<td>F_OPTY</td>
<td>This is the fact table containing all the Opportunity information. It has information on the product, the account, sales person, lead, date, and the size (absolute and weighted) associated with the opportunity. This information is stored for each status of the opportunity and tracked with the status open date. Note: Each time the opportunity status changes, a record is inserted in this table with the new status and date. The opportunity size and weighted opportunity size can also change during this status change.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
<td>Analysis Area</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>F_OPTY_MNTH_HIST</td>
<td>This is the fact table containing all the Opportunity information. It has information on the product, the account, sales person, lead, and the size associated with the opportunity. This information is stored for each opportunity for each month until the opportunity is either Closed or Lost. The status stored is that at the end of a month. If an opportunity changes status more than once, only the most recent one is taken into account. <strong>Note</strong>: There is a record for every opportunity for every month as long as the opportunity is not closed. For example, if an opportunity was opened in Jan 2001 and closed in April 2001, there will be a record for this opportunity for Jan, Feb, March, and April 2001.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>F_ORDER</td>
<td>This is the fact table containing all the Order information. The information is tracked at the level of each product associated with the order. It also has information on the lead, opportunity, sales person, account, and the date and amount associated with the order. <strong>Note</strong>: There is one record for each product in the order, and the order amount corresponds to the total amount for each product and not the Total Order.</td>
<td>Order</td>
</tr>
<tr>
<td>F_SALES_REP_QTA</td>
<td>This is the fact table containing all the Sales Representative Quota information. Each sales person has target sales to be achieved for each quarter. This table tracks the information for sales person quotas at the quarterly level. <strong>Note</strong>: There is a record for each sales person for each quarter. A new record is inserted when the next quarter begins.</td>
<td>Sales Organization</td>
</tr>
<tr>
<td>L_QUARTER_YTD</td>
<td>This table relates a given quarter to all the quarters within the same year, up to the given quarter.</td>
<td>Time</td>
</tr>
<tr>
<td>L_MONTH_YTD</td>
<td>This table relates a given month to all the months within the same year, up to the given month.</td>
<td>Time</td>
</tr>
</tbody>
</table>
# Table column information

This section describes each physical table column used in SAM.

The Data Type column information in the following table reflects an Oracle database-specific format; depending on what database type you use, your data type may appear differently. You can use the Erwin file (see the SAM physical schema section above) to easily convert this information to another database type.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table: L_ACCT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the account. An account is associated with a company.</td>
<td>This table includes all existing accounts.</td>
</tr>
<tr>
<td>COMPANY_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the company (B2B customer). A company has one or more accounts associated with it.</td>
<td>This field references the COMPANY_ID in L_COMPANY.</td>
</tr>
<tr>
<td>ACCT_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description for the account.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: L_COMPANY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMPANY_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the company (B2B customer). A company has one or more accounts associated with it.</td>
<td>This should have the IDs of all the companies that are present in the system.</td>
</tr>
<tr>
<td>COMPANY_NAME</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>The name of the company/organization.</td>
<td></td>
</tr>
<tr>
<td>INDUS_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>Unique identifier for the industry. This is classified based on the way you operate your business.</td>
<td>A unique ID has to be assigned to any new industry.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
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<td>-------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>INDUS_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description for the industry.</td>
<td></td>
</tr>
<tr>
<td>NO_OF_EMP</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The number of employees present in the company. This can be an absolute number or a range.</td>
<td>By default, this field is not populated and no analysis is based on it.</td>
</tr>
<tr>
<td><strong>Table: L_LEAD</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEAD_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the lead.</td>
<td>Running sequence or system-generated number. This must have all the leads in the system.</td>
</tr>
<tr>
<td>LEAD_SRCE_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>This uniquely identifies the source of the lead.</td>
<td>This references LEAD_SRCE_ID in L_LEAD_SOURCE.</td>
</tr>
<tr>
<td>LEAD_STAT_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>This uniquely identifies the status of the lead.</td>
<td>This references LEAD_STAT_ID in L_LEAD_STATUS.</td>
</tr>
<tr>
<td>LEAD_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>This uniquely identifies the different lead types.</td>
<td>This references LEAD_TYPE_ID in L_LEAD_TYPE.</td>
</tr>
<tr>
<td>LEAD_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the lead.</td>
<td></td>
</tr>
<tr>
<td>LEAD_OPEN_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The date when the lead was opened.</td>
<td></td>
</tr>
<tr>
<td>LEAD_SIZE</td>
<td>Numeric (15,3)</td>
<td>NULL</td>
<td>No/No</td>
<td>The estimated size of the lead, based on input from the lead, such as available budget or based on additional information entered by the sales representative.</td>
<td></td>
</tr>
<tr>
<td><strong>Column Name</strong></td>
<td><strong>Data Type</strong></td>
<td><strong>Nulls</strong></td>
<td><strong>Primary Key/FK?</strong></td>
<td><strong>Column Comment</strong></td>
<td><strong>Remarks</strong></td>
</tr>
<tr>
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<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Table: L_LEAD_SOURCE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEAD_SRCE_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>This uniquely identifies the source of the lead. By default, the following are used: 1 - Campaign 2 - Partner 3 - Trade Show 4 - Website 5 - Internal This value set can be customized.</td>
<td>IDS of all possible lead sources that the system has and those that the organization might want to capture.</td>
</tr>
<tr>
<td>LEAD_SRCE_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the lead source.</td>
<td></td>
</tr>
<tr>
<td>Table: L_LEAD_STATUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEAD_STAT_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>This uniquely identifies the status of the lead. By default, the following are used: 1 - No Response 2 - Qualified 3 - Rejected 4 - Closed This value set can be customized.</td>
<td>IDS of all the lead statuses that are captured by the system.</td>
</tr>
<tr>
<td>LEAD_STAT_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the lead status.</td>
<td></td>
</tr>
<tr>
<td>Table: L_LEAD_TYPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEAD_TYPE_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>This uniquely identifies the different lead types. By default, the following are used: 1 - New Business 2 - Existing Business</td>
<td>IDS of the different types of leads that are captured in the system.</td>
</tr>
<tr>
<td>LEAD_TYPE_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the lead type.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
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<td>-------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>OPTY_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the opportunity. A qualified lead becomes an opportunity and is assigned to a sales representative.</td>
<td>This table includes all existing opportunities.</td>
</tr>
<tr>
<td>CURR_OPTY_STAT_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier of the current opportunity status. This should reflect the current status for the opportunity.</td>
<td>This references OPTY_STAT_ID in L_OPTY_STATUS (through a table alias).</td>
</tr>
<tr>
<td>PRIMARY_COMP_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier of the primary competitor for the opportunity. For each opportunity, only the primary competitor is tracked. If there are no competitors, the default is 0 - No Competitor.</td>
<td>This references COMPETITOR_ID in L_COMPETITOR.</td>
</tr>
<tr>
<td>OPTY_CLOSE_DATE</td>
<td>TimeStamp</td>
<td>NULL</td>
<td>No/No</td>
<td>The date when the opportunity was closed. This is the same as the order date.</td>
<td></td>
</tr>
<tr>
<td>OPTY_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the opportunity.</td>
<td></td>
</tr>
<tr>
<td>OPTY_OPEN_DATE</td>
<td>TimeStamp</td>
<td>NULL</td>
<td>No/No</td>
<td>The date when the opportunity was opened.</td>
<td></td>
</tr>
<tr>
<td>OPTY_COMM</td>
<td>VarChar</td>
<td>NOT NULL</td>
<td>No/No</td>
<td>Comments associated with the opportunity.</td>
<td></td>
</tr>
<tr>
<td>OPTY_EST_CL_DATE</td>
<td>TimeStamp</td>
<td>NOT NULL</td>
<td>No/No</td>
<td>The estimated date for when the opportunity will be closed.</td>
<td>This value should be the same as OPTY_CLOSE_DATE, once the opportunity has a status of Closed or Lost.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
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<td>--------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>OPTY_STAT_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier of the opportunity status. By default, the following are used: 1 - Top of the Funnel 2 - In the Funnel 3 - Commit 4 - Lost 5 - Closed</td>
<td>Referenced by Opportunity Status and Current Opportunity Status.</td>
</tr>
<tr>
<td>OPTY_STAT_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the opportunity status.</td>
<td></td>
</tr>
<tr>
<td>OPTY_PROB</td>
<td>VarChar</td>
<td>NOT NULL</td>
<td>No/No</td>
<td>Unique identifier of the close probability assigned to the opportunity status; also the textual description of the close probability (for example, 50%).</td>
<td></td>
</tr>
</tbody>
</table>

**Table: L_COMPETITOR**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPETITOR_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the various competitors.</td>
<td>This contains the list of all competitors.</td>
</tr>
<tr>
<td>COMPETITOR_NAME</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>The name of the competitor.</td>
<td></td>
</tr>
</tbody>
</table>

**Table: L_SALES_PROD**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROD_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the product. This is the lowest level of the attribute in the Product hierarchy.</td>
<td>ID of all the products that are sold by the organization.</td>
</tr>
<tr>
<td>PROD_GRP_ID</td>
<td>Numeric</td>
<td>NULL</td>
<td>No/No</td>
<td>The unique identifier for the product group. This is the highest level of the attribute in the Product hierarchy.</td>
<td>Can be changed depending on the customer’s Product hierarchy.</td>
</tr>
<tr>
<td>PROD_NAME</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>The name of the sales product.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
<td>---------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PROD_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Long description of the product for storing additional information on the product.</td>
<td>By default, this field is not populated and no analysis is based on it.</td>
</tr>
<tr>
<td>PROD_GRP_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the product group.</td>
<td></td>
</tr>
</tbody>
</table>

**Table: R_OPTY_PROD**

<table>
<thead>
<tr>
<th>OPTY_ID</th>
<th>Double</th>
<th>NOT NULL</th>
<th>Yes/Yes</th>
<th>Unique identifier for the opportunity. All opportunities should have one or more entries in this table.</th>
<th>This references OPTY_ID in L_OPTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROD_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the product.</td>
<td>This references PROD_ID in L_SALES_PROD.</td>
</tr>
</tbody>
</table>

**Table: L_SALES_REP**

<table>
<thead>
<tr>
<th>SALES_REP_ID</th>
<th>Double</th>
<th>NOT NULL</th>
<th>Yes/No</th>
<th>Unique identifier for the sales representative or account executive. Each sales representative is tied to a sales district, which is tied to a sales region.</th>
<th>Currently this is the lowest level of a three-level hierarchy. This can be changed based on your sales structure.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALES_DIST_ID</td>
<td>Numeric</td>
<td>NULL</td>
<td>No/No</td>
<td>Unique identifier for the sales district. This is the middle level in the sales organization hierarchy.</td>
<td>This can be changed based on your sales force structure.</td>
</tr>
<tr>
<td>SALES_REGN_ID</td>
<td>Numeric</td>
<td>NULL</td>
<td>No/No</td>
<td>Unique identifier for the sales region. This is the highest level in the sales organization hierarchy.</td>
<td>This can be changed based on your sales force structure.</td>
</tr>
<tr>
<td>SALES_DIST_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description for the sales district.</td>
<td></td>
</tr>
<tr>
<td>SALES_REGN_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description for the sales region.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>---------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>SALES_REP_NAME</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>The name of the sales representative. The name is currently stored as a single name (First Name + Last Name) and not separately.</td>
<td></td>
</tr>
<tr>
<td>ORDER_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for each order placed. A closed opportunity results in an order.</td>
<td>Unique for each order.</td>
</tr>
<tr>
<td>DISCOUNT_IND</td>
<td>VarChar (1)</td>
<td>NULL</td>
<td>No/No</td>
<td>Indicates whether a discount was associated with the order. The field is currently populated with: Y - Discount N - No discounts</td>
<td>By default, not used.</td>
</tr>
<tr>
<td>ORDER_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The date of the order. This is the same as the opportunity close date and should be the same date as in F_ORDER.</td>
<td>This references DATE_ID in L_CAL_DATE.</td>
</tr>
</tbody>
</table>

**Table: L_CAL_DATE**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE_ID</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Tracks all the dates in the system. All valid calendar dates for reporting purposes must be here.</td>
<td>Calendar date.</td>
</tr>
<tr>
<td>MNTH_ID</td>
<td>Integer (4)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the month; current format is YYYYMM and it is stored as an integer.</td>
<td>This references MNTH_ID in L_CAL_MNTH.</td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the quarter; current format is YYYYQ and it is stored as an integer.</td>
<td>This references QTR_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the year; current format is YYYY and it is stored as an integer.</td>
<td>This references YEAR_ID in L_CAL_YEAR.</td>
</tr>
<tr>
<td>MNTH_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the month; current format is YYYYMM and it is stored as an integer.</td>
<td>Calendar month in a specified format.</td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the quarter; current format is YYYYQ and it is stored as an integer.</td>
<td>This references QTR_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the year; current format is YYYY and it is stored as an integer.</td>
<td>This references YEAR_ID in L_CAL_YEAR.</td>
</tr>
<tr>
<td>MNTH_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the month.</td>
<td></td>
</tr>
<tr>
<td>PREV_MNTH_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The ID of the previous month. For example, for December 2001 it is November 2001. This is stored in the same format as the MNTH_ID (YYYYMM).</td>
<td>This references MNTH_ID in L_CAL_MNTH. This should be one month earlier than the corresponding MNTH_ID in that row.</td>
</tr>
</tbody>
</table>

**Table: L_CAL_QTR**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the quarter; current format is YYYYQ and it is stored as an integer.</td>
<td>Calendar quarter in a specified format.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the year; current format is YYYY and it is stored as an integer.</td>
<td>This references YEAR_ID in L_CAL_YEAR.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PREV_QTR_ID</td>
<td>Numeric</td>
<td>NULL</td>
<td>No/No</td>
<td>The ID of the previous quarter. For example, for Q4 2001 it is Q3 2001. This is stored in the same format as the QTR_ID (YYYYQ).</td>
<td>This references QTR_ID in L_CAL_QTR. This should be one quarter earlier than the corresponding QTR_ID in that row.</td>
</tr>
<tr>
<td>QTR_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the quarter.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: L_CAL_YEAR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the year. The current format is YYYY and is stored as an integer.</td>
<td>Calendar year.</td>
</tr>
<tr>
<td>PREV_YEAR_ID</td>
<td>Numeric</td>
<td>NULL</td>
<td>No/No</td>
<td>The ID of the previous year. For example, for 2002 it is 2001. This is stored in the same format as the YEAR_ID (YYYY).</td>
<td>This references YEAR_ID in L_CAL_YEAR. This should be one year earlier than the corresponding YEAR_ID in that row.</td>
</tr>
<tr>
<td><strong>Table: F_LEAD_STATUS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the account. An account is associated with a company.</td>
<td>This references ACCT_ID in L_ACCT.</td>
</tr>
<tr>
<td>LEAD_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the lead.</td>
<td>This references LEAD_ID in L_LEAD.</td>
</tr>
<tr>
<td>LEAD_STAT_ID</td>
<td>Numeric</td>
<td>NULL</td>
<td>No/Yes</td>
<td>This uniquely identifies the status of the lead.</td>
<td>This references LEAD_STAT_ID in L_LEAD_STATUS.</td>
</tr>
<tr>
<td>LEAD_OPEN_DATE</td>
<td>TimeStamp</td>
<td>NULL</td>
<td>No/No</td>
<td>The date when the lead was opened.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/ Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------</td>
<td>----------------</td>
<td>---------------------------</td>
<td>Adam</td>
<td>The estimated size of the lead, based on inputs from the lead, such as available budget, or based on additional information entered by the sales representative. This can be updated with the change in lead status or maintained the same at all stages.</td>
</tr>
<tr>
<td>OPTY_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Adam</td>
<td>Unique identifier for the opportunity. A qualified lead becomes an opportunity and is assigned to a sales representative. This references OPTY_ID in L_OPTY.</td>
</tr>
<tr>
<td>STAT_OPEN_DATE</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Adam</td>
<td>The date from which the status is effective. For each change in the opportunity status, an entry for the opportunity is made into F_OPTY with that date as the status open date. This references DATE_ID in L_CAL_DATE.</td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Adam</td>
<td>Unique identifier for the account. An account is associated with a company. This references the ACCT_ID in L_ACCT.</td>
</tr>
<tr>
<td>LEAD_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Adam</td>
<td>Unique identifier for the lead. This references the LEAD_ID in L_LEAD.</td>
</tr>
<tr>
<td>OPTY_STAT_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Adam</td>
<td>Unique identifier of the opportunity status. This references OPTY_STAT_ID in L_OPTY_STATUS.</td>
</tr>
<tr>
<td>SALES_REP_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Adam</td>
<td>Unique identifier for the sales representative or account executive. Each sales representative is tied to a sales district, which is tied to a sales region. This references SALES_REP_ID in L_SALES_REP.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>OPTY_SIZE</td>
<td>Double</td>
<td>NULL</td>
<td>No/No</td>
<td>The size or estimated revenue for the opportunity. This can change as the opportunity status changes. For example, the size can be 200,000 at &quot;Top of the Funnel;&quot; when it moves &quot;In the Funnel&quot; it can be 250,000; and so on.</td>
<td>This can change for each status.</td>
</tr>
<tr>
<td>WGHT_OPTY_SIZE</td>
<td>Double</td>
<td>NULL</td>
<td>No/No</td>
<td>The Weighted Opportunity Size or the weighted estimated revenue, based on the Opportunity Size and the Opportunity Status. This field is precalculated and it is expected to be populated using ETL.</td>
<td>Currently the factor used for calculating this is:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Top of the Funnel: 0.1 * Opp Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>In the Funnel: 0.2 * Opp Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Commit: 0.8 * Opp. Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Closed: 1.0 * Opp. Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lost: 0.0 * Opp. Size</td>
</tr>
<tr>
<td>Table: F_OPTY_MNTH_HIST</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNTH_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>The unique identifier for the month. This is a Time hierarchy table. The current format is YYYYMM and is stored as an integer.</td>
<td>This references MNTH_ID in L_CAL_MNTH. For a given opportunity that is still open at the end of the month, there should be an entry for it for that month.</td>
</tr>
<tr>
<td>OPTY_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the opportunity. A qualified lead becomes an opportunity and is assigned to a sales representative.</td>
<td>This references OPTY_ID in L_OPTY.</td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer (4)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the account. An account is associated with a company.</td>
<td>This references ACCT_ID in L_ACCT.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LEAD_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the lead.</td>
<td>This references LEAD_ID in L_LEAD.</td>
</tr>
<tr>
<td>OPTY_STAT_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier of the opportunity status.</td>
<td>This references OPTY_STAT_ID in L_OPTY_STATUS. For the given opportunity and month, it will only store the most recent status.</td>
</tr>
<tr>
<td>SALES_REP_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the sales representative or account executive. Each sales representative is tied to a sales district, which is tied to a sales region.</td>
<td>This references SALES_REP_ID in L_SALES_REP. Should be the same as in F_OPTY.</td>
</tr>
<tr>
<td>OPTY_SIZE</td>
<td>Double</td>
<td>NULL</td>
<td>No/No</td>
<td>The size or estimated revenue for the opportunity. This can change as the opportunity status changes. For example, the size can be 200,000 when it is at &quot;Top of the Funnel&quot;; when it changes to &quot;In the Funnel&quot; it can be 250,000; and so on.</td>
<td>Should be the same as in F_OPTY for the given month and status.</td>
</tr>
</tbody>
</table>
| WGH_T_OPTY_SIZE  | Double    | NULL           | No/No                    | The Weighted Opportunity Size or the weighted estimated revenue, based on the Opportunity Size and the Opportunity Status. This field is pre-calculated and is expected to be populated using ETL. | Currently the factor used for calculating this is:  
  • Top of the Funnel: 0.1 * Opp Size  
  • In the Funnel: 0.2 * Opp Size  
  • Commit: 0.8 * Opp. Size  
  • Closed: 1.0 * Opp. Size  
  • Lost: 0.0 * Opp. Size                                                                                                                                                                         |
<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for each order placed. A closed opportunity results in an order.</td>
<td>This references ORDER_ID in L_ORDER.</td>
</tr>
<tr>
<td>PROD_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the sales product. This is the lowest level of the attribute in the Product hierarchy.</td>
<td>This references PROD_ID in L SALES_PROD.</td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the account. An account is associated with a company.</td>
<td>This references ACCT_ID in L ACCT.</td>
</tr>
<tr>
<td>LEAD_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the lead.</td>
<td>This references LEAD_ID in L LEAD.</td>
</tr>
<tr>
<td>OPTY_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the opportunity. A qualified lead becomes an opportunity and is assigned to a sales representative.</td>
<td>This references OPTY_ID in L OPTY.</td>
</tr>
<tr>
<td>ORDER_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>The date of the order. This is the same as the opportunity close date.</td>
<td>This references DATE_ID in L CAL_DATE. This should be the same date as in L ORDER.</td>
</tr>
<tr>
<td>SALES_REP_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the sales representative or account executive. Each sales representative is tied to a sales district that is tied to a sales region.</td>
<td>This references SALES_REP_ID in L SALES REP. This should be the same as in F OPTY.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ORDER_AMT</td>
<td>Numeric (15,3)</td>
<td>NULL</td>
<td>No/No</td>
<td>The amount associated with each product that was part of the order. This information is tracked at the PRODUCT level, not at the ORDER level. An order can have one or more products associated with it.</td>
<td>This is the amount for the particular product purchased as part of the order.</td>
</tr>
<tr>
<td>ORDER_UNITS</td>
<td>Numeric (15,3)</td>
<td>NULL</td>
<td>No/No</td>
<td>The number of units sold for each product in the order.</td>
<td>By default, this field is not populated and no analysis is based on it.</td>
</tr>
</tbody>
</table>

**Table: F_SALES_REP_QTA**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the quarter. This is a Time hierarchy table. The current format is YYYYQ.</td>
<td>This references QTR_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>SALES_REP_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the sales representative or account executive. Each sales representative is tied to a sales district, which is tied to a sales region.</td>
<td>This references SALES_REP_ID in L_SALES_REP.</td>
</tr>
<tr>
<td>SALES_REP_QTA</td>
<td>Numeric (15,3)</td>
<td>NULL</td>
<td>No/No</td>
<td>The target or quota that is assigned to a sales representative. This quota is assigned at a quarterly level.</td>
<td></td>
</tr>
</tbody>
</table>

**Table: L_MONTH_YTD**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNTH_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the month; the current format is YYYYMM and is stored as an integer.</td>
<td>This references MNTH_ID in L_CAL_MONTH.</td>
</tr>
<tr>
<td>YTD_MNTH_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the month; the current format is YYYYMM and is stored as an integer.</td>
<td>For a given MNTH_ID, this field includes all months of the year up to the given month.</td>
</tr>
</tbody>
</table>
### Table: L_QUARTER_YTD

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the quarter; the current format is YYYYQ and is stored as an integer.</td>
<td>This references QTR_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>YTD_QTR_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the quarter; the current format is YYYYQ and is stored as an integer.</td>
<td>For a given QTR_ID, this field includes all the quarters of the year up to the given quarter.</td>
</tr>
</tbody>
</table>
For the purpose of the MicroStrategy Tutorial, the areas of analysis discussed earlier, Financial, Product Sales, Human Resources, and so on, are organized into the following hierarchical groupings:

- geography
- products
- customers
- time
- promotions

These MicroStrategy Tutorial hierarchies are displayed on the following pages for your reference.

### Data modeling notations

The following notations are used in the graphical depictions of the following hierarchies:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Indicates</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="entry_point.png" alt="entry point" /></td>
<td>entry point</td>
<td>An entry point is a shortcut to an attribute element in the Data Explorer. Creating an entry point grants you faster access to the attribute without having to browse through multiple attributes to reach different levels of the hierarchy.</td>
</tr>
<tr>
<td><img src="attribute.png" alt="attribute" /></td>
<td>attribute</td>
<td>A data level defined by the system architect and associated with one or more columns in the data warehouse lookup table. Attributes include data classifications like Region, Order, Customer, Age, Item, City, and Year. They provide a handle for aggregating and filtering at a given level.</td>
</tr>
<tr>
<td><img src="one-to-many.png" alt="one-to-many relationship" /></td>
<td>one-to-many relationship</td>
<td>An attribute relationship in which every element of a parent attribute relates to multiple elements of a child attribute, while every element of the child attribute relates to only one element of the parent. The one-to-many attribute relationship is the most common in data models.</td>
</tr>
</tbody>
</table>
Logical Data Model

Introduction

This appendix presents the logical data model on which the Customer Analysis Module (CAM) is built.

This appendix provides a description for

• business hierarchies, including attributes and relationships, and their metadata objects definitions

• module facts

• module transformations

See Chapter 1, Introduction, for a general description, basic procedures, and additional details about understanding and working with CAM’s logical data model.

Information can also be found by accessing each attribute’s definition using the Attribute Editor. The attributes can be found in the Schema Objects/Attributes folder. Double-click an attribute to open the Attribute Editor.
Prerequisites

This appendix assumes you have prior experience with logical data modeling and creating business intelligence applications using MicroStrategy technology.

CAM logical schema

The following diagram represents the logical model shipped with CAM. The logical schema diagram is available in an Erwin file, located in Program Files/MicroStrategy/Analytics Modules/CAM/CA.erl.
Fact tables appear in teal (color) or gray (black and white).
CAM assists analysts, managers, and executives to obtain insight into the various factors that drive customer profitability for a business. CAM accomplishes this partly through a set of attributes (business concepts) and their relationships to each other. These attributes are arranged in a specific sequence according to a business structure, and that arrangement is called a hierarchy.

The key business hierarchies in the customer analysis process are

- Customer: Entities that buy products and services from the company
- Product: The products or services offered by the company
- Transaction: The unique numeric identifier for each transaction type posted
- Time: The calendar time

Each business hierarchy in the previous list is detailed in this section. For additional information on the hierarchies, see the MicroStrategy project definitions in CAM’s Schema Objects/Attributes and Schema Objects/Facts folders. From one of these folders, double-click an attribute or fact to view definitions, properties, source tables, and so on.

### Customer hierarchy

This hierarchy represents individuals that have or had a relationship with the company.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Customer ID</td>
<td>John Brown, Nat Turner</td>
</tr>
<tr>
<td>Customer Acquisition Date</td>
<td>Date when the customer was acquired</td>
<td>10-JAN-2001</td>
</tr>
<tr>
<td>Customer Lost Date</td>
<td>Date when the customer was lost</td>
<td>12-DEC-2002</td>
</tr>
<tr>
<td>Attribute</td>
<td>Description</td>
<td>Example</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Current Customer Status</td>
<td>Customer’s status, as of the last warehouse load date</td>
<td>Active, Lost</td>
</tr>
<tr>
<td>Current Customer Tenure (months)</td>
<td>Tenure of the customer in months, as of the last warehouse load date</td>
<td>1, 2, 10, 20</td>
</tr>
<tr>
<td>Customer Status</td>
<td>Historical customer status information</td>
<td>Active, Lost</td>
</tr>
<tr>
<td>Customer Tenure (months)</td>
<td>Historical customer tenure information</td>
<td>1, 2, 10, 20</td>
</tr>
<tr>
<td>Customer Age Range</td>
<td>Customer’s age range, as of the last warehouse load date</td>
<td>Below 20, 21-40, 41-60</td>
</tr>
<tr>
<td>Customer Gender</td>
<td>Customer’s gender</td>
<td>Male, Female</td>
</tr>
<tr>
<td>Customer Income Range</td>
<td>Customer’s income range, as of the last warehouse load date</td>
<td>20001-40000, 40001-60000</td>
</tr>
<tr>
<td>Customer City</td>
<td>Customer’s city of residence, as of the last warehouse load date</td>
<td>Chicago, New Orleans</td>
</tr>
<tr>
<td>Customer State</td>
<td>Customer’s state of residence, as of the last warehouse load date</td>
<td>Maryland, California</td>
</tr>
<tr>
<td>Customer Region</td>
<td>Customer’s region of residence, as of the last warehouse load date</td>
<td>East, West</td>
</tr>
<tr>
<td>Customer Education</td>
<td>Education level of the customer, as of the last warehouse load date</td>
<td>Undergraduate, Graduate</td>
</tr>
<tr>
<td>Customer Household Count</td>
<td>Number of people in the household of the customer, as of the last warehouse load date</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Customer Housing Type</td>
<td>Type of housing of the customer, as of the last warehouse load date</td>
<td>Rented, Home Owner</td>
</tr>
<tr>
<td>Customer Marital Status</td>
<td>Marital status of the customer, as of the last warehouse load date</td>
<td>Single (never married), Divorced, Married</td>
</tr>
<tr>
<td>Customer Lifetime Value Score</td>
<td>Lifetime value score of the customer, as of the last warehouse load date</td>
<td>Medium, High, Low</td>
</tr>
</tbody>
</table>

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.
### Customer

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUSTOMER_ID</td>
<td>L_CUSTOMER</td>
<td>F_CUST_STATUS_HIST \ F_CUST_TXN_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>CUSTOMER_NAME</td>
<td>L_CUSTOMER</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Current Customer Status</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Age Range</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer City</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Education</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Gender</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Household Count</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Housing Type</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Income Range</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Lifetime Value Score</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Marital Status</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

### Customer Acquisition Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ACQUISITION_DATE</td>
<td>L_CUSTOMER</td>
<td>None</td>
</tr>
</tbody>
</table>
Customer Lost Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LOST_DATE</td>
<td>L_CUSTOMER</td>
<td>None</td>
</tr>
</tbody>
</table>

Current Customer Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_STATUS_ID</td>
<td>L_CURR_CUST_STATUS</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_STATUS_DESC</td>
<td>L_CURR_CUST_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

Note the following:

When porting, be aware that multiple form expressions are used.

L_CURR_CUST_STATUS is a logical table defined as a table alias of L_CUST_STATUS. This feature allows two attributes to be based on the same physical table although each of them is a different concept. Values for Customer Status and Current Customer Status are the same.

Current Customer Tenure (months)

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CURR_TENURE</td>
<td>L_CUSTOMER</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>
### Customer Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_STATUS_ID</td>
<td>L_CUST_STATUS</td>
<td>F_CUST_STATUS_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_STATUS_DESC</td>
<td>L_CUST_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

### Customer Tenure (months)

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>TENURE</td>
<td>F_CUST_STATUS_HIST</td>
<td>None</td>
</tr>
</tbody>
</table>

### Customer Age Range

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_AGE_RNG_ID</td>
<td>L_CUST_AGE_RNG</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_AGE_RNG_DESC</td>
<td>L_CUST_AGE_RNG</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Children | Parents | Relationship Type | Table
--- | --- | --- | ---
Customer | None | One-to-many | L_CUSTOMER

### Customer Gender

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_GENDER_ID</td>
<td>L_CUST_GENDER</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_GENDER_DESC</td>
<td>L_CUST_GENDER</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Children | Parents | Relationship Type | Table
--- | --- | --- | ---
Customer | None | One-to-many | L_CUSTOMER
### Customer Income Range

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_INC_RNG_ID</td>
<td>L_CUST_INC_RNG</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_INC_RNG_DESC</td>
<td>L_CUST_INC_RNG</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

### Customer City

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_CITY_ID</td>
<td>L_CUST_CITY</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_CITY_DESC</td>
<td>L_CUST_CITY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer State</td>
<td>One-to-many</td>
<td>L_CUST_CITY</td>
</tr>
</tbody>
</table>

### Customer State

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_STATE_ID</td>
<td>L_CUST_CITY</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_STATE_DESC</td>
<td>L_CUST_CITY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUST_CITY</td>
</tr>
<tr>
<td>None</td>
<td>Customer Region</td>
<td>One-to-many</td>
<td>L_CUST_CITY</td>
</tr>
</tbody>
</table>
# Customer Region

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_REGION_ID</td>
<td>L_CUST_CITY</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_REGION_DESC</td>
<td>L_CUST_CITY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUST_CITY</td>
</tr>
</tbody>
</table>

# Customer Education

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_EDUCATION_ID</td>
<td>L_CUST_EDUCATION</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_EDUCATION_DESC</td>
<td>L_CUST_EDUCATION</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

# Customer Household Count

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_HH_COUNT_ID</td>
<td>L_CUST_HH_COUNT</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_HH_COUNT_DESC</td>
<td>L_CUST_HH_COUNT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>
### Customer Housing Type

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_HOUSING_ID</td>
<td>L_CUST_HOUSING</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_HOUSING_DESC</td>
<td>L_CUST_HOUSING</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

### Customer Marital Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_MARITAL_STS_ID</td>
<td>L_CUST_MARITAL_STS</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_MARITAL_STS_DESC</td>
<td>L_CUST_MARITAL_STS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

### Customer Lifetime Value Score

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_LV_SCORE_ID</td>
<td>L_CUST_LV_SCORE</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_LV_SCORE_DESC</td>
<td>L_CUST_LV_SCORE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>
Product hierarchy

This hierarchy represents the products or services offered by the company.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Group</td>
<td>Classification of products.</td>
<td>Food &amp; Beverages, Cosmetics</td>
</tr>
<tr>
<td>Product</td>
<td>Product</td>
<td>Coffee, Tea</td>
</tr>
<tr>
<td>Affinity Product</td>
<td>Dummy attribute for product used for affinity analysis. (Affinity products are products closely related to each other or often purchased together).</td>
<td>Coffee, Tea</td>
</tr>
</tbody>
</table>

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Product Group

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PRODUCT_GRP_ID</td>
<td>L_PRODUCT</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>PRODUCT_GRP_DESC</td>
<td>L_PRODUCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>None</td>
<td>One-to-many</td>
<td>L_PRODUCT</td>
</tr>
</tbody>
</table>

### Product

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PRODUCT_ID</td>
<td>L_PRODUCT</td>
<td>F_CUST_TXN_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>PRODUCT_DESC</td>
<td>L_PRODUCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Product Group</td>
<td>Many-to-one</td>
<td>L_PRODUCT</td>
</tr>
</tbody>
</table>
Affinity Product

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PRODUCT_ID</td>
<td>L_PRODUCT</td>
<td>F_CUST_TXN_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>PRODUCT_DESC</td>
<td>L_PRODUCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Product Group</td>
<td>One-to-many</td>
<td>L_PRODUCT</td>
</tr>
</tbody>
</table>

Transaction hierarchy

This hierarchy represents the unique numeric identifier for each transaction type posted.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction</td>
<td>A unique transaction identifier that indicates a transaction occurred</td>
<td>12000</td>
</tr>
</tbody>
</table>

The detailed definitions of the attribute in the MicroStrategy metadata repository listed previously are shown in the following table.

Transaction

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>TXN_ID</td>
<td>L_TRANSACTION</td>
<td>F_CUST_TXN_HIST</td>
</tr>
</tbody>
</table>
**Time hierarchy**

This hierarchy represents the calendar time.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Calendar year.</td>
<td>2003</td>
</tr>
<tr>
<td>Quarter</td>
<td>Calendar quarter. This also includes attributes in the other fact tables that are associated with time period as quarter.</td>
<td>Q3-2003</td>
</tr>
<tr>
<td>Month</td>
<td>Calendar month. This also includes attributes in the other fact tables that are associated with time period as month.</td>
<td>Nov, 2003</td>
</tr>
<tr>
<td>Date</td>
<td>Calendar date. This also includes attributes in the other fact tables that are associated with time period as date.</td>
<td>12/24/2003</td>
</tr>
</tbody>
</table>

The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.

**Date**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DATE_ID</td>
<td>L_CAL_DATE</td>
<td>F_CUST_TXN_HIST</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Month</td>
<td>One-to-many</td>
<td>L_CAL_DATE</td>
</tr>
</tbody>
</table>

**Month**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>MNTH_ID</td>
<td>L_CAL_MNTH</td>
<td>F_CUST_STATUS_HIST L_CAL_DATE</td>
</tr>
<tr>
<td>DESC</td>
<td>MNTH_DESC</td>
<td>L_CAL_MNTH</td>
<td>None</td>
</tr>
<tr>
<td>Children</td>
<td>Parents</td>
<td>Relationship Type</td>
<td>Table</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>-------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Quarter</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_MNTH</td>
</tr>
<tr>
<td>None</td>
<td>Quarter</td>
<td>One-to-many</td>
<td>L_CAL_MNTH</td>
</tr>
</tbody>
</table>

**Quarter**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>QTR_ID</td>
<td>L_CAL_QTR</td>
<td>L_CAL_DATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L_CAL_MNTH</td>
</tr>
<tr>
<td>DESC</td>
<td>QTR_DESC</td>
<td>L_CAL_QTR</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_MNTH</td>
</tr>
<tr>
<td>None</td>
<td>Year</td>
<td>One-to-many</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>

**Year**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>YEAR_ID</td>
<td>L_CAL_YEAR</td>
<td>L_CAL_DATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L_CAL_MNTH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>
Facts

This section describes the facts used in CAM. The underlying processes are also explained briefly.

The main fact groups are

- **Revenue**: The amount of money generated from a transaction. It is also the price at which products were sold to a customer.
- **Cost**: The price the company paid to acquire or manufacture the products.
- **Index for Customer Counts from Customer Lookup**: All customer counts based on current information.
- **Index for Customer Counts with Historical Status**: All customer counts based on historical information.
- **Index for Customer Counts with Transactions**: A count of all customers with transactions.
- **Index for Order Counts**: A count of all orders and transactions based on historical information.

For additional details, see the MicroStrategy project definitions in the Schema Objects/Attributes and Schema Objects/Facts folders. Double-click any attribute or fact to view definitions, properties, source tables, and so on.

Revenue fact

This fact is the amount of money generated from a transaction, and provides a value for generated revenue. It is also the price at which products were sold to a customer. Metrics based on this fact are used for ranking customers by their revenue contributions and, when combined with cost, for profit calculations.
Fact

Revenue

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVENUE</td>
<td>Automatic</td>
<td>F_CUST_TXN_HIST</td>
<td>Customer, Date, Product, Transaction</td>
</tr>
</tbody>
</table>

Cost fact

This fact provides the cost of products sold. It is the price that the company paid to acquire or manufacture the products. Metrics based on this fact, along with those based on revenue, are used for calculating product and customer profitability, as well as cost.

Fact

Cost

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>COST</td>
<td>Automatic</td>
<td>F_CUST_TXN_HIST</td>
<td>Customer, Date, Product, Transaction</td>
</tr>
</tbody>
</table>
Index for Customer Counts from Customer Lookup fact

This fact is used for all customer counts based on current information. The Current Customer Count metrics are calculated using the CUSTOMER_ID column from the L_CUSTOMER table. All current status customer counts are based on this fact.

Fact

Index for Customer Counts from Customer Lookup

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMER_ID</td>
<td>Manual</td>
<td>L_CUSTOMER</td>
<td>Customer, Age Range, City, Education, Gender, Household Count, Housing Type, Income Range, Lifetime Value Score, Marital Status, Acquisition Date, Lost Date, Current Customer Tenure (Months), Current Customer Status</td>
</tr>
</tbody>
</table>

Index for Customer Counts with Historical Status fact

This fact is used for all the customer counts based on historical information. All Historical Customer Count metrics are calculated using the CUSTOMER_ID column from the F_CUST_STATUS_HIST table. The rate at which information is updated is reflected in the time key of this table.

Fact

Index for Customer Counts with Historical Status
**Definition**

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMER_ID</td>
<td>Manual</td>
<td>F_CUST_STATUS_HIST</td>
<td>Customer, Customer Status, Month, Customer Tenure (Months)</td>
</tr>
</tbody>
</table>

**Index for Customer Counts with Transactions fact**

This fact is used for all counts of customers with transactions. All customer count metrics are calculated using the CUSTOMER_ID column from the F_CUST_TXN_HIST table.

**Fact**

Index for Customer Counts with Transactions

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMER_ID</td>
<td>Manual</td>
<td>F_CUST_TXN_HIST</td>
<td>Customer, Product (Affinity Product), Date, Transaction</td>
</tr>
</tbody>
</table>

**Index for Order Counts fact**

This fact is used for all order and transaction counts based on historical information. All transaction count metrics are calculated using the TXN_ID column from the F_CUST_TXN_HIST table.
**Fact**

Index for Order Counts

**Definition**

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>TXN_ID</td>
<td>Manual</td>
<td>F_CUST_TXN_HIST</td>
<td>Customer, Product (Affinity Product), Date, Transaction</td>
</tr>
</tbody>
</table>

**Transformations**

CAM includes the following time transformations to enable analysis of a selected time period compared to another time period. All these transformations are based on table transformations.

<table>
<thead>
<tr>
<th>Transformation</th>
<th>Definition</th>
<th>Attribute</th>
<th>Transformation Table</th>
<th>Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Month</td>
<td>Enables analysis of a selected month compared to the previous month</td>
<td>Month</td>
<td>L_CAL_MNTH</td>
<td>LAST_MNTH_ID</td>
</tr>
<tr>
<td>Previous Quarter</td>
<td>Enables analysis of a selected quarter compared to the previous quarter</td>
<td>Quarter</td>
<td>L_CAL_QTR</td>
<td>LAST_QTR_ID</td>
</tr>
<tr>
<td>Previous Year</td>
<td>Enables analysis of a selected year compared to the previous year</td>
<td>Year</td>
<td>L_CAL_YEAR</td>
<td>LAST_YEAR_ID</td>
</tr>
</tbody>
</table>
PHYSICAL SCHEMA AND DATA DICTIONARY

Introduction

This appendix provides a diagram of the physical schema that comes with the Customer Analysis Module (CAM). This appendix also provides descriptions of all the tables and columns in the default data warehouse.

Prerequisites

This appendix was written for consultants and developers implementing and customizing the CAM application and for those building ETL routines to populate the data warehouse. It assumes you are familiar with basic RDBMS concepts and Erwin data modeling.
The following diagram represents the physical schema shipped with CAM. The physical schema is available in an Erwin file, located in Program Files/MicroStrategy/Analytics Modules/CAM/CA.er1.

Fact tables appear in teal (color) or gray (black and white).
# Table information

This section describes each physical table used in CAM.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
<th>Analysis Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>F_CUST_STATUS_HIST</td>
<td>Fact table containing the history of Customer Statuses tracked on a monthly basis. It is expected that all customers have a record in this table for every month for which history has to be tracked.</td>
<td>Customer</td>
</tr>
<tr>
<td>F_CUST_TXN_HIST</td>
<td>Fact table containing information about products purchased by customers.</td>
<td>Transaction</td>
</tr>
<tr>
<td>L_CAL_DATE</td>
<td>Lookup table for dates.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_MNTH</td>
<td>Lookup table for months.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_QTR</td>
<td>Lookup table for quarters.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_YEAR</td>
<td>Lookup table for years.</td>
<td>Time</td>
</tr>
</tbody>
</table>
| L_CUST_AGE_RNG          | Lookup table for Customer Demographic: Income Range. The values are:  
• 1 for below 20  
• 2 for 21-40  
• 3 for 41-60  
• 4 for 61-80  
• 5 for 81 and above | Customer      |
| L_CUST_CITY             | Lookup table for customer geographic information: City, State, and Region.                                                                                                                                   | Customer      |
| L_CUST_EDUCATION        | Lookup table for Customer Psychographics: Level of Education. Values are:  
• 1 - Undergraduate  
• 2 - Graduate  
• 3 - Other | Customer      |
| L_CUST_GENDER           | Lookup table for Customer Demographic: Gender. The values are:  
• 1 - Male  
• 2 – Female | Customer      |
| L_CUST_HH_COUNT         | Lookup table for Customer Psychographics: Number of people in the household in which the customer resides.                                                                                                                                 | Customer      |
| L_CUST_HOUSING          | Lookup table for Customer Psychographics: Housing information. Values are:  
• 1 - Renter  
• 2 - Owner | Customer      |
<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
<th>Analysis Area</th>
</tr>
</thead>
</table>
| L_CUST_INC_RNG      | Lookup table for Customer Demographic: Income Range. Values are:  
1. 1 for 0 - 20,000  
2. 2 for 20,001 - 40,000  
3. 3 for 40,001 - 60,000  
4. 4 for 60,001 - 80,000  
5. 5 for 80,001 upward  | Customer       |
| L_CUST_LV_SCORE     | Lookup table for Customer Lifetime Value Score. Values are:  
1. 1 - High  
2. 2 - Medium  
3. 3 – Low  | Customer       |
| L_CUST_MARITAL_STS  | Lookup table for Customer Psychographics: Marital Status. Values are:  
1. 1 - Single (Never Married)  
2. 2 - Married  
3. 3 - Divorced  | Customer       |
| L_CUST_STATUS       | Lookup table for Customer Statuses. Values are 1 for Active and 2 for Lost. An alias of this table also serves as the lookup for Current Customer Status.                                                                                                                                                                                                 | Customer       |
| L_CUSTOMER          | Lookup table for customer data. This targets a customer as a consumer rather than a business.                                                                                                                                                                                                                                               | Customer       |
| L_PRODUCT           | Lookup table for product information.                                                                                                                                                                                                                                                                                                    | Product        |
| L_TRANSACTION       | Lookup table for transactions.                                                                                                                                                                                                                                                                                                           | Transaction    |
Table column information

This section describes each physical table column used in CAM.

The Data Type column information in the following table reflects an Oracle database-specific format; depending on what database type you use, your data type may appear differently. You can use the Erwin file (see the CAM physical schema section above) to easily convert this information to another database type.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table: F_CUST_STATUS_HIST</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUST_STATUS_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Status of the customer in a particular month.</td>
<td>References CUST_STATUS_ID in L_CUST_STATUS</td>
</tr>
<tr>
<td>CUSTOMER_ID</td>
<td>Double</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Customer identification.</td>
<td>References CUSTOMER_ID in L_CUSTOMER</td>
</tr>
<tr>
<td>MNTH_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Month identification.</td>
<td>References MNTH_ID in L_CAL_MNTH</td>
</tr>
<tr>
<td>TENURE</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Number of months customer has had a relationship.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: F_CUST_TXN_HIST</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUSTOMER_ID</td>
<td>Double</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Customer identification.</td>
<td>References CUSTOMER_ID in L_CUSTOMER</td>
</tr>
<tr>
<td>PRODUCT_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Product which the customer has purchased/subscribed to.</td>
<td>References PRODUCT_ID in L_PRODUCT</td>
</tr>
<tr>
<td>DATE_ID</td>
<td>TimeStamp (0)</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Date of the transaction/order.</td>
<td>References DATE_ID in L_CAL_DATE</td>
</tr>
<tr>
<td>TXN_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/Yes</td>
<td>Transaction/order identification.</td>
<td>References TXN_ID in L_TRANSACTION</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>REVENUE</td>
<td>Numeric (15, 3)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Revenue tagged with the record. This is not the revenue for the transaction, which may have multiple products. However, if there are multiple items of the same product, Revenue is the consolidated figure of all items.</td>
<td></td>
</tr>
<tr>
<td>COST</td>
<td>Numeric (15, 3)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Cost tied with the record. This is not the cost for the transaction, which may have multiple products. However, if there are multiple items of the same product, Cost is the consolidated figure of all items.</td>
<td></td>
</tr>
<tr>
<td>NO_OF_ITEMS</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Number of product items the customer purchased as part of this transaction.</td>
<td></td>
</tr>
</tbody>
</table>

**Table: L_CAL_DATE**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE_ID</td>
<td>TimeStamp (0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of calendar date.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Year of the date.</td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Quarter of the date.</td>
</tr>
<tr>
<td>MNTH_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Month of the date.</td>
</tr>
</tbody>
</table>

References YEAR_ID in L_CAL_YEAR
References QTR_ID in L_CAL_QTR
References MNTH_ID in L_CAL_MNTH
<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table: L_CAL_MNTH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Not NULL</td>
<td>Yes/No</td>
<td>Month of the date.</td>
<td></td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Quarter of the date.</td>
<td>References QTR_ID in L_CAL_QTR</td>
</tr>
<tr>
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<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Year of the date.</td>
<td>References YEAR_ID in L_CAL_YEAR</td>
</tr>
<tr>
<td>MNTH_DESC</td>
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<td>No/Yes</td>
<td>Month description.</td>
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</tr>
<tr>
<td>LAST_MNTH_ID</td>
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<td>Not NULL</td>
<td>No/Yes</td>
<td>Month previous to the month indicated by this record.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: L_CAL_QTR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of quarters.</td>
<td></td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Year of the date.</td>
<td>References YEAR_ID in L_CAL_YEAR</td>
</tr>
<tr>
<td>QTR_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Quarter of the date.</td>
<td></td>
</tr>
<tr>
<td>LAST_QTR_ID</td>
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<td>No/Yes</td>
<td>Quarter previous to the quarter indicated by this record.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: L_CAL_YEAR</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Yes/No</td>
<td>Unique identifier of calendar year.</td>
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<tr>
<td>LAST_YEAR_ID</td>
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<td>No/Yes</td>
<td>Year previous to the year indicated by this record.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: L_CUST_AGE_RNG</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUST_AGE_RNG_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of age range brackets for customers.</td>
<td>Default values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 - below 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2 - 21-40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 3 - 41-60</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 4 - 61-80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 5 - 81 and above</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>CUST_AGE_RNG_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of age range brackets for customers.</td>
<td></td>
</tr>
<tr>
<td>CUST_CITY_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer city values.</td>
<td></td>
</tr>
<tr>
<td>CUST_STATE_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Unique identifier of customer state.</td>
<td></td>
</tr>
<tr>
<td>CUST_CITY_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer city.</td>
<td></td>
</tr>
<tr>
<td>CUST_REGION_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Unique identifier of customer region.</td>
<td></td>
</tr>
<tr>
<td>CUST_REGION_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer region.</td>
<td></td>
</tr>
<tr>
<td>CUST_STATE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer state.</td>
<td></td>
</tr>
<tr>
<td>CUST_EDUCATION_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer education level.</td>
<td></td>
</tr>
<tr>
<td>CUST_EDUCATION_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer education level.</td>
<td></td>
</tr>
<tr>
<td>CUST_GENDER_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of gender of a customer.</td>
<td></td>
</tr>
<tr>
<td>CUST_GENDER_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of gender of a customer.</td>
<td></td>
</tr>
<tr>
<td>CUST_HH_COUNT_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of set of customer household counts.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------</td>
<td>---------------</td>
<td>--------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CUST_HH_COUNT_DESC</td>
<td>VarChar(30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of sets of customer household counts.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: L_CUST_HOUSING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUST_HOUSING_ID</td>
<td>Numeric(38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer housing category.</td>
<td>Default values are:</td>
</tr>
<tr>
<td>CUST_HOUSING_DESC</td>
<td>VarChar(30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer housing category.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: L_CUST_INC_RNG</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUST_INC_RNG_ID</td>
<td>Numeric(38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of income range bracket for a customer.</td>
<td>Default values are:</td>
</tr>
<tr>
<td>CUST_INC_RNG_DESC</td>
<td>VarChar(30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description for customer income range bracket.</td>
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</tr>
<tr>
<td><strong>Table: L_CUST_LV_SCORE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUST_LV_SCORE_ID</td>
<td>Numeric(38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer lifetime value level.</td>
<td>Default values are:</td>
</tr>
<tr>
<td>CUST_LV_SCORE_DESC</td>
<td>VarChar(30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer lifetime value score.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: L_CUST_MARITAL_STS</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARITAL_STS_ID</td>
<td>Numeric(38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of marital status for a customer.</td>
<td>Default values are:</td>
</tr>
<tr>
<td>MARITAL_STS_DESC</td>
<td>VarChar(30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of marital status for customer.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>-----------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>L_CUST_STATUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUST_STATUS_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer status.</td>
<td>Default values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 1 - Active</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• 2 - Lost</td>
</tr>
<tr>
<td>CUST_STATUS_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of customer status.</td>
<td></td>
</tr>
<tr>
<td>L_CUSTOMER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUSTOMER_ID</td>
<td>Double</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of customer.</td>
<td></td>
</tr>
<tr>
<td>CURR_CUST_STATUS_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Unique identifier of customer status.</td>
<td>References CURR_CUST_STATUS_ID in L_CURR_CUST_STATUS</td>
</tr>
<tr>
<td>CUSTOM_LV_SCORE_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Lifetime value score for the customer.</td>
<td>References CURST_LV_SCORE_ID in L_CUST_LV_SCORE</td>
</tr>
<tr>
<td>CUST_HOUSING_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Housing type for the customer.</td>
<td>References CUST_HOUSING_ID in L_CUST_HOUSING</td>
</tr>
<tr>
<td>CUST_EDUCATION_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Education level for the customer.</td>
<td>References CUST_EDUCATION_ID in L_CUST_EDUCATION</td>
</tr>
<tr>
<td>MARITAL_STS_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Marital status for the customer.</td>
<td>References CUST_MARITAL_STS_ID in L_CUST_MARITAL_STS</td>
</tr>
<tr>
<td>CUST_HH_COUNT_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Number of people in the customer household.</td>
<td>References CUST_HH_COUNT_ID in L_CUST_HH_COUNT</td>
</tr>
<tr>
<td>CUST_GENDER_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Gender of the customer.</td>
<td>References CUST_GENDER_ID in L_CUST_GENDER</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------</td>
<td>---------------</td>
<td>--------------------------</td>
<td>-----------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CUST_AGE_RNG_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Age range of the customer.</td>
<td>References CUST_AGE_RNG_ID in L_CUST_AGE_RNG</td>
</tr>
<tr>
<td>CUST_INC_RNG_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>Income range of the customer.</td>
<td>References CUST_INC_RNG_ID in L_CUST_INC_RNG</td>
</tr>
<tr>
<td>CUST_CITY_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/Yes</td>
<td>City of residence of the customer.</td>
<td>References CUST_CITY_ID in L_CUST_CITY</td>
</tr>
<tr>
<td>ACQUISITION_DATE</td>
<td>TimeStamp</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Date when the customer was acquired.</td>
<td></td>
</tr>
<tr>
<td>CUSTOMER_NAME</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Customer description.</td>
<td></td>
</tr>
<tr>
<td>CURR_TENURE</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Current tenure in months of the customer.</td>
<td></td>
</tr>
<tr>
<td>LOST_DATE</td>
<td>TimeStamp</td>
<td>NULL</td>
<td>No/No</td>
<td>Date on which customer was lost, if customer status equals lost.</td>
<td></td>
</tr>
</tbody>
</table>

**Table: L_PRODUCT**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of products which customer can purchase or subscribe to.</td>
</tr>
<tr>
<td>PRODUCT_GRP_ID</td>
<td>Numeric</td>
<td>Not NULL</td>
<td>No/No</td>
<td>Unique identifier of product classification.</td>
</tr>
<tr>
<td>PRODUCT_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Product description.</td>
</tr>
<tr>
<td>PRODUCT_GRP_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>No/No</td>
<td>Description of product classification.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>TXN_ID</td>
<td>Numeric (38,0)</td>
<td>Not NULL</td>
<td>Yes/No</td>
<td>Unique identifier of transactions/orders.</td>
</tr>
</tbody>
</table>
Introduction

This appendix presents the logical data model on which the Sales Analysis Module (SAM) is built.

This appendix provides a description for

- business hierarchies, including attributes and relationships, and their metadata objects definitions
- module transformations and user hierarchies
- module facts

For a general description, basic procedures, and additional details about understanding and working with SAM’s logical data model, see Chapter 1, *Introduction to the Sales Analysis Module*.

Information can also be found by accessing each attribute’s definition using the Attribute Editor. The attributes can be found in the Schema Objects/Attributes folder. Double-click an attribute to open the Attribute Editor.
Prerequisites

This appendix assumes you have prior experience with logical data modeling and creating business intelligence applications using MicroStrategy technology.

SAM logical schema

The following diagram represents the logical model shipped with SAM. The logical schema diagram is also available in an Erwin file, which is located in Program Files/MicroStrategy/Analytics Modules/SAM/Sales.ER1.

Fact tables appear in teal (color) or dark gray (black and white). Relate tables appear in light gray.
Business hierarchies

SAM is designed to provide deep insight into your entire sales process. SAM accomplishes this partly through a set of attributes (business concepts) and their relationships to each other. These attributes are arranged in a specific sequence according to a business structure, and that arrangement is called a hierarchy.

The key business hierarchies in the sales analysis process are

- **Account**: The external party in the sales cycle
- **Sales Organization**: The organization within the company leading the sales cycle
- **Product**: The product (or services) offered by the company
- **Lead**: When an account expresses interest in company products
- **Opportunity**: The sales cycle and its many stages
- **Order**: Whenever an opportunity is closed because the company sells products
- **Time**: The calendar time

Each business hierarchy is detailed in the following sections. For additional information on hierarchies, see the MicroStrategy project definitions in SAM’s Schema Objects/Attributes and Schema Objects/Facts folders. From one of these folders, double-click an attribute or fact to view definitions, properties, source tables, and so on.
Account hierarchy

This hierarchy represents the external party in the sales cycle. The attributes and relationships in the following figure represent the Account hierarchy.

A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>Industry to which the company belongs</td>
<td>Retail, banking, telco</td>
</tr>
<tr>
<td>Number of Employees</td>
<td>Measure of the size of the company</td>
<td>Numeric value or range</td>
</tr>
<tr>
<td>Note: This attribute is not included in the MicroStrategy project.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company</td>
<td>The prospect or customer</td>
<td>The Cheesecake Company</td>
</tr>
<tr>
<td>Account</td>
<td>Entity within the company that originates an opportunity or purchases products</td>
<td>Marketing department, IT department</td>
</tr>
</tbody>
</table>

The detailed definition of each attribute in the MicroStrategy metadata repository listed previously is shown in the following tables (except where noted in the previous table).
Industry

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>INDUS_ID</td>
<td>L_COMPANY</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>INDUS_DESC</td>
<td>L_COMPANY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
<td>None</td>
<td>One-to-many</td>
<td>L_COMPANY</td>
</tr>
</tbody>
</table>

Company

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>COMPANY_ID</td>
<td>L_COMPANY</td>
<td>L_ACCT</td>
</tr>
<tr>
<td>DESC</td>
<td>COMPANY_DESC</td>
<td>L_COMPANY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account</td>
<td>None</td>
<td>One-to-many</td>
<td>L_ACCT</td>
</tr>
<tr>
<td>None</td>
<td>Industry</td>
<td>Many-to-one</td>
<td>L_COMPANY</td>
</tr>
<tr>
<td>None</td>
<td>Number of Employees</td>
<td>Many-to-one</td>
<td>L_COMPANY</td>
</tr>
</tbody>
</table>

Account

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LEAD_ID</td>
<td>L_ACCT</td>
<td>F_LEAD_STATUS, F_OPTY and F_ORDER</td>
</tr>
<tr>
<td>DESC</td>
<td>LEAD_DESC</td>
<td>L_ACCT</td>
<td>None</td>
</tr>
</tbody>
</table>
Sales Organization hierarchy

This hierarchy represents the sales organization within the company leading the sales cycle. The attributes and relationships in the following figure represent the Sales Organization hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Region</td>
<td>Sales Organization is subdivided into Regions. Several districts may be</td>
<td>Canada, Europe, United States</td>
</tr>
<tr>
<td></td>
<td>assigned to one sales region.</td>
<td></td>
</tr>
<tr>
<td>Sales District</td>
<td>Within each Sales Region, there is a subdivision into Sales Districts.</td>
<td>Ontario, Quebec, Northern Europe, Central</td>
</tr>
<tr>
<td></td>
<td>Several sales representatives may be assigned to one sales district.</td>
<td>Europe, Northeast US, Central US</td>
</tr>
<tr>
<td>Sales Representative</td>
<td>This is the lowest level in the sales organization, representing the individual who is responsible for the sales cycle.</td>
<td>Jane Doe, Jim Smith</td>
</tr>
</tbody>
</table>
The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.

**Sales Region**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_REGN_ID</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_REGN_DESC</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales District</td>
<td>None</td>
<td>One-to-many</td>
<td>L_SALES_REP</td>
</tr>
</tbody>
</table>

**Sales District**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_DIST_ID</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_DIST_DESC</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Representative</td>
<td>None</td>
<td>One-to-many</td>
<td>L_SALES_REP</td>
</tr>
<tr>
<td>None</td>
<td>Sales Region</td>
<td>Many-to-one</td>
<td>L_SALES_REP</td>
</tr>
</tbody>
</table>
Sales Representative

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_REP_ID</td>
<td>L_SALES_REP</td>
<td>F_ORDER, F_OPTY, F_OPTY_MNTH_HIST, and F_SALES_REP_QTA</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_REP_DESC</td>
<td>L_SALES_REP</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Sales Region</td>
<td>Many-to-one</td>
<td>L_SALES_REP</td>
</tr>
<tr>
<td>None</td>
<td>Sales District</td>
<td>Many-to-one</td>
<td>L_SALES_REP</td>
</tr>
</tbody>
</table>

Product hierarchy

This hierarchy represents the products (or services) offered by the company. The attributes and relationships in the following figure represent the Product hierarchy.

A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.
The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following table.

### Product Group

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Group</td>
<td>Products are organized into categories. Each product group includes several products.</td>
<td>Servers, storage products</td>
</tr>
<tr>
<td>Product</td>
<td>The product or service sold by the company. • An order may include one or more products. • An opportunity will also have a number of products assigned. • Lead does not include product information.</td>
<td>NT servers, UNIX servers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PROD_GRP_ID</td>
<td>L_SALES_PRODUCT</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>PROD_GRP_DESC</td>
<td>L_SALES_PRODUCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>None</td>
<td>One-to-many</td>
<td>L_SALES_PRODUCT</td>
</tr>
</tbody>
</table>

### Product

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PROD_ID</td>
<td>L_SALES_PROD</td>
<td>F_ORDER</td>
</tr>
<tr>
<td>DESC</td>
<td>PROD_NAME</td>
<td>L_SALES_PROD</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Product Group</td>
<td>Many-to-one</td>
<td>L_SALES_PRODUCT</td>
</tr>
<tr>
<td>None</td>
<td>Opportunity</td>
<td>Many-to-many</td>
<td>R_OPTY_PROD</td>
</tr>
</tbody>
</table>
Lead hierarchy

A lead is established when an account expresses interest in the company products (or services). The attributes and relationships in the following figure represent the Lead hierarchy.

![Lead hierarchy diagram]

- A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Source</td>
<td>Source through which a lead was generated</td>
<td>Web, campaign, indirect, partner</td>
</tr>
<tr>
<td>Lead Type</td>
<td>Indicates whether a lead is from a new prospect or from an existing customer</td>
<td>New business or existing business</td>
</tr>
</tbody>
</table>
| Lead Status | The lead’s current situation; for example, “qualified” when it becomes a sales opportunity, or “closed” because the lead didn’t qualify  
- Only the last Lead Status is stored; whenever the status changes, the value is updated in all tables | Qualified, closed, no response         |
| Lead        | Represents an account’s interest in the company’s products or services, which may become a sales opportunity  
- Each Lead will be assigned to one account  
- Once a lead is qualified, an Opportunity is created and assigned to the lead  
- Finally, when an Opportunity is closed and an order generated, Order will be associated to the original Lead | High NT Performance Seminar – November, DC |

The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.
### Lead Source

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LEAD_SRC_ID</td>
<td>L_LEAD_SOURCE</td>
<td>L_LEAD</td>
</tr>
<tr>
<td>DESC</td>
<td>LEAD_SRC_DESC</td>
<td>L_LEAD_SOURCE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>None</td>
<td>One-to-many</td>
<td>L_LEAD</td>
</tr>
</tbody>
</table>

### Lead Type

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LEAD_TYPE_ID</td>
<td>L_LEAD_TYPE</td>
<td>L_LEAD</td>
</tr>
<tr>
<td>DESC</td>
<td>LEAD_TYPE_DESC</td>
<td>L_LEAD_TYPE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>None</td>
<td>One-to-many</td>
<td>L_LEAD</td>
</tr>
</tbody>
</table>

### Lead Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LEAD_STAT_ID</td>
<td>L_STATUS</td>
<td>L_LEAD</td>
</tr>
<tr>
<td>DESC</td>
<td>LEAD_STAT_DESC</td>
<td>L_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>
Opportunity hierarchy

Opportunity represents the sales cycle and its various stages. The relationship with Opportunity was established to identify products associated with an opportunity (R_OPTY_PROD) and then analyze product closure (opportunities compared to orders at the product level).

Drilling from Opportunity to Product when opportunity size metrics are present is not recommended because those facts are not defined at the product level.

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Lead Source</td>
<td>Many-to-one</td>
<td>L_LEAD</td>
</tr>
<tr>
<td>None</td>
<td>Lead Type</td>
<td>Many-to-one</td>
<td>L_LEAD</td>
</tr>
<tr>
<td>None</td>
<td>Lead Status</td>
<td>Many-to-one</td>
<td>L_LEAD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>None</td>
<td>One-to-many</td>
<td>L_LEAD</td>
</tr>
</tbody>
</table>
The attributes and relationships in the following figure represent the Opportunity hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity Open Date</td>
<td>Day when opportunity was opened; therefore, when a qualified lead was assigned to a sales representative</td>
<td>12/15/2001</td>
</tr>
<tr>
<td>Opportunity Close Date</td>
<td>Day when opportunity was closed, or when opportunity reached the status of “Closed” or “Lost”</td>
<td>1/15/2003</td>
</tr>
<tr>
<td>Opportunity Estimated Close Date</td>
<td>Estimated date for when an opportunity will be closed</td>
<td>11/10/2003</td>
</tr>
<tr>
<td>Primary Competitor</td>
<td>Other company involved in the sales opportunity offering competitive products</td>
<td>Advanced Microsystems, Inc.</td>
</tr>
<tr>
<td>Opportunity Status</td>
<td>For a specific time, the status of the opportunity in the sales cycle</td>
<td>Top of the funnel, In the funnel, Commit, Closed, or Lost</td>
</tr>
<tr>
<td>Current Opportunity Status</td>
<td>For any given time, the most recent value for the sales cycle status</td>
<td>Top of the funnel, In the funnel, Commit, Closed, or Lost</td>
</tr>
<tr>
<td>Close Probability</td>
<td>Probability that the opportunity will become a sale based on the status of the opportunity</td>
<td>An opportunity with a Closed status has a 100% probability assigned; an opportunity with a Commit status has an 80% probability; an opportunity with a Lost status has a 0% probability</td>
</tr>
</tbody>
</table>
The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Opportunity Open Date

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Close</td>
<td>Probability that the opportunity will become a sale based on the current status of the opportunity</td>
<td>An opportunity with a Closed status has a 100% probability assigned; an opportunity with a Commit status has an 80% probability; an opportunity with a Loss status has a 0% probability</td>
</tr>
<tr>
<td>Probability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>Represents the sales cycle, when the company tries to sell products to an account</td>
<td>UNIX conversion of the SFA system</td>
</tr>
<tr>
<td></td>
<td>• Each qualified lead becomes an opportunity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Each opportunity is associated with a sales representative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Each opportunity has one or more products associated with it</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Once an opportunity is closed, it becomes an order. This order is tied back to the lead and the opportunity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Each opportunity goes through various opportunity statuses; the opportunity status is tied to the opportunity through the fact table</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_OPEN_DATE</td>
<td>L_OPTY</td>
</tr>
<tr>
<td>Form</td>
<td>Form Expression</td>
<td>Lookup Table</td>
</tr>
<tr>
<td>ID</td>
<td>OPTY_OPEN_DATE</td>
<td>L_OPTY</td>
</tr>
<tr>
<td>Form</td>
<td>Form Expression</td>
<td>Lookup Table</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Tables</td>
</tr>
<tr>
<td>ID</td>
<td>OPTY_OPEN_DATE</td>
<td>None</td>
</tr>
</tbody>
</table>
### Opportunity Estimated Close Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_EST_CL_DATE</td>
<td>L_OPTY</td>
<td>None</td>
</tr>
</tbody>
</table>

### Primary Competitor

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PRIMARY_COMP_ID</td>
<td>L_OPTY</td>
<td>None</td>
</tr>
<tr>
<td>ID</td>
<td>COMPETITOR_ID</td>
<td>L_COMPETITOR</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>COMPETITOR_NAME</td>
<td>L_COMPETITOR</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity</td>
<td>None</td>
<td>One-to-many</td>
<td>L_OPTY</td>
</tr>
</tbody>
</table>
Opportunity Status

This attribute is related to Opportunity through the fact tables.

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_STAT_ID</td>
<td>L_OPTY_STATUS</td>
<td>F_OPTY, F_OPTY_MNTH_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>OPTY_STAT_DESC</td>
<td>L_OPTY_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Close Probability</td>
<td>Many-to-one</td>
<td>L_OPTY_STATUS</td>
</tr>
</tbody>
</table>

Current Opportunity Status

L_CURR_OPTY_STATUS is a logical table defined as a table alias of L_OPTY_STATUS. This feature allows two attributes to be based on the same physical table, although each of them is a different concept.

Values for Opportunity Status and Current Opportunity Status are the same.

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_STAT_ID</td>
<td>L_CURR_OPTY_STATUS</td>
<td>None</td>
</tr>
<tr>
<td>ID</td>
<td>CURR_OPTY_STAT_ID</td>
<td>None</td>
<td>L_OPTY</td>
</tr>
<tr>
<td>DESC</td>
<td>OPTY_STAT_DESC</td>
<td>L_CURR_OPTY_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Current Close Probability</td>
<td>Many-to-one</td>
<td>L_CURR_OPTY_STATUS</td>
</tr>
<tr>
<td>Opportunity</td>
<td>None</td>
<td>One-to-many</td>
<td>L_OPTY</td>
</tr>
</tbody>
</table>
Close Probability

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_PROB</td>
<td>L_OPTY_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity Status</td>
<td>None</td>
<td>One-to-many</td>
<td>L_OPTY_STATUS</td>
</tr>
</tbody>
</table>

Current Close Probability

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_PROB</td>
<td>L_CURR_OPTY_STATUS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Opportunity Status</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CURR_OPTY_STATUS</td>
</tr>
</tbody>
</table>

Opportunity

The relationship with Product was established to identify products associated with an opportunity (R_OPTY_PROD) and then analyze product closure (opportunities vs. orders at the product level).

Drilling from Opportunity to Product when opportunity size metrics are present is not recommended because those facts are not defined at the product level.

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>OPTY_ID</td>
<td>L_OPTY</td>
<td>F_OPTY, F_OPTY_MNTH_HIST, R_OPTY_PROD, F_ORDER</td>
</tr>
<tr>
<td>DESC</td>
<td>OPTY_DESC</td>
<td>L_OPTY</td>
<td>None</td>
</tr>
</tbody>
</table>
## Order hierarchy

An order is established whenever an opportunity is closed and the company sells products. The attributes and relationships in the following figure represent the Order hierarchy.

### Order hierarchy diagram

![Order hierarchy diagram](image)

### Table

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Current Opportunity Status</td>
<td>Many-to-one</td>
<td>L_OPTY</td>
</tr>
<tr>
<td>None</td>
<td>Opportunity Close Date</td>
<td>Many-to-one</td>
<td>L_OPTY</td>
</tr>
<tr>
<td>None</td>
<td>Opportunity Open Date</td>
<td>Many-to-one</td>
<td>L_OPTY</td>
</tr>
<tr>
<td>None</td>
<td>Primary Competitor</td>
<td>Many-to-one</td>
<td>L_OPTY</td>
</tr>
<tr>
<td>None</td>
<td>Opportunity Estimated Close Date</td>
<td>Many-to-one</td>
<td>L_OPTY</td>
</tr>
<tr>
<td>Product</td>
<td>None</td>
<td>Many-to-many</td>
<td>R_OPTY_PROD</td>
</tr>
</tbody>
</table>

### Children

- None
  - Current Opportunity Status
  - Opportunity Close Date
  - Opportunity Open Date
  - Primary Competitor
  - Opportunity Estimated Close Date

### Parents

- None
  - Current Opportunity Status
  - Opportunity Close Date
  - Opportunity Open Date
  - Primary Competitor
  - Opportunity Estimated Close Date

### Form and Lookup Table

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments</td>
<td>OPTY_ID</td>
<td>L_OPTY</td>
<td>F_OPTY, F_OPTY_MNTH_HIST, R_OPTY_PROD, F_ORDER</td>
</tr>
<tr>
<td>Comments</td>
<td>OPTY_COMM</td>
<td>L_OPTY</td>
<td>None</td>
</tr>
</tbody>
</table>

© 2004 MicroStrategy, Inc.
A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discount Indicator</td>
<td>Indicates whether the order has any form of discount associated with it</td>
<td>Yes or No</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: This attribute was added to the MicroStrategy project but is not used for any analysis</td>
<td></td>
</tr>
<tr>
<td>Order</td>
<td>Unique ID that identifies a purchase</td>
<td>Numeric ID: 12573983</td>
</tr>
<tr>
<td></td>
<td>• An opportunity that is closed (the end of the sales cycle) results in an order</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Each order has one or more products that have been purchased</td>
<td></td>
</tr>
</tbody>
</table>

The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Discount Indicator

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DISCOUNT_IND</td>
<td>L_ORDER</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order</td>
<td>None</td>
<td>One-to-many</td>
<td>L_ORDER</td>
</tr>
</tbody>
</table>

### Order

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ORDER_ID</td>
<td>L_ORDER</td>
<td>F_ORDER</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Discount Indicator</td>
<td>Many-to-one</td>
<td>L_ORDER</td>
</tr>
</tbody>
</table>
### Time hierarchy

This hierarchy represents the calendar time. The attributes and relationships in the following figure represent the Time hierarchy.

![Time Hierarchy Diagram](image)

A check sign in the figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Calendar year</td>
<td>2003</td>
</tr>
</tbody>
</table>
| Quarter   | Calendar quarter; also includes attributes in the other fact tables that are associated with time period as Quarter  
- Sales Representative Quota is tracked at a quarterly level | Q3-2002 |
The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Year

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>YEAR_ID</td>
<td>L_CAL_YEAR</td>
<td>L_CAL_QTR, L_CAL_MNTH, and L_CAL_DATE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>

### Quarter

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>QTR_ID</td>
<td>L_CAL_QTR</td>
<td>L_CAL_MNTH, L_CAL_DATE, and F_SALES_REP_QTA</td>
</tr>
<tr>
<td>DESC</td>
<td>QTR_DESC</td>
<td>L_CAL_QTR</td>
<td>None</td>
</tr>
</tbody>
</table>

The detailed definitions of the attributes in the MicroStrategy metadata repository listed previously are shown in the following tables.
### Month

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td></td>
<td>One-to-many</td>
<td>L_CAL_MNTH</td>
</tr>
<tr>
<td>None</td>
<td>Year</td>
<td>Many-to-one</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>

#### Form and Lookup Table

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>MNTH_ID</td>
<td>L_CAL_MNTH</td>
<td>L_CAL_DATE, F_OPTY_MNTH_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>MNTH_DESC</td>
<td>L_CAL_MNTH</td>
<td></td>
</tr>
</tbody>
</table>

### Date

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_DATE</td>
</tr>
<tr>
<td>None</td>
<td>Quarter</td>
<td>Many-to-one</td>
<td>L_CAL_MNTH</td>
</tr>
</tbody>
</table>

#### Form and Lookup Table

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DATE_ID</td>
<td>L_CAL_DATE</td>
<td>None</td>
</tr>
<tr>
<td>ID</td>
<td>LEAD_OPEN_DATE</td>
<td>None</td>
<td>F_LEAD_STATUS</td>
</tr>
<tr>
<td>ID</td>
<td>STAT_OPEN_DATE</td>
<td>None</td>
<td>F_OPTY</td>
</tr>
<tr>
<td>ID</td>
<td>ORDER_DATE</td>
<td>None</td>
<td>F_ORDER</td>
</tr>
</tbody>
</table>

### Children and Parents

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Month</td>
<td>Many-to-one</td>
<td>L_CAL_DATE</td>
</tr>
</tbody>
</table>
Transformations

SAM includes the following time transformations to enable analysis of a selected time period compared to another time period. All these transformations are based on table transformations.

<table>
<thead>
<tr>
<th>Transformation</th>
<th>Definition</th>
<th>Attribute</th>
<th>Transformation Table</th>
<th>Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Month</td>
<td>Enables analysis of a selected month compared to the previous month</td>
<td>Month</td>
<td>L_CAL_MNTH</td>
<td>PREV_MNTH_ID</td>
</tr>
<tr>
<td>Previous Quarter</td>
<td>Enables analysis of a selected quarter compared to the previous quarter</td>
<td>Quarter</td>
<td>L_CAL_QTR</td>
<td>PREV_QTR_ID</td>
</tr>
<tr>
<td>Previous Year</td>
<td>Enables analysis of a selected year compared to the previous year</td>
<td>Year</td>
<td>L_CAL_YEAR</td>
<td>PREV_YEAR_ID</td>
</tr>
<tr>
<td>Year to Month</td>
<td>Enables analysis of a selected month compared to all months, from the beginning of the year to the selected month</td>
<td>Month</td>
<td>L_MONTH_YTD</td>
<td>YTD_MNTH_ID</td>
</tr>
<tr>
<td>Year to Quarter</td>
<td>Enables analysis of a selected quarter compared to all quarters, from the beginning of the year to the selected quarter</td>
<td>Quarter</td>
<td>L_QUARTER_YTD</td>
<td>YTD_QTR_ID</td>
</tr>
</tbody>
</table>

User hierarchies

SAM includes several user hierarchies to facilitate navigation through some of the business hierarchies listed previously.

<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Level</th>
<th>Attribute</th>
<th>Entry Point?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account</td>
<td>1</td>
<td>Company</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation for Account hierarchy attributes.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Industry</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Account</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Hierarchy</td>
<td>Level</td>
<td>Attribute</td>
<td>Entry Point?</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------</td>
<td>--------------------</td>
<td>--------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Lead</td>
<td>1</td>
<td>Lead Status</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation for Lead hierarchy attributes.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Lead Source</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Lead Type</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Lead</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>1</td>
<td>Opportunity Status</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation for Opportunity hierarchy attributes.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Current Opportunity Status</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Opportunity Open Date</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Opportunity Close Date</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Primary Competitor</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Opportunity</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Order</td>
<td>1</td>
<td>Discount Indicator</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation for the Order hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Order</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Product</td>
<td>1</td>
<td>Product Group</td>
<td>Yes</td>
<td>• This user hierarchy allows users to navigate through the Product hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Product</td>
<td>No</td>
<td>• Product Group is the entry point.</td>
</tr>
<tr>
<td>Sales Organization</td>
<td>1</td>
<td>Sales Region</td>
<td>Yes</td>
<td>• This user hierarchy allows users to navigate through the Sales Organization hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Sales District</td>
<td>No</td>
<td>• Sales Region is the entry point.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Sales Representative</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>Year</td>
<td>Yes</td>
<td>• This user hierarchy allows users to navigate through the Time hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Quarter</td>
<td>No</td>
<td>• Year is the entry point.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Month</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Date</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Time – Year to Month</td>
<td>1</td>
<td>Year</td>
<td>Yes</td>
<td>• This hierarchy is used for prompts and drill navigation, and allows users to select any time level from year to month.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Quarter</td>
<td>No</td>
<td>• Year is the entry point.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Month</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Time – Year to Quarter</td>
<td>1</td>
<td>Year</td>
<td>Yes</td>
<td>This user hierarchy is used for drill navigation, and allows users to select any time level from year to quarter.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Quarter</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
Facts

This section describes the facts used in SAM.

The main facts are

- **Lead Size**: This fact provides an estimated value of the revenue that may be generated from a lead and is used in amount-related lead metrics.

- **Opportunity Size**: This fact provides the estimated revenue size of an opportunity and is used for estimated revenue metrics.

- **Weighted Opportunity Size**: This fact provides the weighted estimated revenue, and it is dependent on the opportunity size and the opportunity status.

- **Order Amount**: This fact measures revenues generated by each product in an order.

- **Sales Representative Quota**: This is the quota assigned to each sales representative for a specific period. SAM’s default time period for this is Quarter.

- **Index for Lead Counts**: This is a “logical” fact created for lead counts. All lead count metrics are based on this fact.

- **Index for Opportunity Counts**: This is a “logical” fact created for opportunity counts. All opportunity count metrics are based on this fact.

- **Index for Order Counts**: This is a “logical” fact created for order counts. All order count metrics are based on this fact.

For additional details, see the MicroStrategy project definitions in the Schema Objects/Attributes and Schema Objects/Facts folders. Double-click any attribute or fact to view definitions, properties, source tables, and so on.
Lead Size fact

This fact is designed for metrics that are based on the size of the lead. The size of the lead is tracked with every change in the lead status. It is possible that the initial lead size will be different from the lead size when the lead is qualified to become an opportunity. Only the current lead size is recorded in the fact table, so no history details are kept.

If this fact is absent, all reporting on lead size metrics is eliminated.

Fact

Lead Size

Comment

This fact provides an estimated value of the revenue that may be generated from a lead and is used in amount-related lead metrics. The lead size metrics are based on this fact.

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD_SIZE</td>
<td>Automatic</td>
<td>F_LEAD_STATUS</td>
<td>Lead, Lead Status, Account, Date</td>
</tr>
<tr>
<td>L_LEAD</td>
<td></td>
<td>L_LEAD</td>
<td>Lead, Lead Status, Lead Source, Lead Type</td>
</tr>
</tbody>
</table>

Opportunity Size fact

This fact is designed for metrics that are based on the size of the opportunity. The size of the opportunity is tracked with every change in the opportunity status. It is possible that the final opportunity size (when the opportunity is closed) will be different (higher or lower) than the initial opportunity size (top of the funnel opportunity).
Unlike leads, each opportunity status is tracked separately (a new record is created for each opportunity status change). Therefore, for a given opportunity, each status is tracked separately in the fact table, and the corresponding opportunity size is also tracked separately.

The metrics based on this fact work more like an inventory metric, because you are only interested in the most recent value or the last value. The metrics are of a non-aggregate type.

⚠️ If this fact is removed from the project, all Opportunity Size-based metrics are affected.

**Fact**

Opportunity Size

**Comment**

This fact provides the estimated revenue size of an opportunity and is used for estimated revenue metrics.

** Definition**

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTY_SIZE</td>
<td>Automatic</td>
<td>F_OPTY</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F_OPTY_MNTH_HIST</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Month</td>
</tr>
</tbody>
</table>
Weighted Opportunity Size fact

This fact is designed for metrics that are based on the size of the opportunity and the opportunity status. The weighted size of the opportunity is tracked with every change in the opportunity status and the opportunity size. Each opportunity status is assigned a weight (a factor between 0.0 and 1.0), and this factor is applied to the opportunity size for each status to calculate the weighted opportunity size.

Unlike leads, each opportunity status is tracked separately (a new record is created for each status change). Therefore, for a given opportunity, each status is tracked separately in the fact table, and the corresponding opportunity size and weighted opportunity are also tracked separately.

The metrics based on this fact work more like an inventory metric, because you are only interested in the most recent value or the last value. The metrics are of a non-aggregate type.

The absence of this fact does not impact reporting significantly. The opportunity size can be used for calculating the weighted opportunity size.

**Fact**

Weighted Opportunity Size

**Comment**

This fact provides the weighted estimated revenue and is dependent on the opportunity size and the opportunity status.
Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wght_Opty_SIZE</td>
<td>Automatic</td>
<td>F_Opty</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F_Opty_Mnth_Hist</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Month</td>
</tr>
</tbody>
</table>

Order Amount fact

This fact is based on the order amount. The order amount is tracked at the level of the order and a product. An order can have one or more purchased products. There is a record for each product purchased in an order, and an associated order amount.

- Order amount is not at the level of the order but at the level of the product within the order.

- If the order amount fact is not present, all reporting based on order amount is eliminated, including reporting based on total sales and sales representative quota.

Fact

Order Amount

Comment

This fact measures revenue generated by each product in an order.
Sales Representative Quota fact

This fact is based on the target sales associated with a sales representative. This fact, when aggregated at one level higher, provides the target quotas for sales districts, and one level higher again provides the target quotas for sales regions.

The fact information is currently stored at the quarterly level. Therefore, reporting on target sales and actual sales can be done at the level of Quarter or higher. Such reporting cannot be done at a level lower than Quarter, for example, Month.

If this fact is absent, it impacts those reports that return data on target sales vs. actual sales, quota vs. percent achieved, and other sales organization analysis.

Fact

Sales Representative Quota

Comment

This is the quota assigned to each sales representative for a specific time period, by default set to Quarter.
Index for Lead Counts fact

This fact is used for all Lead Count metrics. The purpose of this fact is that all the Lead Count metrics are calculated using the LEAD_ID column from the F_LEAD_STATUS table.

If this fact is removed, it is not possible to execute the Lead Analysis reports. By default, all the lead metrics go against the fact table F_LEAD_STATUS, but not L_LEAD.

Fact

Index for Lead Counts

Comment

All Lead Count metrics are based on this fact.

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD_ID</td>
<td>Manual</td>
<td>F_LEAD_STATUS</td>
<td>Lead, Lead Status, Account, Date</td>
</tr>
</tbody>
</table>

Index for Opportunity Counts fact

This fact is used for all the Opportunity Count metrics. The purpose of this fact is that all the Opportunity Count metrics are calculated using the OPTY_ID column from the F_OPTY or F_OPTY_MNTH_HIST table.

If this fact is removed, it is not possible to execute the Pipeline and Sales Performance reports. By default, all the opportunity metrics go against the fact table F_OPTY and F_OPTY_MNTH_HIST, but not L_OPTY.

Fact

Index for Opportunity Counts
Comment

All Opportunity Count metrics are based on this fact.

Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTY_ID</td>
<td>Manual</td>
<td>F_OPTY</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F_OPTY_MNTH_HIST</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Month</td>
</tr>
</tbody>
</table>

Index for Order Counts fact

This fact is used for all the Order Count metrics. The purpose of this fact is that all the Order Count metrics are calculated using the ORDER_ID column from the F_ORDER table.

If this fact is removed, it is not possible to execute the Product Sales Analysis reports. By default, all the order metrics go against the fact table F_ORDER, but not L_ORDER.

Fact

Index for Order Counts

Comment

All Order Count metrics are based on this fact.
## Definition

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
<th>Dimensionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER_ID</td>
<td>Manual</td>
<td>F_ORDER</td>
<td>Opportunity, Opportunity Status, Lead, Account, Sales Representative, Product, Order, Date</td>
</tr>
</tbody>
</table>
PHYSICAL SCHEMA AND DATA DICTIONARY

Introduction

This appendix provides a diagram of the physical schema that comes with the Sales Analysis Module (SAM). This appendix also provides descriptions of all the tables and columns in the default data warehouse.

Prerequisites

This appendix was written for consultants and developers implementing and customizing the SAM application and for those building ETL routines to populate the data warehouse. It assumes you are familiar with basic RDBMS concepts and Erwin data modeling.
SAM physical schema

The following diagram represents the physical schema shipped with SAM. The physical schema definition is also available in an Erwin file, which is located in Program Files/MicroStrategy/Analytics Modules/SAM/Sales.ER1.

Fact tables appear in teal (color) or dark gray (black and white). Relate tables appear in light gray.
# Table information

This section describes each physical table used in SAM.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
<th>Analysis Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>L_ACCT</td>
<td>This hierarchy/look-up table contains information about accounts. An account is associated with a Company or an Organization.</td>
<td>Company</td>
</tr>
<tr>
<td>L_COMPANY</td>
<td>This is the hierarchy/look-up table for Company/Organization. There is one record for each company, with information on the company name, industry, and the number of employees. Note: A record is inserted for every new company that is targeted as a lead. In addition, if any of the existing characteristics of the company change (like the number of employees), the record is updated.</td>
<td>Company</td>
</tr>
<tr>
<td>L_LEAD</td>
<td>This hierarchy/look-up table contains all the Lead information, including the description, the open date, source, type, status, and the size. Note: A record is inserted each time a new lead is generated. The lead status and lead size information are updated every time there is a change of status for the lead.</td>
<td>Lead</td>
</tr>
<tr>
<td>L_LEAD_SOURCE</td>
<td>This hierarchy/look-up table contains information about the various lead sources. This designates where the lead came from. Some lead sources include campaign, partner, website, trade show, and Internal.</td>
<td>Lead</td>
</tr>
<tr>
<td>L_LEAD_STATUS</td>
<td>This hierarchy/look-up table contains information about the various lead statuses. This shows what the current status of the lead is. This information is dependent on how you track leads. For example, a lead might have such statuses as Open, Rejected, and Closed, or it could be much more complex.</td>
<td>Lead</td>
</tr>
<tr>
<td>L_LEAD_TYPE</td>
<td>This hierarchy/look-up table contains information about the various lead types. This shows whether the lead is from an existing business, a new business, or any other lead type you might want to track.</td>
<td>Lead</td>
</tr>
<tr>
<td>L_OPTY</td>
<td>This hierarchy/look-up table contains information about opportunities, including the opportunity open date, close date, current status, and the primary competitor associated with an opportunity. Note: For every opportunity generated, a record is inserted in this table. Each time the status of the opportunity changes, the record is updated. Once the opportunity closes, the opportunity close date is also updated.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>L_OPTY_STATUS</td>
<td>This hierarchy/look-up table contains information about the various opportunity statuses. This information is dependent on how you track opportunities. For example, an opportunity can have such statuses as Active or Closed, or it could be much more complex.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>L_COMPETITOR</td>
<td>This hierarchy/look-up table is for competitors. This contains the names of all competitors.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
<td>Analysis Area</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>L_SALES_PROD</td>
<td>This hierarchy/look-up table contains information about Product. By default, there are two levels of information: Product and Product Group.</td>
<td>Product</td>
</tr>
<tr>
<td>R_OPTY_PROD</td>
<td>This relate table contains information about the product associated with an opportunity. This has a record for each product associated with the opportunity. This table can be enhanced to capture more information if necessary. Note: For every opportunity generated, corresponding records are present in this table. This contains the list of products the opportunity is associated with. During a sales cycle, if products associated with an opportunity change, all corresponding records are updated.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>L_SALES_REP</td>
<td>This hierarchy/look-up table contains information about the Sales Organization. Currently, three levels of information are stored in Sales Organization: Sales Representative, Sales District, and Sales Region. By default, information is based on the following structure: • Sales Region - can have one or more Sales Districts • Sales District - can have one or more Sales Representatives</td>
<td>Sales Organization</td>
</tr>
<tr>
<td>L_ORDER</td>
<td>This hierarchy/look-up table contains information about orders. By default, it stores the discount indicator information. This shows whether the order had a discount associated with it or not. Note: For every closed opportunity, there will be an Order.</td>
<td>Order</td>
</tr>
<tr>
<td>L_CAL_DATE</td>
<td>This is the hierarchy/look-up table for Time at the Date Level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_MNTH</td>
<td>This is the hierarchy/look-up table for Time at the Month Level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_QTR</td>
<td>This is the hierarchy/look-up table for Time at the Quarterly level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_YEAR</td>
<td>This is the hierarchy/look-up table for Time at the Year Level.</td>
<td>Time</td>
</tr>
<tr>
<td>F_LEAD_STATUS</td>
<td>This fact table contains the lead and its status information, including Lead and Account ID, with Lead Status, Size, and Open Date. For every lead generated, a record is inserted in this table. Note: All information except LEAD_STATUS and LEAD_SIZE remain the same for the lead. The lead status and lead size are updated every time there is a change of status for the lead. No historical information is tracked in this table except the most recent lead status.</td>
<td>Lead</td>
</tr>
<tr>
<td>F_OPTY</td>
<td>This is the fact table containing all the Opportunity information. It has information on the product, the account, sales person, lead, date, and the size (absolute and weighted) associated with the opportunity. This information is stored for each status of the opportunity and tracked with the status open date. Note: Each time the opportunity status changes, a record is inserted in this table with the new status and date. The opportunity size and weighted opportunity size can also change during this status change.</td>
<td>Opportunity</td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
<td>Analysis Area</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
| F_OPTY_MNTH_MTH_HIST        | This is the fact table containing all the Opportunity information. It has information on the product, the account, sales person, lead, and the size associated with the opportunity. This information is stored for each opportunity for each month until the opportunity is either Closed or Lost. The status stored is that at the end of a month. If an opportunity changes status more than once, only the most recent one is taken into account.  
**Note**: There is a record for every opportunity for every month as long as the opportunity is not closed. For example, if an opportunity was opened in Jan 2001 and closed in April 2001, there will be a record for this opportunity for Jan, Feb, March, and April 2001. | Opportunity  |
| F_ORDER                    | This is the fact table containing all the Order information. The information is tracked at the level of each product associated with the order. It also has information on the lead, opportunity, sales person, account, and the date and amount associated with the order.  
**Note**: There is one record for each product in the order, and the order amount corresponds to the total amount for each product and not the Total Order.                                                                                           | Order        |
| F_SALES_REP_QTA            | This is the fact table containing all the Sales Representative Quota information. Each sales person has target sales to be achieved for each quarter. This table tracks the information for sales person quotas at the quarterly level.  
**Note**: There is a record for each sales person for each quarter. A new record is inserted when the next quarter begins.                                                                                                      | Sales Organization |
| L_QUARTER_YTD              | This table relates a given quarter to all the quarters within the same year, up to the given quarter.                                                                                                                                                                                                                                    | Time         |
| L_MONTH_YTD                | This table relates a given month to all the months within the same year, up to the given month.                                                                                                                                                                                                                                        | Time         |
Table column information

This section describes each physical table column used in SAM.

The Data Type column information in the following table reflects an Oracle database-specific format; depending on what database type you use, your data type may appear differently. You can use the Erwin file (see the SAM physical schema section above) to easily convert this information to another database type.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Table: L_ACCT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the account. An account is associated with a company.</td>
<td>This table includes all existing accounts.</td>
</tr>
<tr>
<td>COMPANY_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the company (B2B customer). A company has one or more accounts associated with it.</td>
<td>This field references the COMPANY_ID in L_COMPANY.</td>
</tr>
<tr>
<td>ACCT_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description for the account.</td>
<td></td>
</tr>
<tr>
<td><strong>Table: L_COMPANY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMPANY_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the company (B2B customer). A company has one or more accounts associated with it.</td>
<td>This should have the IDs of all the companies that are present in the system.</td>
</tr>
<tr>
<td>COMPANY_NAME</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>The name of the company/organization.</td>
<td></td>
</tr>
<tr>
<td>INDUS_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>Unique identifier for the industry. This is classified based on the way you operate your business.</td>
<td>A unique ID has to be assigned to any new industry.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>INDUS_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description for the industry.</td>
<td></td>
</tr>
<tr>
<td>NO_OF_EMP</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The number of employees present in the company. This can be an absolute number or a range.</td>
<td>By default, this field is not populated and no analysis is based on it.</td>
</tr>
</tbody>
</table>

**Table: L_LEAD**

<table>
<thead>
<tr>
<th>LEAD_ID</th>
<th>Double</th>
<th>NOT NULL</th>
<th>Yes/No</th>
<th>Unique identifier for the lead. Running sequence or system-generated number. This must have all the leads in the system.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD_SRCE_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>This uniquely identifies the source of the lead. This references LEAD_SRCE_ID in L_LEAD_SOURCE.</td>
<td></td>
</tr>
<tr>
<td>LEAD_STAT_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>This uniquely identifies the status of the lead. This references LEAD_STAT_ID in L_LEAD_STATUS.</td>
<td></td>
</tr>
<tr>
<td>LEAD_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>This uniquely identifies the different lead types. This references LEAD_TYPE_ID in L_LEAD_TYPE.</td>
<td></td>
</tr>
<tr>
<td>LEAD_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the lead.</td>
<td></td>
</tr>
<tr>
<td>LEAD_OPEN_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The date when the lead was opened.</td>
<td></td>
</tr>
<tr>
<td>LEAD_SIZE</td>
<td>Numeric (15,3)</td>
<td>NULL</td>
<td>No/No</td>
<td>The estimated size of the lead, based on input from the lead, such as available budget or based on additional information entered by the sales representative.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LEAD_SRCE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>This uniquely identifies the source of the lead. By default, the following are used: 1 - Campaign 2 - Partner 3 - Trade Show 4 - Website 5 - Internal This value set can be customized.</td>
<td>IDs of all possible lead sources that the system has and those that the organization might want to capture.</td>
</tr>
<tr>
<td>LEAD_SRCE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the lead source.</td>
<td></td>
</tr>
<tr>
<td>LEAD_STAT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>This uniquely identifies the status of the lead. By default, the following are used: 1 - No Response 2 - Qualified 3 - Rejected 4 - Closed This value set can be customized.</td>
<td>IDs of all the lead statuses that are captured by the system.</td>
</tr>
<tr>
<td>LEAD_STAT_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the lead status.</td>
<td></td>
</tr>
<tr>
<td>LEAD_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>This uniquely identifies the different lead types. By default, the following are used: 1 - New Business 2 - Existing Business</td>
<td>IDs of the different types of leads that are captured in the system.</td>
</tr>
<tr>
<td>LEAD_TYPE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the lead type.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>OPTY_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the opportunity. A qualified lead becomes an opportunity and is assigned to a sales representative.</td>
<td>This table includes all existing opportunities.</td>
</tr>
<tr>
<td>CURR_OPTY_STAT_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier of the current opportunity status. This should reflect the current status for the opportunity.</td>
<td>This references OPTY_STAT_ID in L_OPTY_STATUS (through a table alias).</td>
</tr>
<tr>
<td>PRIMARY_COMP_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier of the primary competitor for the opportunity. For each opportunity, only the primary competitor is tracked. If there are no competitors, the default is 0 - No Competitor.</td>
<td>This references COMPETITOR_ID in L_COMPETITOR.</td>
</tr>
<tr>
<td>OPTY_CLOSE_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The date when the opportunity was closed. This is the same as the order date.</td>
<td></td>
</tr>
<tr>
<td>OPTY_DESC</td>
<td>VarChar (60)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the opportunity.</td>
<td></td>
</tr>
<tr>
<td>OPTY_OPEN_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The date when the opportunity was opened.</td>
<td></td>
</tr>
<tr>
<td>OPTY_COMM</td>
<td>VarChar (255)</td>
<td>NOT NULL</td>
<td>No/No</td>
<td>Comments associated with the opportunity.</td>
<td></td>
</tr>
<tr>
<td>OPTY_EST_CL_DATE</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>No/No</td>
<td>The estimated date for when the opportunity will be closed.</td>
<td>This value should be the same as OPTY_CLOSE_DATE, once the opportunity has a status of Closed or Lost.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>OPTY_STAT_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier of the opportunity status. By default, the following are used: 1 - Top of the Funnel 2 - In the Funnel 3 - Commit 4 - Lost 5 - Closed</td>
<td>Referenced by Opportunity Status and Current Opportunity Status.</td>
</tr>
<tr>
<td>OPTY_STAT_DESC</td>
<td>VarChar (60)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the opportunity status.</td>
<td></td>
</tr>
<tr>
<td>OPTY_PROB</td>
<td>VarChar (30)</td>
<td>NOT NULL</td>
<td>No/No</td>
<td>Unique identifier of the close probability assigned to the opportunity status; also the textual description of the close probability (for example, 50%).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table: L_COMPETITOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPETITOR_ID</td>
</tr>
<tr>
<td>COMPETITOR_NAME</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table: L_SALES_PROD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROD_ID</td>
</tr>
<tr>
<td>PROD_GRP_ID</td>
</tr>
<tr>
<td>PROD_NAME</td>
</tr>
<tr>
<td>Column Name</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>PROD_DESC</td>
</tr>
<tr>
<td>PROD_GRP_DESC</td>
</tr>
</tbody>
</table>

Table: R_OPTY_PROD

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTY_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the opportunity. All opportunities should have one or more entries in this table.</td>
<td>This references OPTY_ID in L_OPTY.</td>
</tr>
<tr>
<td>PROD_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the product.</td>
<td>This references PROD_ID in L_SALES_PROD.</td>
</tr>
</tbody>
</table>

Table: L_SALES_REP

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALES_REP_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the sales representative or account executive. Each sales representative is tied to a sales district, which is tied to a sales region.</td>
<td>Currently this is the lowest level of a three-level hierarchy. This can be changed based on your sales structure.</td>
</tr>
<tr>
<td>SALES_DIST_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>Unique identifier for the sales district. This is the middle level in the sales organization hierarchy.</td>
<td>This can be changed based on your sales force structure.</td>
</tr>
<tr>
<td>SALES_REGN_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>Unique identifier for the sales region. This is the highest level in the sales organization hierarchy.</td>
<td>This can be changed based on your sales force structure.</td>
</tr>
<tr>
<td>SALES_DIST_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description for the sales district.</td>
<td></td>
</tr>
<tr>
<td>SALES_REGN_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description for the sales region.</td>
<td></td>
</tr>
</tbody>
</table>
### Table: L_ORDER

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for each order placed. A closed opportunity results in an order.</td>
<td>Unique for each order.</td>
</tr>
<tr>
<td>DISCOUNT_IND</td>
<td>VarChar (1)</td>
<td>NULL</td>
<td>No/No</td>
<td>Indicates whether a discount was associated with the order. The field is currently populated with: Y - Discount N - No discounts</td>
<td>By default, not used.</td>
</tr>
<tr>
<td>ORDER_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The date of the order. This is the same as the opportunity close date and should be the same date as in F_ORDER.</td>
<td>This references DATE_ID in L_CAL_DATE.</td>
</tr>
</tbody>
</table>

### Table: L_CAL_DATE

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE_ID</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Tracks all the dates in the system. All valid calendar dates for reporting purposes must be here.</td>
<td>Calendar date.</td>
</tr>
<tr>
<td>MNTH_ID</td>
<td>Integer (4)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the month; current format is YYYYMM and it is stored as an integer.</td>
<td>This references MNTH_ID in L_CAL_MNTH.</td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the quarter; current format is YYYYQ and it is stored as an integer.</td>
<td>This references QTR_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>----------------</td>
<td>---------</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the year; current format is YYYY and it is stored as an integer.</td>
<td>This references YEAR_ID in L_CAL_YEAR.</td>
</tr>
</tbody>
</table>

**Table: L_CAL_MNTH**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNTH_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the month; current format is YYYYMM and it is stored as an integer.</td>
<td>Calendar month in a specified format.</td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the quarter; current format is YYYYQ and it is stored as an integer.</td>
<td>This references QTR_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the year; current format is YYYY and it is stored as an integer.</td>
<td>This references YEAR_ID in L_CAL_YEAR.</td>
</tr>
<tr>
<td>MNTH_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the month.</td>
<td></td>
</tr>
<tr>
<td>PREV_MNTH_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The ID of the previous month. For example, for December 2001 it is November 2001. This is stored in the same format as the MNTH_ID (YYYYMM).</td>
<td>This references MNTH_ID in L_CAL_MNTH. This should be one month earlier than the corresponding MNTH_ID in that row.</td>
</tr>
</tbody>
</table>

**Table: L_CAL_QTR**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the quarter; current format is YYYYQ and it is stored as an integer.</td>
<td>Calendar quarter in a specified format.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the year; current format is YYYY and it is stored as an integer.</td>
<td>This references YEAR_ID in L_CAL_YEAR.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
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<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PREV_QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The ID of the previous quarter. For example, for Q4 2001 it is Q3 2001. This is stored in the same format as the QTR_ID (YYYYQ). This references QTR_ID in L_CAL_QTR. This should be one quarter earlier than the corresponding QTR_ID in that row.</td>
<td></td>
</tr>
<tr>
<td>QTR_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>No/No</td>
<td>Textual description of the quarter.</td>
<td></td>
</tr>
<tr>
<td>Table: L_CAL_YEAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the year. The current format is YYYY and is stored as an integer. Calendar year.</td>
<td>This references YEAR_ID in L_CAL_YEAR. This should be one year earlier than the corresponding YEAR_ID in that row.</td>
</tr>
<tr>
<td>PREV_YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The ID of the previous year. For example, for 2002 it is 2001. This is stored in the same format as the YEAR_ID (YYYY).</td>
<td>This references YEAR_ID in L_CAL_YEAR. This should be one year earlier than the corresponding YEAR_ID in that row.</td>
</tr>
<tr>
<td>Table: F_LEAD_STATUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the account. An account is associated with a company. This references ACCT_ID in L_ACCT.</td>
<td></td>
</tr>
<tr>
<td>LEAD_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the lead. This references LEAD_ID in L_LEAD.</td>
<td></td>
</tr>
<tr>
<td>LEAD_STAT_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>This uniquely identifies the status of the lead. This references LEAD_STAT_ID in L_LEAD_STATUS.</td>
<td></td>
</tr>
<tr>
<td>LEAD_OPEN_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>No/No</td>
<td>The date when the lead was opened.</td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------</td>
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<td>--------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LEAD_SIZE</td>
<td>Numeric (15,3)</td>
<td>NULL</td>
<td>No/No</td>
<td>The estimated size of the lead, based on inputs from the lead, such as available budget, or based on additional information entered by the sales representative.</td>
<td>This can be updated with the change in lead status or maintained the same at all stages.</td>
</tr>
<tr>
<td>OPTY_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the opportunity. A qualified lead becomes an opportunity and is assigned to a sales representative.</td>
<td>This references OPTY_ID in L_OPTY.</td>
</tr>
<tr>
<td>STAT_OPEN_DATE</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>The date from which the status is effective. For each change in the opportunity status, an entry for the opportunity is made into F_OPTY with that date as the status open date.</td>
<td>This references DATE_ID in L_CAL_DATE.</td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the account. An account is associated with a company.</td>
<td>This references the ACCT_ID in L_ACCT.</td>
</tr>
<tr>
<td>LEAD_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the lead.</td>
<td>This references the LEAD_ID in L_LEAD.</td>
</tr>
<tr>
<td>OPTY_STAT_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier of the opportunity status.</td>
<td>This references OPTY_STAT_ID in L_OPTY_STATUS.</td>
</tr>
<tr>
<td>SALES_REP_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the sales representative or account executive. Each sales representative is tied to a sales district, which is tied to a sales region.</td>
<td>This references SALES_REP_ID in L_SALES_REP.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>OPTY_SIZE</td>
<td>Double</td>
<td>NULL</td>
<td>No/No</td>
<td>The size or estimated revenue for the opportunity. This can change as the opportunity status changes. For example, the size can be 200,000 at &quot;Top of the Funnel;&quot; when it moves &quot;In the Funnel&quot; it can be 250,000; and so on.</td>
<td>This can change for each status.</td>
</tr>
<tr>
<td>WGHTE_OPTY_SIZE</td>
<td>Double</td>
<td>NULL</td>
<td>No/No</td>
<td>The Weighted Opportunity Size or the weighted estimated revenue, based on the Opportunity Size and the Opportunity Status. This field is precalculated and it is expected to be populated using ETL.</td>
<td>Currently the factor used for calculating this is:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Top of the Funnel: 0.1 * Opp Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• In the Funnel: 0.2 * Opp Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Commit: 0.8 * Opp. Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Closed: 1.0 * Opp. Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Lost: 0.0 * Opp. Size</td>
</tr>
</tbody>
</table>

**Table: F_OPTY_MNTH_HIST**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Primary Key/Foreign Key?</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNTH_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>The unique identifier for the month. This is a Time hierarchy table. The current format is YYYYMM and is stored as an integer.</td>
<td>This references MNTH_ID in L_CAL_MNTH. For a given opportunity that is still open at the end of the month, there should be an entry for it for that month.</td>
</tr>
<tr>
<td>OPTY_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the opportunity. A qualified lead becomes an opportunity and is assigned to a sales representative.</td>
<td>This references OPTY_ID in L_OPTY.</td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer (4)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the account. An account is associated with a company.</td>
<td>This references ACCT_ID in L_ACCT.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LEAD_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the lead.</td>
<td>This references LEAD_ID in L_LEAD.</td>
</tr>
<tr>
<td>OPTY_STAT_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier of the opportunity status.</td>
<td>This references OPTY_STAT_ID in L_OPTY_STATUS. For the given opportunity and month, it will only store the most recent status.</td>
</tr>
<tr>
<td>SALES_REP_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the sales representative or account executive.</td>
<td>This references SALES_REP_ID in L_SALES_REP. Should be the same as in F_OPTY.</td>
</tr>
<tr>
<td>OPTY_SIZE</td>
<td>Double</td>
<td>NULL</td>
<td>No/No</td>
<td>The size or estimated revenue for the opportunity. This can change as the</td>
<td>Should be the same as in F_OPTY for the given month and status.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>opportunity status changes. For example, the size can be 200,000 when it</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>is at &quot;Top of the Funnel;&quot; when it changes to &quot;In the Funnel&quot; it can be</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>250,000; and so on.</td>
<td></td>
</tr>
<tr>
<td>WGH_T_OPTY_SIZE</td>
<td>Double</td>
<td>NULL</td>
<td>No/No</td>
<td>The Weighted Opportunity Size or the weighted estimated revenue, based on the</td>
<td>Currently the factor used for calculating this is:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Opportunity Size and the Opportunity Status. This field is pre-calculated</td>
<td>• Top of the Funnel: 0.1 * Opp Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and is expected to be populated using ETL.</td>
<td>• In the Funnel: 0.2 * Opp Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Commit: 0.8 * Opp. Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Closed: 1.0 * Opp. Size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Lost: 0.0 * Opp. Size</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------</td>
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<td>--------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ORDER_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for each order placed. A closed opportunity results in an order.</td>
<td>This references ORDER_ID in L_ORDER.</td>
</tr>
<tr>
<td>PROD_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the sales product. This is the lowest level of the attribute in the Product hierarchy.</td>
<td>This references PROD_ID in L_SALES_PROD.</td>
</tr>
<tr>
<td>ACCT_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the account. An account is associated with a company.</td>
<td>This references ACCT_ID in L_ACCT.</td>
</tr>
<tr>
<td>LEAD_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the lead.</td>
<td>This references LEAD_ID in L_LEAD.</td>
</tr>
<tr>
<td>OPTY_ID</td>
<td>Double</td>
<td>NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the opportunity. A qualified lead becomes an opportunity and is assigned to a sales representative.</td>
<td>This references OPTY_ID in L_OPTY.</td>
</tr>
<tr>
<td>ORDER_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>No/Yes</td>
<td>The date of the order. This is the same as the opportunity close date.</td>
<td>This references DATE_ID in L_CAL_DATE. This should be the same date as in L_ORDER.</td>
</tr>
<tr>
<td>SALES_REP_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the sales representative or account executive. Each sales representative is tied to a sales district that is tied to a sales region.</td>
<td>This references SALES_REP_ID in L_SALES_REP. This should be the same as in F_OPTY.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Primary Key/Foreign Key</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
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<td>-----------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ORDER_AMT</td>
<td>Numeric (15,3)</td>
<td>NULL</td>
<td>No/No</td>
<td>The amount associated with each product that was part of the order. This information is tracked at the PRODUCT level, not at the ORDER level. An order can have one or more products associated with it.</td>
<td>This is the amount for the particular product purchased as part of the order.</td>
</tr>
<tr>
<td>ORDER_UNITS</td>
<td>Numeric (15,3)</td>
<td>NULL</td>
<td>No/No</td>
<td>The number of units sold for each product in the order.</td>
<td>By default, this field is not populated and no analysis is based on it.</td>
</tr>
</tbody>
</table>

Table: F_SALES_REP_QTA

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the quarter. This is a Time hierarchy table. The current format is YYYYQ.</td>
<td>This references QTR_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>SALES_REP_ID</td>
<td>Double</td>
<td>NOT NULL</td>
<td>Yes/Yes</td>
<td>Unique identifier for the sales representative or account executive. Each sales representative is tied to a sales district, which is tied to a sales region.</td>
<td>This references SALES_REP_ID in L_SALES_REP.</td>
</tr>
<tr>
<td>SALES_REP_QTA</td>
<td>Numeric (15,3)</td>
<td>NULL</td>
<td>No/No</td>
<td>The target or quota that is assigned to a sales representative. This quota is assigned at a quarterly level.</td>
<td></td>
</tr>
</tbody>
</table>

Table: L_MONTH_YTD

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed</th>
<th>Primary Key/Foreign Key</th>
<th>Column Comment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNTH_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the month; the current format is YYYYMM and is stored as an integer.</td>
<td>This references MNTH_ID in L_CAL_MONTH.</td>
</tr>
<tr>
<td>YTD_MNTH_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the month; the current format is YYYYMM and is stored as an integer.</td>
<td>For a given MNTH_ID, this field includes all months of the year up to the given month.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Primary Key/Foreign Key?</td>
<td>Column Comment</td>
<td>Remarks</td>
</tr>
<tr>
<td>-------------</td>
<td>------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>No/Yes</td>
<td>Unique identifier for the quarter; the current format is YYYYQ and is stored as an integer.</td>
<td>This references QTR_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>YTD_QTR_ID</td>
<td>Integer (4)</td>
<td>NOT NULL</td>
<td>Yes/No</td>
<td>Unique identifier for the quarter; the current format is YYYYQ and is stored as an integer.</td>
<td>For a given QTR_ID, this field includes all the quarters of the year up to the given quarter.</td>
</tr>
</tbody>
</table>
Logical Data Model

Introduction

This appendix presents the logical data model on which the Human Resources Analysis Module (HRAM) is built.

This appendix provides a description for

- business hierarchies, including attributes and relationships, and their metadata objects definitions
- module facts

For a general description, basic procedures, and additional details about understanding and working with HRAM’s logical data model, see About the logical data model in Chapter 1, Introduction.

Information can also be found by accessing each attribute’s definition using the Attribute Editor. The attributes can be found in the Schema Objects/Attributes folder. Double-click an attribute to open the Attribute Editor.
Prerequisites

This appendix assumes you have prior experience with logical data modeling and creating business intelligence applications using MicroStrategy technology.

HRAM logical schema

The following diagram represents the logical model shipped with HRAM. The logical schema diagram is available in an Erwin file, located in Program Files/MicroStrategy/Analytics Modules/Hram/Hram.erl.
Business hierarchies

HRAM is designed to provide in-depth knowledge of corporate human resources information. HRAM accomplishes this partly through a set of attributes (business concepts) and their relationships to each other. These attributes are arranged in a specific sequence according to a business structure, in an arrangement called a hierarchy.

The key business hierarchies in the human resources process are

- Employee: Employee, Profile (Age Range, Gender, Nationality, Ethnicity, Education and Degree Type, Marital Status), Hire Date, Leave Date, Date of Birth, Title, Address, Minority Group, Immigration Status, Clearance Status, Position Status, Department, Division, Location, Region, Identification Number, Number of years of experience, Salary Range Level, and Supervisor Qualification: Qualifications, Qualification Type, and Level

- Compensation: Compensation Type or Component

- Benefit: Benefit Type and Component

- Position: Job Open Date, Job Close Date, Position, and Job Code

- Survey Field

- Leave Reason

- Time Off Type

- Time: Year, Quarter, Month, and Day

Each hierarchy listed previously is described in detail in the following sections. For additional information on the hierarchies, see the MicroStrategy project definitions in HRAM’s Schema Objects/Attributes and Schema Objects/Facts folders. From one of these folders, double-click an attribute or fact to view definitions, properties, source tables, and so on.
Employee and Contractor hierarchies

This hierarchy represents the employee, and is subdivided into Employee and Contractor. In the logical data model, Contractor is available within the Employee hierarchy.

Employee hierarchy

This hierarchy has the largest number of attributes in the model. Employee is the lowest level attribute and all other attributes are either a characteristic or a parent of Employee. The attributes and relationships, as well as main parent branches, can be seen in the following figure.

<table>
<thead>
<tr>
<th>Birth Date</th>
<th>Hire Date</th>
<th>Leave Date</th>
<th>Immigration Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Recruiting Source</td>
<td>Position Status / FTE Coefficient</td>
<td>Clearance</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Title</td>
<td>Work Experience</td>
<td>Exempt Status</td>
</tr>
<tr>
<td>Minority Group</td>
<td>Level</td>
<td>Location Transfer Department Transfer</td>
<td>Current / Historical Status</td>
</tr>
</tbody>
</table>

[Diagram of Employee hierarchy with attributes and relationships]
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>Name of the individual working for the company, receiving salary and benefits in return.</td>
<td>John Smith.</td>
</tr>
<tr>
<td>Profile</td>
<td>Group of attributes that define the personal profile of an employee. See the following Profile table.</td>
<td>Age, nationality, and so on. See the following Profile table.</td>
</tr>
<tr>
<td>Address</td>
<td>Group of attributes that define the home address of an employee. See the following Address table.</td>
<td>Street, City, and so on. See the following Address table.</td>
</tr>
<tr>
<td>Department / Previous Department</td>
<td>Employee’s company department.</td>
<td>Production consulting, pre-sales consulting, finance administration, HR administration, and so on.</td>
</tr>
<tr>
<td>Division / Previous Division</td>
<td>Employee’s division.</td>
<td>Administration, consulting, and so on.</td>
</tr>
<tr>
<td>Location / Previous Location</td>
<td>Employee’s work site.</td>
<td>22180-1234, 22182-2345 Vienna, McLean, New York City, Washington DC, and so on.</td>
</tr>
<tr>
<td>Region / Previous Region</td>
<td>This is a parent of Location and belongs to the employee’s Geography hierarchy.</td>
<td>Virginia, California, and so on.</td>
</tr>
<tr>
<td>Immigration Status</td>
<td>Employee’s immigration status.</td>
<td>None, H1B Visa, Green Card, and so on.</td>
</tr>
<tr>
<td>Clearance Status</td>
<td>Employee’s security clearance status.</td>
<td>Top-secret, secret, none, and so on.</td>
</tr>
<tr>
<td>Work Experience</td>
<td>Employee’s work experience (in years) within relevant fields prior to hire date.</td>
<td>1, 2, 3 and so on.</td>
</tr>
<tr>
<td>Minority Group</td>
<td>Employee’s minority group.</td>
<td>Veteran, disabled, none, more than 1, and so on.</td>
</tr>
</tbody>
</table>
| Position Status / FTE Coefficient | Status of employee’s position. A coefficient can be used to further clarify Position Status:  
  • 1 if full-time.  
  • Between 0 and 1 if part-time. | Full-time, part-time 0, 0.5, 0.8, 1                                      |
<p>| Level                            | Employee’s general job level (not a specific title).                        | Executive, manager, engineer, and so on.                               |</p>
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hire Date</td>
<td>Employee’s start date with the company.</td>
<td>12/24/2002</td>
</tr>
<tr>
<td>Leave Date</td>
<td>Employee’s last date with the company.</td>
<td>12/24/2003</td>
</tr>
<tr>
<td>Title</td>
<td>Employee’s job title.</td>
<td>Product Manager, Program Manager, and so on.</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Name of the employee's supervisor.</td>
<td>David Smith</td>
</tr>
<tr>
<td>Birth Date</td>
<td>Date of birth of the employee.</td>
<td>12/24/1980</td>
</tr>
<tr>
<td>ID</td>
<td>Employee identification number.</td>
<td>1234, 1225, and so on.</td>
</tr>
<tr>
<td>Employee Status</td>
<td>Indicates whether the employee is active/hired, terminated voluntarily, or terminated involuntarily.</td>
<td>Active (hired), Inactive (voluntarily departed, involuntarily departed).</td>
</tr>
<tr>
<td>Recruiting Source</td>
<td>Source used to recruit and hire the employee.</td>
<td>Head-hunter, referral, job posting on Internet, job posting in Newspaper, and so on.</td>
</tr>
<tr>
<td>Tenure</td>
<td>Length of employment.</td>
<td>1 month, 1 year, 5 years, and so on.</td>
</tr>
<tr>
<td>Location Transfer</td>
<td>Flag indicating whether the employee had a location transfer during a specific month.</td>
<td>0, 1</td>
</tr>
<tr>
<td>Department Transfer</td>
<td>Flag indicating whether the employee had a department transfer during a specific month.</td>
<td>0, 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Profile Attribute Group</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Range</td>
<td>Age range for the employee.</td>
<td>18-30, 31-40, 41-50, 50+</td>
</tr>
<tr>
<td>Gender</td>
<td>Gender of the employee.</td>
<td>F, M</td>
</tr>
<tr>
<td>Nationality</td>
<td>Nationality of the employee.</td>
<td>U.S. citizen, Italian, and so on.</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Ethnicity or race of the employee, if known.</td>
<td>Caucasian, Asian, African, and so on</td>
</tr>
<tr>
<td>Education</td>
<td>Education level of the employee.</td>
<td>Doctorate, Master, and so on</td>
</tr>
<tr>
<td>Degree Type</td>
<td>Education degree type of the employee, if any.</td>
<td>Computer Science, Finance, and so on</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Marital status of the employee.</td>
<td>Single, married</td>
</tr>
</tbody>
</table>
The detailed definition of each attribute in the MicroStrategy metadata listed previously is shown in the following tables.

### Address Attribute Group

<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Employee's street address.</td>
</tr>
<tr>
<td>ZIP Code</td>
<td>Employee's ZIP Code</td>
</tr>
<tr>
<td>Phone Number</td>
<td>Employee's home phone number.</td>
</tr>
<tr>
<td>City</td>
<td>Employee's city.</td>
</tr>
<tr>
<td>State</td>
<td>Employee's state or region.</td>
</tr>
<tr>
<td>Country</td>
<td>Employee's country.</td>
</tr>
</tbody>
</table>

### Employee

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMPLOYEE_ID</td>
<td>L_EMPLOYEE</td>
<td>F_BENEFIT_QTR, F_BONUS_PTNTL, F_COMP_MONTH, F_EMP_QLFN, F_EMP_HIST, F_EMP_PREV_HIST, F_OVERTIME, F_PERF, F_TIME_OFF, R_EMP_ADDRESS, R_EMP_DEMO</td>
</tr>
<tr>
<td>DESC</td>
<td>EMPLOYEE_DESC</td>
<td>L_EMPLOYEE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Age Range</td>
<td>Many-to-one</td>
<td>R_EMP_DEMO</td>
</tr>
<tr>
<td>None</td>
<td>Birth Date</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>City</td>
<td>Many-to-one</td>
<td>R_EMP_ADDRESS</td>
</tr>
<tr>
<td>None</td>
<td>Clearance Status</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Country</td>
<td>Many-to-one</td>
<td>R_EMP_ADDRESS</td>
</tr>
<tr>
<td>None</td>
<td>Current Status</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Degree Type</td>
<td>Many-to-one</td>
<td>R_EMP_DEMO</td>
</tr>
<tr>
<td>Children</td>
<td>Parents</td>
<td>Relationship Type</td>
<td>Table</td>
</tr>
<tr>
<td>----------</td>
<td>----------------</td>
<td>-------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>None</td>
<td>Department</td>
<td>Many-to-one</td>
<td>L_EMP_HIST</td>
</tr>
<tr>
<td></td>
<td>Transfer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>Education</td>
<td>Many-to-one</td>
<td>R_EMP_DEMO</td>
</tr>
<tr>
<td>None</td>
<td>Ethnicity</td>
<td>Many-to-one</td>
<td>R_EMP_DEMO</td>
</tr>
<tr>
<td>None</td>
<td>Exempt Status</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Gender</td>
<td>Many-to-one</td>
<td>R_EMP_DEMO</td>
</tr>
<tr>
<td>None</td>
<td>Hire Date</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>ID</td>
<td>One-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Immigration</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td></td>
<td>Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>Leave Date</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Level</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Location</td>
<td>Many-to-one</td>
<td>L_EMP_HIST</td>
</tr>
<tr>
<td></td>
<td>Transfer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>Marital Status</td>
<td>Many-to-one</td>
<td>R_EMP_DEMO</td>
</tr>
<tr>
<td>None</td>
<td>Minority Group</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Nationality</td>
<td>Many-to-one</td>
<td>R_EMP_DEMO</td>
</tr>
<tr>
<td>None</td>
<td>Phone Number</td>
<td>Many-to-one</td>
<td>R_EMP_ADDRESS</td>
</tr>
<tr>
<td>None</td>
<td>Position Status</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Recruiting</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td></td>
<td>Source</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>State</td>
<td>Many-to-one</td>
<td>R_EMP_ADDRESS</td>
</tr>
<tr>
<td>None</td>
<td>Street</td>
<td>Many-to-one</td>
<td>R_EMP_ADDRESS</td>
</tr>
<tr>
<td>None</td>
<td>Supervisor</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Title</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Work Experience</td>
<td>Many-to-one</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>None</td>
<td>Zip Code</td>
<td>Many-to-one</td>
<td>R_EMP_ADDRESS</td>
</tr>
</tbody>
</table>
### Tenure

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SENIORITY</td>
<td>F_EMP_HIST</td>
<td>None</td>
</tr>
</tbody>
</table>

### Level

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_LEVEL_ID</td>
<td>L_EMP_LEVEL</td>
<td>F_EMP_LEVEL, L_EMPLOYEE</td>
</tr>
<tr>
<td>DESC</td>
<td>EMP_LEVEL_DESC</td>
<td>L_EMP_LEVEL</td>
<td>None</td>
</tr>
</tbody>
</table>

**Children** | **Parents** | **Relationship Type** | **Table**
---|---|---|---
Employee | None | One-to-many | L_EMPLOYEE

### City

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_CITY</td>
<td>R_EMP_ADDRESS</td>
<td>None</td>
</tr>
</tbody>
</table>

**Children** | **Parents** | **Relationship Type** | **Table**
---|---|---|---
Employee | None | One-to-many | R_EMP_ADDRESS

### Country

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_CONTRY</td>
<td>R_EMP_ADDRESS</td>
<td>None</td>
</tr>
</tbody>
</table>

**Children** | **Parents** | **Relationship Type** | **Table**
---|---|---|---
Employee | None | One-to-many | R_EMP_ADDRESS
### Phone Number

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_PHONE_NUM</td>
<td>R_EMP_ADDRESS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>R_EMP_ADDRESS</td>
</tr>
</tbody>
</table>

### State

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_STATE</td>
<td>R_EMP_ADDRESS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>R_EMP_ADDRESS</td>
</tr>
</tbody>
</table>

### Street

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_STREET</td>
<td>R_EMP_ADDRESS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
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<td>One-to-many</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

### Position Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_PSTN_STS_ID</td>
<td>L_EMP_PSTN_STS</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>DESC</td>
<td>EMP_PSTN_STS_DESC</td>
<td>L_EMP_PSTN_STS</td>
<td>None</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>
### Recruiting Source

<table>
<thead>
<tr>
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<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>RCRTNG_SOURCE_ID</td>
<td>L_RCRTNG_SOURCE</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>DESC</td>
<td>RCRTNG_SOURCE_DESC</td>
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<table>
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<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

### Supervisor

<table>
<thead>
<tr>
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<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SUPERVISOR_ID, EMPLOYEE_ID</td>
<td>L_EMPLOYEE, L_EMP_SUPERVISOR</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>EMPLOYEE_DESC</td>
<td>L_EMP_SUPERVISOR</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

### Title

<table>
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<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_TITLE_ID, CNTR_TILE_ID</td>
<td>L_EMP_TITLE, L_CONTRACTOR</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>DESC</td>
<td>EMP_TITLE_DESC</td>
<td>L_EMP_TITLE</td>
<td>None</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>
### Work Experience (Years)

<table>
<thead>
<tr>
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<th>Form Expression</th>
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<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

### Department Transfer

<table>
<thead>
<tr>
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<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DPTM_TRANSFER_FLG</td>
<td>F_EMP_HIST</td>
<td>F_EMP_PREV_HIST</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

### Location Transfer

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LOC_TRANSFER_FLG</td>
<td>F_EMP_HIST</td>
<td>F_EMP_PREV_HIST</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

### Contractor hierarchy

The Contractor hierarchy is available within the Employee hierarchy. In HRAM, the Contractor hierarchy shares the following parents with Employee:

- Department
- Division
• Location
• Region
• Title

In other scenarios, the Contractor hierarchy can also share other parents with Employee, such as Supervisor. The attributes and relationships in the following figure represent the Contractor hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor</td>
<td>Individual working for the company under a time-term contract, receiving salary in return.</td>
<td>John Smith</td>
</tr>
<tr>
<td>Department</td>
<td>Contractor’s department.</td>
<td>Production Consulting, Pre-sales Consulting</td>
</tr>
<tr>
<td>Division</td>
<td>Contractor’s division.</td>
<td>Administration, Consulting</td>
</tr>
<tr>
<td>Location</td>
<td>Contractor’s work site.</td>
<td>Washington DC</td>
</tr>
<tr>
<td>Region</td>
<td>Contractor’s region.</td>
<td>Virginia</td>
</tr>
<tr>
<td>Contract Activity Status</td>
<td>Status of the contract.</td>
<td>Active, Inactive</td>
</tr>
<tr>
<td>Title</td>
<td>Contractor’s job title.</td>
<td>Consultant, Product Manager, Program Manager, and so on</td>
</tr>
</tbody>
</table>
The detailed definition of each attribute in the MicroStrategy metadata listed previously is shown in the following tables.

### Contractor

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Start Date</td>
<td>Contract start date.</td>
<td>12/24/2002</td>
</tr>
<tr>
<td>Contract Expiration Date</td>
<td>Contract end date.</td>
<td>12/24/2003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Expression</td>
<td>Lookup Table</td>
<td>Other Tables</td>
</tr>
<tr>
<td>ID</td>
<td>CONTRACTOR_ID</td>
<td>L_CONTRACTOR</td>
</tr>
<tr>
<td>DESC</td>
<td>CONTRACTOR_DESC</td>
<td>L_CONTRACTOR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Contractor Activity</td>
<td>Many-to-one</td>
<td>L_CONTRACTOR</td>
</tr>
<tr>
<td>None</td>
<td>Contract Expiration Date</td>
<td>Many-to-one</td>
<td>L_CONTRACTOR</td>
</tr>
<tr>
<td>None</td>
<td>Contract Start Date</td>
<td>Many-to-one</td>
<td>L_CONTRACTOR</td>
</tr>
<tr>
<td>None</td>
<td>Contract End Date</td>
<td>Many-to-one</td>
<td>L_CONTRACTOR</td>
</tr>
<tr>
<td>None</td>
<td>Department</td>
<td>Many-to-one</td>
<td>L_CONTRACTOR</td>
</tr>
<tr>
<td>None</td>
<td>Location</td>
<td>Many-to-one</td>
<td>L_CONTRACTOR</td>
</tr>
</tbody>
</table>

### Contract Activity

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Expression</td>
<td>Lookup Table</td>
<td>Other Tables</td>
</tr>
<tr>
<td>ID</td>
<td>EMP_STS_ID</td>
<td>L_CNTR_STS</td>
</tr>
<tr>
<td>CNTR_ACTIVITY</td>
<td>L_CONTRACTOR</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>EMP_STS_DESC</td>
<td>L_CNTR_STS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CONTRACTOR</td>
</tr>
</tbody>
</table>
### Contract Expiration Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CONTRACT_END_DATE</td>
<td>L_CONTRACTOR</td>
<td>None</td>
</tr>
</tbody>
</table>

**Children** | **Parents** | **Relationship Type** | **Table**  
Contractor   | None        | One-to-many            | L_CONTRACTOR

### Contract Start Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CONTRACT_START_DATE</td>
<td>L_CONTRACTOR</td>
<td>None</td>
</tr>
</tbody>
</table>

**Children** | **Parents** | **Relationship Type** | **Table**  
Contractor   | None        | One-to-many            | L_CONTRACTOR

### Compensation hierarchy

This hierarchy represents the types of monetary compensation paid to employees. This hierarchy consists of a single attribute.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation Item</td>
<td>Type of monetary compensation given to the employee per month. See examples for typical values for this attribute.</td>
<td>Base salary, regular bonus, allowance, and so on.</td>
</tr>
</tbody>
</table>

The detailed definition of the attribute in the MicroStrategy metadata listed previously is shown in the following table.
Compensation Item

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>COMP_TYPE_ID</td>
<td>L_COMP_TYPE</td>
<td>F_COMP_MONTH</td>
</tr>
<tr>
<td>DESC</td>
<td>COMP_TYPE_DESC</td>
<td>L_COMP_TYPE</td>
<td>None</td>
</tr>
</tbody>
</table>

Benefit hierarchy

This hierarchy represents the benefits available to employees. The attributes and relationships in the following figure represent the Benefit hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
| Benefit Type | General type of benefit offered to employees; see the examples for typical values of the different benefit types. | 1. Health Care  
2. Insurance  
3. Time Off  
4. FSA |
| Benefit   | Specific benefit offered to employees; see the examples for typical values for this sub-type. | 1. Dental, prescription  
2. Life insurance, disability insurance  
3. Number of vacation days, number of sick days, and so on. |

The detailed definition of each attribute in the MicroStrategy metadata listed previously is shown in the following tables.
**Benefit**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>BENEFIT_ID</td>
<td>L_BENEFIT</td>
<td>F_BENEFIT_QTR</td>
</tr>
<tr>
<td>DESC</td>
<td>BENEFIT_DESC</td>
<td>L_BENEFIT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Benefit Type</td>
<td>Many-to-one</td>
<td>L_BENEFIT</td>
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</table>

**Benefit Type**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
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<td>L_BENEFIT</td>
</tr>
<tr>
<td>DESC</td>
<td>BENEFIT_TYPE_DESC</td>
<td>L_BENEFIT_TYPE</td>
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</tr>
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<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit</td>
<td>None</td>
<td>One-to-many</td>
<td>L_BENEFIT</td>
</tr>
</tbody>
</table>

**Position hierarchy**

This hierarchy represents the open positions available. For common attributes, it can be built using the structure used in Employee. The attributes and relationships in the following figure represent the Position hierarchy.

![Position hierarchy diagram]

---

The detailed definition of each attribute in the MicroStrategy metadata listed previously is shown in the following tables.

### Job Code

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>JOB_CODE_ID</td>
<td>L_JOB_CODE</td>
<td>F_POSITION</td>
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</table>
## Job Clearance

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
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<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
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<td>L_JOB_CLEARANCE_ID</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>JOB_CLEARANCE_ID</td>
<td>L_JOB_CODE</td>
<td></td>
</tr>
<tr>
<td>DESC</td>
<td>EMP_CLEARANCE_DESC</td>
<td>L_JOB_CLEARANCE_ID</td>
<td>None</td>
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</table>

## Job Close Date

<table>
<thead>
<tr>
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<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>JOB_CLOSE_DATE</td>
<td>L_JOB_CODE</td>
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<table>
<thead>
<tr>
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<th>Relationship Type</th>
<th>Table</th>
</tr>
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<tbody>
<tr>
<td>L_JOB_CODE</td>
<td>Job Code</td>
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<td>None</td>
</tr>
</tbody>
</table>
## Job Open Date

<table>
<thead>
<tr>
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<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>JOB_OPEN_DATE</td>
<td>L_JOB_CODE</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Code</td>
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<td>L_JOB_CODE</td>
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</table>

## Job Department

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>JOB_DPTM_ID, EMP_DPTM_ID</td>
<td>L_JOB_CODE</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>EMP_DPTM_DESC</td>
<td>L_JOB_DPTM</td>
<td>None</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Code</td>
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<td>One-to-many</td>
<td>L_JOB_CODE</td>
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</tbody>
</table>

## Job Location

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>JOB_LOCATION_ID, EMP_LOCATION_ID</td>
<td>L_JOB_CODE</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>EMP_LOCATION_DESC</td>
<td>L_JOB_LOCATION</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Code</td>
<td>None</td>
<td>One-to-many</td>
<td>L_JOB_CODE</td>
</tr>
</tbody>
</table>

## Job Work Experience

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
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<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>JOB_WORK_EXP</td>
<td>L_JOB_CODE</td>
<td>None</td>
</tr>
<tr>
<td>Children</td>
<td>Parents</td>
<td>Relationship Type</td>
<td>Table</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>-------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Job Code</td>
<td>None</td>
<td>One-to-many</td>
<td>L_JOB_CODE</td>
</tr>
</tbody>
</table>

### Position

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>POSITION_ID</td>
<td>L_POSITION</td>
<td>L_JOB_CODE</td>
</tr>
<tr>
<td>DESC</td>
<td>POSITION_DESC</td>
<td>L_POSITION</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Code</td>
<td>None</td>
<td>One-to-many</td>
<td>L_JOB_CODE</td>
</tr>
</tbody>
</table>

### Job Open Reason

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>JOB_OPEN_RSN_ID</td>
<td>L_JOB_OPEN_RSN</td>
<td>L_JOB_CODE</td>
</tr>
<tr>
<td>DESC</td>
<td>JOB_OPEN_RSN_DESC</td>
<td>L_JOB_OPEN_RSN</td>
<td>None</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Code</td>
<td>None</td>
<td>One-to-many</td>
<td>L_JOB_CODE</td>
</tr>
</tbody>
</table>

### Job Close Reason

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>JOB_CLOSE_RSN_ID</td>
<td>L_JOB_CLOSE_RSN</td>
<td>L_JOB_CODE</td>
</tr>
<tr>
<td>DESC</td>
<td>JOB_CLOSE_RSN_DESC</td>
<td>L_JOB_CLOSE_RSN</td>
<td>None</td>
</tr>
</tbody>
</table>
Time Off hierarchy

This hierarchy represents the different types of time off that an employee can accrue and use. This hierarchy consists of a single attribute.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Off Type</td>
<td>Employee’s type of time off.</td>
<td>Vacation, sick, unpaid leave, and so on.</td>
</tr>
</tbody>
</table>

The detailed definition of the attribute in the MicroStrategy metadata listed previously is shown in the following table.

### Time Off Type

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>TIME_OFF_TYPE_ID</td>
<td>L_TIME_OFF_TYPE</td>
<td>F_TIME_OFF</td>
</tr>
<tr>
<td>DESC</td>
<td>TIME_OFF_TYPE_DESC</td>
<td>L_TIME_OFF_TYPE</td>
<td>None</td>
</tr>
</tbody>
</table>

Survey Field hierarchy

This hierarchy represents the survey questions (fields) that an employee is asked to respond to. This hierarchy consists of a single attribute.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey Field</td>
<td>Set of company characteristics on which the employee is asked to give a satisfaction score; they can be accompanied by a description.</td>
<td>Work atmosphere, quality of work, salary</td>
</tr>
</tbody>
</table>
The detailed definition of the attribute in the MicroStrategy metadata listed previously is shown in the following table.

### Survey Field

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SURVEY_FIELD_ID</td>
<td>L_SURVEY_FIELDS</td>
<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>SURVEY_FIELD_DESC</td>
<td>L_SURVEY_FIELDS</td>
<td>None</td>
</tr>
</tbody>
</table>

### Qualification hierarchy

For HRAM, this hierarchy represents the different job qualifications related to vacant positions. More detailed analysis can be done with this hierarchy, depending on specific customer needs. The attributes and relationships in the following figure represent the Qualification hierarchy.

The detailed definition of each attribute in the MicroStrategy metadata listed previously is shown in the following tables.
Qualification Type

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>QLFN_TYPE_ID</td>
<td>L_QLFN_TYPE</td>
<td>L_QLFN</td>
</tr>
<tr>
<td>DESC</td>
<td>QLFN_TYPEDESC</td>
<td>L_QLFN_TYPE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualification</td>
<td>None</td>
<td>One-to-many</td>
<td>L_QLFN</td>
</tr>
</tbody>
</table>

Qualification

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>QLFN_ID</td>
<td>L_QLFN</td>
<td>F_EMP_QLFN</td>
</tr>
<tr>
<td>DESC</td>
<td>QLFN_DESC</td>
<td>L_QLFN</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Qualification</td>
<td>Many-to-one</td>
<td>L_QLFN</td>
</tr>
</tbody>
</table>

Leave Reason hierarchy

This hierarchy represents an employee’s reason for leaving the company or the reason for employee termination. This hierarchy includes both voluntary and involuntary end-of-employment reasons. This hierarchy consists of a single attribute.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leave Reason</td>
<td>Reason why the employee left the company; for voluntary end-of-employment, more details may be obtained though an exit interview.</td>
<td>Retirement, RIF, better career opportunity, personal/family reasons, relocation, and so on.</td>
</tr>
</tbody>
</table>

The detailed definition of the attribute in the MicroStrategy metadata listed previously is shown in the following table.
Leave Reason

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LEAVE_RSN_ID</td>
<td>L_LEAVE_RSN</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>DESC</td>
<td>LEAVE_RSN_DESC</td>
<td>L_LEAVE_RSN</td>
<td>None</td>
</tr>
</tbody>
</table>

Time hierarchy

This hierarchy represents the calendar time used for tracking employee- and job-related processes. The attributes and relationships in the following figure represent the Time hierarchy.

```
  Year
    Q1
      Q2
        Q3
          Q4
            Month
              Date
```

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Calendar date that is used to track the different processes and also used for entries in to the general ledger.</td>
<td>01/01/03</td>
</tr>
<tr>
<td>Month</td>
<td>Calendar month.</td>
<td>Jan 2003</td>
</tr>
<tr>
<td>Quarter</td>
<td>A period of 3 months.</td>
<td>Q1 2003</td>
</tr>
<tr>
<td>Year</td>
<td>Calendar year.</td>
<td>2002, 2003</td>
</tr>
</tbody>
</table>

The detailed definition of each attribute in the MicroStrategy metadata listed previously is shown in the following tables.
## Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DATE_ID</td>
<td>L_CAL_DATE</td>
<td>F_EMP_QLFN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Month</td>
<td>Many-to-one</td>
<td>L_CAL_DATE</td>
</tr>
</tbody>
</table>

## Month

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>MONTH_ID</td>
<td>L_CAL_MONTH</td>
<td>L_CAL_DATE, F_POSITION, F_EMP_HIST</td>
</tr>
<tr>
<td>DESC</td>
<td>MONTH_DESC</td>
<td>L_CAL_MONTH</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_DATE</td>
</tr>
<tr>
<td>None</td>
<td>Quarter</td>
<td>Many-to-one</td>
<td>L_CAL_MONTH</td>
</tr>
</tbody>
</table>

## Quarter

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>QTR_ID</td>
<td>L_CAL_QTR</td>
<td>L_CAL_DATE, L_CAL_MONTH, L_CAL_QTR, F_BENEFIT_QTR</td>
</tr>
<tr>
<td>DESC</td>
<td>QTR_DESC</td>
<td>L_CAL_QTR</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_MONTH</td>
</tr>
<tr>
<td>None</td>
<td>Year</td>
<td>Many-to-one</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>
This section describes the facts used in HRAM.

The main facts groups are

- **Headcounts**: Number of employees, number of voluntarily departed employees, number of involuntarily departed employees, attrition rate, hiring rate, number of new employees or new hires

- **Position**: Number of vacancies, number of resumes received, number of interviewed candidates, number of offers sent, number of offers accepted, number of offers rejected

- **Compensation**: Compensation cost, compensation cost contribution, average compensation cost, salary, bonus, overtime cost, planned compensation

- **Benefits**: Company cost, employee cost, number of participants, number of enrolled employees, participation rate, average company cost per enrolled employee

- **Time Off**: Number of accrued days, number of used days, number of available days, open days or number of days to fill position
• Qualifications: Number of qualified employees, qualification level

• Performance Score, Tenure, Satisfaction Score

For additional details, see the MicroStrategy project definitions in the Schema Objects/Attributes and Schema Objects/Facts folders. Double-click any attribute or fact to view definitions, properties, source tables, and so on.

Employee, Level, and Contractor facts

FTE Coefficient

This fact is used to calculate the number of Full Time Equivalents.

Fact: FTE Coefficient

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMP_FTE_COEF</td>
<td>Automatic</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

Tenure

This fact is used to calculate the maximum tenure of departed employees.

Fact: Tenure

Comment: None
Definition:

### Department Transfer

This fact is used to calculate the total number of department transfers.

**Fact:** Department Transfer

**Comment:** None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>SENIORITY</td>
<td>Automatic</td>
<td>F_EMP_HIST</td>
</tr>
</tbody>
</table>

### Location Transfer

This fact is used to calculate the total number of location transfers.

**Fact:** Location Transfer

**Comment:** None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPTM_TRANSFER_FLG</td>
<td>Automatic</td>
<td>F_EMP_HIST</td>
</tr>
</tbody>
</table>

### Birth Date

Birth Date, Hire Date, and Leave Date are useful as functions arguments.

**Fact:** Birth Date

**Comment:** None
Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMP_BIRTH_DATE</td>
<td>Automatic</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

**Hire Date**

Birth Date, Hire Date, and Leave Date are useful as functions arguments.

Fact: Hire Date

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIRE_DATE</td>
<td>Automatic</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

**Leave Date**

Birth Date, Hire Date, and Leave Date are useful as functions arguments.

Fact: Leave Date

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAVE_DATE</td>
<td>Automatic</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

**Salary Rate**

The Salary Rate, Contract Start Date, and Contract End Date facts are typical elements of an employee contract.

Fact: Salary Rate

Comment: None
Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALARY_RATE</td>
<td>Automatic</td>
<td>L_CONTRACTOR</td>
</tr>
</tbody>
</table>

**Contract Start Date**

The Salary Rate, Contract Start Date, and Contract End Date facts are typical elements of an employee contract.

Fact: Contract Start Date

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACT_START_DATE</td>
<td>Automatic</td>
<td>L_CONTRACTOR</td>
</tr>
</tbody>
</table>

**Contract End Date**

The Salary Rate, Contract Start Date, and Contract End Date facts are typical elements of an employee contract.

Fact: Contract End Date

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACT_END_DATE</td>
<td>Automatic</td>
<td>L_CONTRACTOR</td>
</tr>
</tbody>
</table>

**Level Industry Mode**

The Level Industry Mode, Level Max Salary, and Level Min Salary facts are used to compare actual employee salaries to market salaries.

Fact: Level Industry Mode
Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL_IND_STD</td>
<td>Automatic</td>
<td>F_EMP_LEVEL</td>
</tr>
</tbody>
</table>

**Level Max Salary**

The Level Industry Mode, Level Max Salary, and Level Min Salary facts are used to compare actual employee salaries to market salaries.

Fact: Level Max Salary

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL_MAX_SALARY</td>
<td>Automatic</td>
<td>F_EMP_LEVEL</td>
</tr>
</tbody>
</table>

**Level Min Salary**

The Level Industry Mode, Level Max Salary, and Level Min Salary facts are used to compare actual employee salaries to market salaries.

Fact: Level Min Salary

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL_MIN_SALARY</td>
<td>Automatic</td>
<td>F_EMP_LEVEL</td>
</tr>
</tbody>
</table>
Compensation facts

Compensation Cost

The Compensation Cost amount is calculated as the sum of the fact COMP_AMT, stored at Compensation Type, Month, and Employee Level.

Fact: Compensation Cost

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP_AMT</td>
<td>Automatic</td>
<td>F_COMP_MONTH</td>
</tr>
</tbody>
</table>

Annual Salary

The Annual Salary is available in another fact table, at Employee level and Year level.

Fact: Compensation Cost

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANNUAL_SALARY_AMT</td>
<td>Automatic</td>
<td>F_BONUS_PTNTL</td>
</tr>
</tbody>
</table>

Bonus Potential

The Bonus Potential is available in another fact table, at Employee level and Year level.

Fact: Bonus Potential
Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BONUS_PTNTL_AMT</td>
<td>Automatic</td>
<td>F_BONUS_PTNTL</td>
</tr>
</tbody>
</table>

Benefit and Time Off facts

**Company Cost**

The cost of benefits to both the company (Company Cost) and the employee (Employee Cost) are stored in F_BENEFIT, along with the Number of Participants, associated with each employee.

Fact: Company Cost

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO_COST_AMT</td>
<td>Automatic</td>
<td>F_BENEFIT_QTR</td>
</tr>
</tbody>
</table>

**Employee Cost**

The cost of benefits to both the company (Company Cost) and the employee (Employee Cost) are stored in F_BENEFIT, along with the Number of Participants, associated with each employee.

Fact: Employee Cost

Comment: None
Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMP_COST_AMT</td>
<td>Automatic</td>
<td>F_BENEFIT_QTR</td>
</tr>
</tbody>
</table>

**Number of Participants**

The cost of benefits to both the company (Company Cost) and the employee (Employee Cost) are stored in F_BENEFIT, along with the Number of Participants, associated with each employee.

Fact: Number of Participants

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_PARTICIPANTS</td>
<td>Automatic</td>
<td>F_BENEFIT_QTR</td>
</tr>
</tbody>
</table>

**Number of Accrued Days**

Facts relevant to Benefit Type with the Time Off value are stored in the fact table F_TIME_OFF.

Fact: Number of Accrued Days

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_ACCRUED_DAYS</td>
<td>Automatic</td>
<td>F_TIME_OFF</td>
</tr>
</tbody>
</table>
**Number of Used Days**

Facts relevant to Benefit Type with the Time Off value are stored in the fact table F_TIME_OFF.

Fact: Number of Used Days

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_USED_DAYS</td>
<td>Automatic</td>
<td>F_TIME_OFF</td>
</tr>
</tbody>
</table>

**Vacant Positions facts**

This section contains the facts defined for open job positions.

**Number of Received Resumes**

Fact: Number of Received Resumes

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_REC_RESUMES</td>
<td>Automatic</td>
<td>F_POSITION</td>
</tr>
</tbody>
</table>

**Number of Interviewed Candidates**

Fact: Number of Interviewed Candidates

Comment: None
Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_INTERVIEWED</td>
<td>Automatic</td>
<td>F_POSITION</td>
</tr>
</tbody>
</table>

**Number of Sent Offers**

Fact: Number of Sent Offers

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_SENT_OFFERS</td>
<td>Automatic</td>
<td>F_POSITION</td>
</tr>
</tbody>
</table>

**Number of Accepted Offers**

Fact: Number of Accepted Offers

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_ACCPTD_OFFERS</td>
<td>Automatic</td>
<td>F_POSITION</td>
</tr>
</tbody>
</table>

**Number of Rejected Offers**

Fact: Number of Rejected Offers

Comment: None
Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_RJCTD_OFFERS</td>
<td>Automatic</td>
<td>F_POSITION</td>
</tr>
</tbody>
</table>

**Job Open Date**

Fact: Job Open Date

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOB_OPEN_DATE</td>
<td>Automatic</td>
<td>L_JOB_CODE</td>
</tr>
</tbody>
</table>

**Job Close Date**

Fact: Job Close Date

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOB_CLOSE_DATE</td>
<td>Automatic</td>
<td>L_JOB_CODE</td>
</tr>
</tbody>
</table>

**Qualification Level, Performance, and Satisfaction Score facts**

The Employee Performance Score and Employee Satisfaction Score are stored by Year Level in two different fact tables.

**Qualification Level**

Fact: Qualification Level
**Employee Performance Score**

Fact: Employee Performance Score

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLFN_LEVEL_ID</td>
<td>Automatic</td>
<td>F_QLFN_LEVEL</td>
</tr>
</tbody>
</table>

**Employee Satisfaction Score**

Fact: Employee Satisfaction Score

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMP_PRF_SCORE_ID</td>
<td>Automatic</td>
<td>F_PERF</td>
</tr>
</tbody>
</table>

**Survey Count**

Fact: Survey Count

Comment: None
**Definition:**

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>SURVEY_COUNT</td>
<td>Automatic</td>
<td>F_SURVEY</td>
</tr>
</tbody>
</table>

**Table-specific facts**

The facts in this section are used to drive the count of employees to a specific table.

**L_EMPLOYEE**

Fact: L_EMPLOYEE

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMPLOYEE_ID</td>
<td>Manual</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

**F_EMP_HIST**

Fact: F_EMP_HIST

Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMPLOYEE_ID</td>
<td>Manual</td>
<td>F_EMP_HIST</td>
</tr>
</tbody>
</table>
F_EMP_PREV_HIST
Fact: F_EMP_PREV_HIST
Comment: None
Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMPLOYEE_ID</td>
<td>Manual</td>
<td>F_EMP_PREV_HIST</td>
</tr>
</tbody>
</table>

F_OVERTIME
Fact: F_OVERTIME
Comment: None
Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMPLOYEE_ID</td>
<td>Manual</td>
<td>F_OVERTIME</td>
</tr>
</tbody>
</table>

F_EMP_QLFN
Fact: F_EMP_QLFN
Comment: None
Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMPLOYEE_ID</td>
<td>Manual</td>
<td>F_EMP_QLFN</td>
</tr>
</tbody>
</table>

F_BENEFIT_QTR
Fact: Survey Count
Comment: None

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMPLOYEE_ID</td>
<td>Manual</td>
<td>F_BENEFIT_QTR</td>
</tr>
</tbody>
</table>
Introduction

This appendix provides a diagram of the physical schema that comes with the Human Resources Analysis Module (HRAM). This appendix also provides descriptions of all the tables and columns in the default data warehouse, and their purposes.

Prerequisites

This appendix was written for consultants and developers implementing and customizing the HRAM application, and those building ETL routines to populate the data warehouse. It assumes that you are familiar with basic RDBMS concepts and Erwin data modeling.
HRAM physical schema

The following diagram represents the physical schema shipped with HRAM. The physical schema is available in an Erwin file, located in Program Files/MicroStrategy/Analytics Modules/hram/HRAM.erl.
### Table information

This section describes each physical table used in HRAM.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>F_BENEFIT_QTR</td>
<td>Stores the cost of the benefit component for employer and employees at quarter level. Only employees participating in the benefits are listed in this table.</td>
<td>Benefit</td>
</tr>
<tr>
<td>F_BONUS_PTNTL</td>
<td>Stores employees’ bonus potential and annual salary for every employee and year.</td>
<td></td>
</tr>
<tr>
<td>F_COMP_MONTH</td>
<td>Stores monthly compensation amounts per each compensation type for each employee.</td>
<td></td>
</tr>
<tr>
<td>F_EMP_HIST</td>
<td>Stores historical information for employees at month level.</td>
<td>Employee</td>
</tr>
<tr>
<td>F_EMP_LEVEL</td>
<td>Tracks employee levels by year, with related salary ranges and salary industry mode.</td>
<td></td>
</tr>
<tr>
<td>F_EMP_QLFN</td>
<td>Stores information on the employee’s qualifications, skills, and skill level.</td>
<td></td>
</tr>
<tr>
<td>F_OVERTIME</td>
<td>Stores the number of extra hours worked per employee per month. Only non-exempt employees with overtime are present in this table.</td>
<td>Overtime</td>
</tr>
<tr>
<td>F_PERF</td>
<td>Stores the yearly performance scores for each employee.</td>
<td>Performance</td>
</tr>
<tr>
<td>F_PLAN</td>
<td>Stores planned compensation costs and target number of employees at quarter level.</td>
<td>Planning</td>
</tr>
<tr>
<td>F_POSITION</td>
<td>Tracks the details of the hiring process, from resume gathering, to interviewing of candidates, to job offers and job offer acceptance. The history of the job code is tracked from open date to close date.</td>
<td>Position</td>
</tr>
<tr>
<td>F_SURVEY</td>
<td>Stores the number of returned surveys and the results per year, department, and survey field.</td>
<td>Survey</td>
</tr>
<tr>
<td>F_TIME_OFF</td>
<td>Tracks the time-off accrued and used by the employees. Only current values are shown.</td>
<td>Time Off</td>
</tr>
<tr>
<td>L_BENEFIT</td>
<td>Stores the benefit components offered to the employees.</td>
<td>Benefit</td>
</tr>
<tr>
<td>L_BENEFIT_TYPE</td>
<td>Stores all the benefit types offered to the employees.</td>
<td>Benefit</td>
</tr>
<tr>
<td>L_CAL_DATE</td>
<td>Dimension/look-up table for TIME at the Day Level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_MONTH</td>
<td>Dimension/look-up table for TIME at the Month Level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_QTR</td>
<td>Dimension/look-up table for TIME at the Quarter Level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_YEAR</td>
<td>Dimension/look-up table for TIME at the Year Level.</td>
<td>Time</td>
</tr>
<tr>
<td>L_COMP_TYPE</td>
<td>Stores all the compensation types or components.</td>
<td></td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
<td>Area</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>L_CONTRACTOR</td>
<td>Stores information on contractors.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_AGE_RANGE</td>
<td>Stores the age ranges of employees and needs to be updated from time to time.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_CLEARANCE</td>
<td>Stores information on security clearance level of employees.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_DGR_TYPE</td>
<td>Stores information on the type of education degree of employees.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_DIVISION</td>
<td>Stores the divisions in which employees work.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_DPTM</td>
<td>Includes information on the department to which the employee belongs.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_EDU</td>
<td>Stores the information on the type of education of employee.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_ETHNICITY</td>
<td>Stores information on the ethnicity of employee.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_GENDER</td>
<td>Stores information on the gender of employee.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_IMM_STS</td>
<td>Stores information on the immigration status of employee.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_LEVEL</td>
<td>Stores information on the level of employee.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_LOCATION</td>
<td>Stores information on the employee's work location</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_MNRTY_GRP</td>
<td>Tracks the minority group to which some employees might belong. This is useful to match law requirements.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_MRTL_STS</td>
<td>Stores the marital status of employees and needs to be updated from time to time.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_NTNLTY</td>
<td>Stores information on the nationality of employee.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_PSTN_STS</td>
<td>Indicates the position status of employee.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_REGION</td>
<td>Stores the regions in which employees work.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_STS</td>
<td>Indicates whether the employee is active/hired or inactive/terminated.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMP_TITLE</td>
<td>Includes the title of the employee.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMPLOYEE</td>
<td>Lists the individual working for the company who receives salary and benefits in return.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_JOB_CLOSE_REASON</td>
<td>Stores the reasons for closing jobs.</td>
<td>Position</td>
</tr>
<tr>
<td>L_JOB_CODE</td>
<td>Stores all the job codes associated with positions and their open and close dates. Every vacant position will have one associated job code.</td>
<td>Position</td>
</tr>
<tr>
<td>L_JOB_OPEN_REASON</td>
<td>Stores the reasons for opening jobs.</td>
<td>Position</td>
</tr>
<tr>
<td>L_LEAVE_RSN</td>
<td>Stores all the reasons for termination.</td>
<td>Leave Reason</td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
<td>Area</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>L_POSITION</td>
<td>Stores the information about positions in the company.</td>
<td>Position</td>
</tr>
<tr>
<td>L_QLFN</td>
<td>Stores information on the qualifications or skills available to employees.</td>
<td>Qualification</td>
</tr>
<tr>
<td>L_QLFN_TYPE</td>
<td>Stores information on the type of qualifications or skills available to employees.</td>
<td>Qualification</td>
</tr>
<tr>
<td>L_RCRTNG_SOURCE</td>
<td>Stores the recruiting sources used to hire new employees.</td>
<td>Employee</td>
</tr>
<tr>
<td>L_SURVEY_FIELDS</td>
<td>Stores all the survey fields.</td>
<td>Survey</td>
</tr>
<tr>
<td>L_TIME_OFF_TYPE</td>
<td>Stores the different types of time off.</td>
<td>Time Off</td>
</tr>
<tr>
<td>R_EMP_ADDRESS</td>
<td>Stores all the details on employee addresses.</td>
<td>Employee</td>
</tr>
<tr>
<td>R_EMP_DEMO</td>
<td>Stores information on the demographic attributes of the employees.</td>
<td>Employee</td>
</tr>
</tbody>
</table>
Table column information

This section describes each physical table column used in HRAM.

The Data Type column information in the following table reflects an Oracle database-specific format; depending on what database type you use, your data type may appear differently. You can use the Erwin file (see the HRAM physical schema section above) to easily convert this information to another database type.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F_BENEFIT_QTR</strong></td>
<td>BENEFIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the benefit component offered to the employee.</td>
</tr>
<tr>
<td></td>
<td>CO_COST_AMT</td>
<td>Numeric (15,6)</td>
<td></td>
<td>Cost of the benefit component per employee per quarter paid by the employer.</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of individual working for the company.</td>
</tr>
<tr>
<td></td>
<td>N_PARTICIPANTS</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Number of participants per employee. The minimum value for this field is 1.</td>
</tr>
<tr>
<td></td>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the quarter. This is a time hierarchy table. The default format for the quarter id is YYYQ and is stored as an integer.</td>
</tr>
<tr>
<td><strong>F_BONUS_PTNTL</strong></td>
<td>ANNUAL_SALARY_AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Annual salary specific to an employee in a certain year.</td>
</tr>
<tr>
<td></td>
<td>BONUS_PTNTL_AMT</td>
<td>Numeric (15,6)</td>
<td></td>
<td>Bonus potential specific to an employee in a certain year.</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of individual working for the company.</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the year. This is a time hierarchy table. The default format for the year id is YYYY and is stored as an integer.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------</td>
<td>------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_COMP_MONTH</td>
<td>COMP_AMT</td>
<td>Numeric</td>
<td>NULL</td>
<td>Compensation amount montly paid to the employee.</td>
</tr>
<tr>
<td></td>
<td>COMP_TYPE_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of the compensation type or item</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric</td>
<td></td>
<td>Unique identifier of individual working for the company.</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric</td>
<td></td>
<td>Unique identifier for the month. This is a time hierarchy table. The default format for the month id is YYYYMM and is stored as an integer.</td>
</tr>
<tr>
<td>F_EMP_HIST</td>
<td>DPTM_TRANSFER_FLG</td>
<td>Numeric</td>
<td>NULL</td>
<td>Identifies whether a department transfer occurred for an employee.</td>
</tr>
<tr>
<td></td>
<td>EMP_DPTM_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of the department where the employees work.</td>
</tr>
<tr>
<td></td>
<td>EMP_LOCATION_ID</td>
<td>Numeric</td>
<td></td>
<td>Unique identifier of the office location of employees.</td>
</tr>
<tr>
<td></td>
<td>EMP_STS_ID</td>
<td>Numeric</td>
<td></td>
<td>Unique identifier of the employee status.</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric</td>
<td></td>
<td>Unique identifier of an individual working for the company.</td>
</tr>
<tr>
<td></td>
<td>LAST_DPTM_ID</td>
<td>Numeric</td>
<td>NULL</td>
<td>Unique identifier of the previous departments of the employees.</td>
</tr>
<tr>
<td></td>
<td>LAST_LOCATION_ID</td>
<td>Numeric</td>
<td></td>
<td>Unique identifier of the previous locations of employees.</td>
</tr>
<tr>
<td></td>
<td>LOC_TRANSFER_FLG</td>
<td>Numeric</td>
<td></td>
<td>Identifies whether a transfer of location occurred for an employee.</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier for the month. This is a time dimension table. The default format for the month id is YYYYMM and is stored as an integer.</td>
</tr>
<tr>
<td></td>
<td>SENIORITY</td>
<td>Numeric</td>
<td>NULL</td>
<td>Stores the months of seniority for each employee.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------</td>
<td>--------------------</td>
<td>----------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_EMP_LEVEL</td>
<td>EMP_LEVEL_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's level.</td>
</tr>
<tr>
<td></td>
<td>LEVEL_IND_STD</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Indicates the mode of the industry or market standard salary for every employee level.</td>
</tr>
<tr>
<td></td>
<td>LEVEL_MAX_SALARY</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Maximum salary given to a specific level of employee.</td>
</tr>
<tr>
<td></td>
<td>LEVEL_MIN_SALARY</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Minimum salary given to a specific level of employee.</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the year. This is a time hierarchy table. The default format for the year id is YYYY and is stored as an integer.</td>
</tr>
<tr>
<td>F_EMP_QLFN</td>
<td>DATE_ID</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Tracks all the dates in the system. All valid calendar dates for reporting purposes will have to be defined here.</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of individual working for the company.</td>
</tr>
<tr>
<td></td>
<td>QLFN_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's qualifications.</td>
</tr>
<tr>
<td></td>
<td>QLFN_LEVEL_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Level or score assigned to an employee with a specific qualification.</td>
</tr>
<tr>
<td>F_OVERTIME</td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of an individual working for the company.</td>
</tr>
<tr>
<td></td>
<td>EXTRA_HOURS</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Number of extra hours worked per employee per month. Value is obtained by multiplying the number of effective extra hours worked by a chosen coefficient.</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the month. This is a time hierarchy table. The default format for the month id is YYYYMM and is stored as an integer.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_PERF</td>
<td>EMP_PRF_SCORE_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Performance score assigned to the employee.</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of an individual working for the company.</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the year. This is a time dimension table. The default format for the year id is YYYY and is stored as an integer.</td>
</tr>
<tr>
<td>F_PLAN</td>
<td>EMP_DPTM_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the department where employees work.</td>
</tr>
<tr>
<td></td>
<td>EMP_LOCATION_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the office location of employees.</td>
</tr>
<tr>
<td></td>
<td>PLANNED_COMP_AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Amount planned for employee compensations.</td>
</tr>
<tr>
<td></td>
<td>PLANNED_N_EMP</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Target number of employees.</td>
</tr>
<tr>
<td></td>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the quarter. This is a time dimension table. The default format for the quarter id is YYYYQ and is stored as an integer.</td>
</tr>
<tr>
<td>FPOSITION</td>
<td>JOB_CODE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the job.</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the month. This is a time hierarchy table. The default format for the month id is YYYYMM and is stored as an integer.</td>
</tr>
<tr>
<td></td>
<td>N_ACCPTD_OFFERS</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Number of accepted offers.</td>
</tr>
<tr>
<td></td>
<td>N_INTERVIEWED</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Number of interviewed candidates per position.</td>
</tr>
<tr>
<td></td>
<td>N_REC_RESUMES</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Number of received resumes per position.</td>
</tr>
<tr>
<td></td>
<td>N_RJCTD_OFFERS</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Number of rejected offers.</td>
</tr>
<tr>
<td></td>
<td>N_SENT_OFFERS</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Number of offers sent per position.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_SURVEY</td>
<td>EMP_DPTM_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the department to which the employee belongs.</td>
</tr>
<tr>
<td></td>
<td>SATISFACTION_SCORE</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Satisfaction score by survey fields, year and department.</td>
</tr>
<tr>
<td></td>
<td>SURVEY_COUNT</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Number of returned surveys. For every returned survey, the number 1 is entered.</td>
</tr>
<tr>
<td></td>
<td>SURVEY_FIELD_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the survey field.</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the year. This is a time hierarchy table. The default</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>format for the year id is YYYY and is stored as an integer.</td>
</tr>
<tr>
<td></td>
<td>SEQ_KEY_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Sequential key not used in the project, to ensure no duplicate rows in the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>table.</td>
</tr>
<tr>
<td>F_TIME_OFF</td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of individuals working for the company.</td>
</tr>
<tr>
<td></td>
<td>N_ACCRUED_DAYS</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Total number of days accrued by the employee. This number can be calculated by</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>multiplying the employee tenure with a company-specific value.</td>
</tr>
<tr>
<td></td>
<td>N_USED_DAYS</td>
<td>Numeric (15,6)</td>
<td></td>
<td>Total number of days used by the employee.</td>
</tr>
<tr>
<td></td>
<td>TIME_OFF_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the type of time off.</td>
</tr>
<tr>
<td>L_BENEFIT</td>
<td>BENEFIT_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the benefit component offered to the employee.</td>
</tr>
<tr>
<td></td>
<td>BENEFIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the benefit component offered to the employee.</td>
</tr>
<tr>
<td></td>
<td>BENEFIT_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the type of benefit offered to the employee.</td>
</tr>
<tr>
<td>L_BENEFIT_TYPE</td>
<td>BENEFIT_TYPE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the type of benefit offered to the employee.</td>
</tr>
<tr>
<td></td>
<td>BENEFIT_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the type of benefit offered to the employee.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------</td>
<td>--------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_CAL_DATE</td>
<td>DATE_ID</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Tracks all the dates in the system. All valid calendar dates for reporting purposes must be defined here.</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the month. This is a time hierarchy table. The default format for the month id is YYYYMM and is stored as an integer.</td>
</tr>
<tr>
<td></td>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier for the quarter. This is a time hierarchy table. The default format for the quarter id is YYYYQ and is stored as an integer.</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the year. This is a time hierarchy table. The default format for the year id is YYYY and is stored as an integer.</td>
</tr>
<tr>
<td>L_CAL_MONTH</td>
<td>LAST_MONTH_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>ID of the previous month. For example, for December 2003 it is November 2003. This is stored in the same format as the MONTH_ID (YYYYMM).</td>
</tr>
<tr>
<td></td>
<td>MONTH_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Textual description of the month.</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the month. This is a time hierarchy table. The default format for the month id is YYYYMM and is stored as an integer.</td>
</tr>
<tr>
<td></td>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the quarter. This is a time hierarchy table. The default format for the quarter id is YYYYQ and is stored as an integer.</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier for the year. This is a time hierarchy table. The default format for the year id is YYYY and is stored as an integer.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>L_CAL_QTR</td>
<td>LAST_QTR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>ID of the previous quarter. For example, for Q4 2003 it is Q3 2003. This is stored in the same format as the QTR_ID (YYYYQ).</td>
</tr>
<tr>
<td></td>
<td>QTR_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Textual description of the quarter.</td>
</tr>
<tr>
<td></td>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the quarter. This is a time hierarchy table. The default format for the quarter id is YYYYQ and is stored as an integer.</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the year. This is a time hierarchy table. The default format for the year id is YYYY and is stored as an integer.</td>
</tr>
<tr>
<td>L_CAL_YEAR</td>
<td>LAST_YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>The id of the previous year. For example, for 2003 it is 2002. This is stored in the same format as the YEAR_ID (YYYY).</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the year. This is a time hierarchy table. The default format for the year id is YYYY and is stored as an integer.</td>
</tr>
<tr>
<td>L_COMP_TYPE</td>
<td>COMP_TYPE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the compensation type.</td>
</tr>
<tr>
<td></td>
<td>COMP_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the compensation type or item.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>L_CONTRACTOR</td>
<td>CNTR_ACTIVITY</td>
<td>Numeric</td>
<td>NULL</td>
<td>Flag indicating whether the contract is active or not.</td>
</tr>
<tr>
<td></td>
<td>CNTR_DEPT_ID</td>
<td>Numeric</td>
<td></td>
<td>Department where the contractor is working.</td>
</tr>
<tr>
<td></td>
<td>CNTR_LOCATION_ID</td>
<td>Numeric</td>
<td></td>
<td>Location where the contractor is working.</td>
</tr>
<tr>
<td></td>
<td>CNTR_TITLE_ID</td>
<td>Numeric</td>
<td></td>
<td>Job title of the contractor.</td>
</tr>
<tr>
<td></td>
<td>CONTRACT_END_DATE</td>
<td>TimeStamp</td>
<td></td>
<td>Date on which the contract ended or will end.</td>
</tr>
<tr>
<td></td>
<td>CONTRACT_START_DATE</td>
<td>TimeStamp</td>
<td></td>
<td>Date on which the contract starts.</td>
</tr>
<tr>
<td></td>
<td>CONTRACTOR_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>Textual description or name of the contractor.</td>
</tr>
<tr>
<td></td>
<td>CONTRACTOR_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of the individual or company working as contractor.</td>
</tr>
<tr>
<td></td>
<td>SALARY_RATE</td>
<td>Numeric</td>
<td>NULL</td>
<td>Salary rate of the contractor as $/h.</td>
</tr>
<tr>
<td>L_EMP_AGE_RANGE</td>
<td>EMP_AGE_RNG_DESC</td>
<td>VarChar</td>
<td></td>
<td>Textual description of the employee's age range.</td>
</tr>
<tr>
<td></td>
<td>EMP_AGE_RNG_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's age range.</td>
</tr>
<tr>
<td>L_EMP_CLEARANCE</td>
<td>EMP_CLEARANCE_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>Textual description of the level of security clearance of the employee.</td>
</tr>
<tr>
<td></td>
<td>EMP_CLEARANCE_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of the level of security clearance of the employee.</td>
</tr>
<tr>
<td>L_EMP_DGR_TYPE</td>
<td>EMP_DGR_TYPE_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>Textual description of the employee's degree type.</td>
</tr>
<tr>
<td></td>
<td>EMP_DGR_TYPE_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's degree type.</td>
</tr>
<tr>
<td>L_EMP_DIVISION</td>
<td>EMPDIVISION_DESC</td>
<td>VarChar</td>
<td>NULL</td>
<td>Textual description of the employee's division.</td>
</tr>
<tr>
<td></td>
<td>EMP_DIVISION_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's division.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>L_EMP_DPTM</td>
<td>EMP_DPTM_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's department.</td>
</tr>
<tr>
<td></td>
<td>EMP_DPTM_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's department.</td>
</tr>
<tr>
<td></td>
<td>EMP_DIVISION_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's division.</td>
</tr>
<tr>
<td>L_EMP_EDU</td>
<td>EMP_EDU_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's education.</td>
</tr>
<tr>
<td></td>
<td>EMP_EDU_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's education.</td>
</tr>
<tr>
<td>L_EMP_ETHNICITY</td>
<td>EMP_ETHN_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's ethnicity.</td>
</tr>
<tr>
<td></td>
<td>EMP_ETHN_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's ethnicity.</td>
</tr>
<tr>
<td>L_EMP_GENDER</td>
<td>EMP_GENDER_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's gender.</td>
</tr>
<tr>
<td></td>
<td>EMP_GENDER_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's gender.</td>
</tr>
<tr>
<td>L_EMP_IMM_STS</td>
<td>EMP_IMM_STS_DESC</td>
<td>VarChar (20)</td>
<td>NULL</td>
<td>Textual description of the employee's immigration status.</td>
</tr>
<tr>
<td></td>
<td>EMP_IMM_STS_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's immigration status.</td>
</tr>
<tr>
<td>L_EMP_LEVEL</td>
<td>EMP_LEVEL_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's level.</td>
</tr>
<tr>
<td></td>
<td>EMP_LEVEL_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's level.</td>
</tr>
<tr>
<td>L_EMP_LOCATION</td>
<td>EMP_LOCATION_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's office location.</td>
</tr>
<tr>
<td></td>
<td>EMP_LOCATION_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's office location.</td>
</tr>
<tr>
<td></td>
<td>EMP_REGION_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's region.</td>
</tr>
<tr>
<td>L_EMP_MNRTY_GRP</td>
<td>EMP_MNRTY_GRP_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Textual description of the employee's minority group.</td>
</tr>
<tr>
<td></td>
<td>EMP_MNRTY_GRP_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the employee's minority group.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
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<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>L_EMP_MRTL_STS</td>
<td>EMP_MRTL_STS_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's marital status.</td>
</tr>
<tr>
<td></td>
<td>EMP_MRTL_STS_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's marital status.</td>
</tr>
<tr>
<td>L_EMP_NTNLTY</td>
<td>EMP_NTNLTY_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's nationality.</td>
</tr>
<tr>
<td></td>
<td>EMP_NTNLTY_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's nationality.</td>
</tr>
<tr>
<td>L_EMP_PSTN_STS</td>
<td>EMP_PSTN_STS_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's position status</td>
</tr>
<tr>
<td></td>
<td>EMP_PSTN_STS_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's position status.</td>
</tr>
<tr>
<td>L_EMP_REGION</td>
<td>EMP_REGION_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's region.</td>
</tr>
<tr>
<td></td>
<td>EMP_REGION_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's region.</td>
</tr>
<tr>
<td>L_EMP_STS</td>
<td>EMP_STS_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the employee's status.</td>
</tr>
<tr>
<td></td>
<td>EMP_STS_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the employee's status.</td>
</tr>
<tr>
<td>L_EMP_TITLE</td>
<td>EMP_TITLE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the nature of work or level of the employee.</td>
</tr>
<tr>
<td></td>
<td>EMP_TITLE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the nature of work or level of the employee.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------</td>
<td>------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_EMPLOYEE</td>
<td>EMP_BIRTH_DATE</td>
<td>TimeStamp</td>
<td>NULL</td>
<td>Employee's date of birth.</td>
</tr>
<tr>
<td></td>
<td>EMP_CLEARANCE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's level of security clearance.</td>
</tr>
<tr>
<td></td>
<td>EMP_CURR_STS_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's current status.</td>
</tr>
<tr>
<td></td>
<td>EMP_DPTM_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's department.</td>
</tr>
<tr>
<td></td>
<td>EMP_FTE_COEF</td>
<td>Numeric (38,0)</td>
<td></td>
<td>1 for full-time employees; greater than 0 and less than 1 for part-time employees.</td>
</tr>
<tr>
<td></td>
<td>EMP_ID_N</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Employee's identification number.</td>
</tr>
<tr>
<td></td>
<td>EMP_IMM_STS_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's immigration status.</td>
</tr>
<tr>
<td></td>
<td>EMP_LEVEL_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's level.</td>
</tr>
<tr>
<td></td>
<td>EMP_LOCATION_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's office location.</td>
</tr>
<tr>
<td></td>
<td>EMP_MNRTY_GRP_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the employee's minority group.</td>
</tr>
<tr>
<td></td>
<td>EMP_PSTN_STS_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's position status.</td>
</tr>
<tr>
<td></td>
<td>EMP_TITLE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the nature of work or level of the employee.</td>
</tr>
<tr>
<td></td>
<td>EMP_WORK_EXP</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Years of employee's work experience, prior to her/his hire in the current company. Eventually, only years of related job experience can be tracked in this field.</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Textual description or name of individual working for the company.</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the individual working for the company.</td>
</tr>
<tr>
<td></td>
<td>EXEMPT_FLG</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Indicates whether employee is exempt or not.</td>
</tr>
<tr>
<td></td>
<td>HIRE_DATE</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Date of hire of the employee.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------------</td>
<td>--------------</td>
<td>----------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_EMPLOYEE (continued)</td>
<td>LEAVE_DATE</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Date on which the employee left the company.</td>
</tr>
<tr>
<td></td>
<td>LEAVE_RSN_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the reasons for departure.</td>
</tr>
<tr>
<td></td>
<td>RCRTNG_SOURCE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the recruiting source used to hire employees.</td>
</tr>
<tr>
<td></td>
<td>SUPERVISOR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's supervisor.</td>
</tr>
<tr>
<td>L_JOB_CLOSE_REASON</td>
<td>JOB_CLOSE_RSN_ID</td>
<td>VarChar (30)</td>
<td></td>
<td>Textual description of the reasons for closing a job search.</td>
</tr>
<tr>
<td></td>
<td>JOB_CLOSE_RSN_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier of the reason for closing a job search.</td>
</tr>
<tr>
<td>L_JOB_CODE</td>
<td>EMP_TRANSFER_IN</td>
<td>VarChar (20)</td>
<td>NULL</td>
<td>Mapped to the employee ID that closed the job opening by internal transfer.</td>
</tr>
<tr>
<td></td>
<td>EMP_TRANSFER_OUT</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Mapped to the employee ID that caused the job opening by internal transfer.</td>
</tr>
<tr>
<td></td>
<td>JOB_CLEARANCE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Level of clearance required by the specific job.</td>
</tr>
<tr>
<td></td>
<td>JOB_CLOSE_DATE</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Date on which job associated with the vacant position was filled.</td>
</tr>
<tr>
<td></td>
<td>JOB_CLOSE_RSN_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the reason for closing a job search.</td>
</tr>
<tr>
<td></td>
<td>JOB_CODE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the job.</td>
</tr>
<tr>
<td></td>
<td>JOB_DPTM_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Department in which the specific job is available.</td>
</tr>
<tr>
<td></td>
<td>JOB_LOCATION_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Location where the specific job is available.</td>
</tr>
<tr>
<td></td>
<td>JOB_OPEN_DATE</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Day in which a vacant position was assigned a job code and the recruitment process began.</td>
</tr>
<tr>
<td></td>
<td>JOB_OPEN_RSN_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the reason for starting a job search.</td>
</tr>
<tr>
<td></td>
<td>JOB_WORK_EXP</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Number of years of experience required to fill the specific job.</td>
</tr>
<tr>
<td></td>
<td>POSITION_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the job position in the company.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_JOB_OPEN_RSN</td>
<td>JOB_OPEN_RSN_Desc</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the reasons for starting a job search.</td>
</tr>
<tr>
<td></td>
<td>JOB_OPEN_RSN_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the reason for starting a job search.</td>
</tr>
<tr>
<td>L_LEAVE_RSN</td>
<td>LEAVE_RSN_Desc</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the reasons for departure.</td>
</tr>
<tr>
<td></td>
<td>LEAVE_RSN_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the reasons for departure.</td>
</tr>
<tr>
<td>L_POSITION</td>
<td>POSITION_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of job positions in the company.</td>
</tr>
<tr>
<td></td>
<td>POSITION_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of job positions in the company.</td>
</tr>
<tr>
<td>L_QLFN</td>
<td>QLFN_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of employee's qualifications.</td>
</tr>
<tr>
<td></td>
<td>QLFN_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of employee's qualifications.</td>
</tr>
<tr>
<td></td>
<td>QLFN_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier of employee's qualification types.</td>
</tr>
<tr>
<td>L_QLFN_TYPE</td>
<td>QLFN_TYPE_Desc</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of employee's qualification types.</td>
</tr>
<tr>
<td></td>
<td>QLFN_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of employee's qualification types.</td>
</tr>
<tr>
<td>L_RCRTNG_SOURCE</td>
<td>RCRTNG_SOURCE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description for the recruiting source used to hire employees.</td>
</tr>
<tr>
<td></td>
<td>RCRTNG_SOURCE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the recruiting source used to hire employees.</td>
</tr>
<tr>
<td>L_SURVEY_FIELDS</td>
<td>SURVEY_FIELD_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the survey field.</td>
</tr>
<tr>
<td></td>
<td>SURVEY_FIELD_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the survey field.</td>
</tr>
<tr>
<td>L_TIME_OFF_TYPE</td>
<td>TIME_OFF_TYPE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the type of time off.</td>
</tr>
<tr>
<td></td>
<td>TIME_OFF_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the type of time off.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>R_EMP_ ADDRESS</td>
<td>EMP_CITY</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Employee's city home address.</td>
</tr>
<tr>
<td></td>
<td>EMP_COUNTRY</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Employee's country.</td>
</tr>
<tr>
<td></td>
<td>EMP_PHONE_NUM</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Employee's home phone number.</td>
</tr>
<tr>
<td></td>
<td>EMP_STATE</td>
<td>VarChar (30)</td>
<td></td>
<td>Employee's state home address.</td>
</tr>
<tr>
<td></td>
<td>EMP_STREET</td>
<td>VarChar (20)</td>
<td></td>
<td>Employee's street home address.</td>
</tr>
<tr>
<td></td>
<td>EMP_ZIP</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Employee's home address ZIP code.</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of individual working for the company.</td>
</tr>
<tr>
<td>R_EMP_DEMO</td>
<td>EMP_AGE_RNG_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier of the employee's age range.</td>
</tr>
<tr>
<td></td>
<td>EMP_DGR_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's degree type.</td>
</tr>
<tr>
<td></td>
<td>EMP_EDU_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of employee's education.</td>
</tr>
<tr>
<td></td>
<td>EMP_ETHN_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's ethnicity.</td>
</tr>
<tr>
<td></td>
<td>EMP_GENDER_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's gender.</td>
</tr>
<tr>
<td></td>
<td>EMP_MRTL_STS_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's marital status.</td>
</tr>
<tr>
<td></td>
<td>EMP_NTNLTY_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the employee's nationality.</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of individual working for the company.</td>
</tr>
</tbody>
</table>
Glossary

**ad hoc query** A SQL query dynamically constructed by desktop tools and whose results are not known before it is sent to the server. The user is asking a new question that has not been answered by an existing report.

**analyst** The user category of a person who accesses reports, performs drilling, does exception reporting, generates report requirements, and is aware of the necessary analysis. An analyst receives useful data from information devices like alphanumeric pagers, fax machines, and e-mail without fully understanding how such information is derived or delivered.

**analytics** Predefined tools that allow analysis within each Analysis Module's functional areas. Analytics include reports (graph, grid, and so on), scorecards, dashboards, and so on.
**attribute**  A data level defined by the system architect and associated with one or more columns in a data warehouse lookup table. Attributes include data classifications like Region, Order, Customer, Age, Item, City, and Year. They provide a means for aggregating and filtering data at a given level.

See also:

- form
- expression
- child attribute
- parent attribute

**attrition rate**  The number of lost employees divided by the number of employees in a given time period.

**axes, axis**  1) A vector along which data is displayed. There are three axes—Row, Column, and Page. When a user defines a template for a report, he places template units—attributes, dimensions, metrics, consolidations, and custom groups—along each axis.

2) One part of a multi-part graphical diagram. Many SDAM reports display data on more than one graphical axis, such as the Quotation Activity Summary report and the Quarterly Conversion Summary report.

**business intelligence (BI) system**  A system that facilitates the analysis of volumes of complex data by providing the ability to view data from multiple perspectives.

**category**  See hierarchy.

**child attribute**  The lower-level attribute in an attribute relationship.

See also:

- parent attribute
- relationship
**Logical Data Model**

**Introduction**

This appendix presents the logical data model on which the Web Traffic Analysis Module (WTAM) is built.

This appendix provides a description for

- business hierarchies, including attributes and relationships, and their metadata object definitions
- module facts

For a general description, basic procedures, and additional details about understanding and working with WTAM’s logical data model, see *About the logical data model* in Chapter 1, *Introduction*.

Information can also be found by accessing each attribute’s definition using the Attribute Editor. The attributes can be found in the Schema Objects/Attributes folder. Double-click an attribute to open the Attribute Editor.
Prerequisites

This appendix assumes you have prior experience with logical data modeling and creating business intelligence applications using MicroStrategy technology.

WTAM logical schema

The logical schema diagram represents the logical model shipped with WTAM. The diagram is not included in this guide because of space limitations. The logical schema diagram is available in the Erwin file located in Program Files/MicroStrategy/Analytics Modules/Wtam/WTAM.ER1.

Business hierarchies

WTAM is designed to provide insight into your online customers and customer relationships. WTAM accomplishes this partly through a set of attributes (business concepts) and their relationships to each other. These attributes are arranged in a specific sequence according to a business structure, and that arrangement is called a hierarchy.

The key business hierarchies in the Web traffic analysis process are

- Date/Time
- Pages
- Parameters
- Visits
- Views
- Errors
- Visit Range
Each business hierarchy is detailed in the following sections. For additional information on hierarchies, see the MicroStrategy project definitions in WTAM's Schema Objects/Attributes and Schema Objects/Facts folders. From one of these folders, double-click an attribute or fact to view definitions, properties, source tables, and so on.
Attributes

This section shows hierarchies, attributes, attribute relationships (with parent and child attributes), and mapping to the physical schema.

**Date/Time hierarchy**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Parent Attribute</th>
<th>Child Attribute</th>
<th>Physical Schema Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Day of Week Week</td>
<td>None</td>
<td>L_DATE.DateVal (ID column) L_DATE.DATE_ID (description) F_PARAM_VIEWS.ViewDate reports_Views.ViewDate F_PATHS.FirstViewDate reports_Errors.ErrDate reports_Visits.FirstViewDate reports_SpiderVisits.FirstViewDate reports_SpiderViews.ViewDate A_PARAM_VIEWS_DAY.DateVal A_SITE_TOTALS_DAY.DateVal A_VIEWS_DAY.DateVal A_VISIT_PROFILES_DAY.DateVal A_VISITORS_DAY.DateVal A_VISITS_DAY.DateVal reports_Date_Sum.DateVal reports_RptVstr_Sum.DateVal reports_Traffic.DateVal</td>
</tr>
<tr>
<td>Week</td>
<td>None</td>
<td>Date</td>
<td>L_WEEK.WEEK_ID (ID column) L_WEEK.WEEK_DESC (description) L_DATE.WEEK_ID A_VISITORS_WEEK.WEEK_ID L_DATE.WEEK_DESC</td>
</tr>
<tr>
<td>Attribute</td>
<td>Parent Attribute</td>
<td>Child Attribute</td>
<td>Physical Schema Mapping</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>-----------------</td>
<td>------------------------</td>
</tr>
</tbody>
</table>
| Month         | Date             | Date            | L_MONTH.TimePeriod (ID column)  
|               |                  |                 | L_MONTH.MNTH_DESC (description)  
|               |                  |                 | L_DATE.TimePeriod  
|               |                  |                 | reports_Views.TimePeriod  
|               |                  |                 | reports_Visits.TimePeriod  
|               |                  |                 | reports_SpiderViews.TimePeriod  
|               |                  |                 | reports_SpiderVisits.TimePeriod  
|               |                  |                 | A_VISITORS_MNTH.TimePeriod  
|               |                  |                 | reports_Browser_Sum.TimePeriod  
|               |                  |                 | reports_Campaign_Sum.TimePeriod  
|               |                  |                 | reports_CntGrp_Sum.TimePeriod  
|               |                  |                 | reports_Date_Sum.TimePeriod  
|               |                  |                 | reports_Dir_Sum.TimePeriod  
|               |                  |                 | reports_Domain_Sum.TimePeriod  
|               |                  |                 | reports_DOW_Sum.TimePeriod  
|               |                  |                 | reports_Duration_Sum.TimePeriod  
|               |                  |                 | reports_Entry_Sum.TimePeriod  
|               |                  |                 | reports_Errors.TimePeriod  
|               |                  |                 | reports_Exit_Sum.TimePeriod  
|               |                  |                 | reports_Host_Sum.TimePeriod  
|               |                  |                 | reports_InitRef.TimePeriod  
|               |                  |                 | reports_Keywords_Sum.TimePeriod  
|               |                  |                 | reports_LKey_Sum.TimePeriod  
|               |                  |                 | reports_Page_Sum.TimePeriod  
|               |                  |                 | reports_PageView_Sum.TimePeriod  
|               |                  |                 | reports_PDeliv_Sum.TimePeriod  
|               |                  |                 | reports_Platform_Sum.TimePeriod  
|               |                  |                 | reports_Ref_Sum.TimePeriod  
| Quarter       | Year             | Month           | L_QTR.QTR_ID (ID column)  
|               |                  |                 | L_QTR.QTR_DESC (description)  
|               |                  |                 | L_DATE.QTR_ID  
|               |                  |                 | L_DATE.QTR_DESC  
|               |                  |                 | L_MNTH.QTR_ID  
|               |                  |                 | A_VISITORS_QTR.QTR_ID  
| Year          | None             | Quarter         | L_YEAR.YEAR_ID (ID + description)  
|               |                  |                 | L_DATE.YEAR_ID  
|               |                  |                 | L_MNTH.YEAR_ID  
|               |                  |                 | L_QTR.YEAR_ID  
|               |                  |                 | A_VISITORS_YEAR.YEAR_ID  

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Business hierarchies 119
### Logical Data Model

#### Page hierarchy

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Parent Attribute</th>
<th>Child Attribute</th>
<th>Physical Schema Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page Title</td>
<td>Page URL (one-to-one)</td>
<td>L_PAGE_TITLE.PageID (ID) L_PAGE_TITLE.Title (description)</td>
<td></td>
</tr>
<tr>
<td>Attribute</td>
<td>Parent Attribute</td>
<td>Child Attribute</td>
<td>Physical Schema Mapping</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------</td>
<td>-----------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Page Breakdown       | None             | View            | `reports_PageBrkdwnID.PageBreakDownID (ID)`  
                        |                  | `reports_PageBrkdwnID.PageBreakDown (description)`                                      
                        |                  | `reports_VIEWS.PageBreakDownID`                                                        
                        |                  | `reports_SpiderViews.PageBreakDownID`                                                  
                        |                  | `reports_Errors.PageBreakDownID`                                                       |
|                      |                  |                 | **Note**: The Page Breakdown attribute is the query string of parameter keys and values.|
| Directory            | None             | Page URL        | `reports_DirectoryID.DirectoryID (ID)`                                                  
                        |                  | `reports_DirectoryID.Directory (description)`                                           
                        |                  | `reports_VIEWS.DirectoryID`                                                            
                        |                  | `reports_SpiderViews.DirectoryID`                                                     
                        |                  | `F_PARAM_VIEWS.DirectoryID`                                                           
                        |                  | `R_PAGE_DIRECTORY.DirectoryID (relation table)`                                        
                        |                  | `A_PARAM_VIEWS_DAY.DirectoryID`                                                       
                        |                  | `A_VIEWS_DAY.DirectoryID`                                                             |
|                      |                  |                 | `reports_Dir_Sum.DirID`                                                                |
| Content              | None             | View            | `reports_ContentID.ContentID (ID)`                                                      
                        |                  | `reports_ContentID.Content (description)`                                              
                        |                  | `reports_VIEWS.ContentID`                                                             
                        |                  | `reports_SpiderViews.ContentID`                                                       
                        |                  | `F_PARAM_VIEWS.ContentID`                                                             
                        |                  | `A_VIEWS_DAY.ContentID`                                                               
                        |                  | `reports_CntGrp_Sum.ContentID`                                                        |
| Next Page 2          | None             | None            | `L_PAGE2.PageID (ID)`                                                                
                        |                  | `L_PAGE2.Page (description)`                                                           
                        |                  | `F_PATHS.PageID2`                                                                    |
| Next Page 3          | None             | None            | `L_PAGE3.PageID (ID)`                                                                
                        |                  | `L_PAGE3.Page (description)`                                                           
                        |                  | `F_PATHS.PageID3`                                                                    |
| Next Page 4          | None             | None            | `L_PAGE4.PageID (ID)`                                                                
                        |                  | `L_PAGE4.Page (description)`                                                           
                        |                  | `F_PATHS.PageID4`                                                                    |
| Next Page 5          | None             | None            | `L_PAGE5.PageID (ID)`                                                                
                        |                  | `L_PAGE5.Page (description)`                                                           
                        |                  | `F_PATHS.PageID5`                                                                    |
| Next Page 6          | None             | None            | `L_PAGE6.PageID (ID)`                                                                
                        |                  | `L_PAGE6.Page (description)`                                                           
                        |                  | `F_PATHS.PageID6`                                                                    |
### Parameters hierarchy

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Parent Attribute</th>
<th>Child Attribute</th>
<th>Physical Schema Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter Value</td>
<td>Parameter</td>
<td>None</td>
<td>L_PARAMETER_VALUE.PARAMETER_VALUE_ID and L_PARAMETER_VALUE.PARAMETER_ID (compound key) L_PARAMETER_VALUE.PARAMETER_VALUE (Value: Use this by default as display) L_PARAMETER_VALUE.PARAMETER_VALUE_DESC (Description: Keep this as an alternative form for optional display) F_PARAM_VIEWS.PARAMETER_VALUE_ID and PARAMETER_ID (compound foreign key) A_PARAM_VIEWS_DAY.PARAMETER_VALUE_ID and A_PARAM_VIEWS_DAY.PARAMETER_ID (compound foreign key)</td>
</tr>
<tr>
<td>Two forms: value and value description</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parameter</td>
<td>None</td>
<td>Parameter Value</td>
<td>L_PARAMETER.PARAMETER_ID (ID) L_PARAMETER.PARAMETER (Parameter: Use this by default as description) L_PARAMETER.PARAMETER_DESC (Description: Keep this as an alternative form) F_PARAM_VIEWS.PARAMETER_ID</td>
</tr>
<tr>
<td>Two forms: parameter and parameter description</td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>
### Visit hierarchy

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Parent Attribute</th>
<th>Child Attribute</th>
<th>Physical Schema Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>Domain</td>
<td>Visit</td>
<td>reports_hostID.HostID (ID) reports_hostID.Host (description) reports_Visits.HostID reports_SpiderVisits.HostID reports_Errors.HostID reports_Host_Sum.HostID</td>
</tr>
<tr>
<td>Domain</td>
<td>Domain Long Name (one to one)</td>
<td>Visit</td>
<td>reports_DomainID.DomainID (ID) reports_DomainID.Domain (description) reports_Visits.DomainID reports_SpiderVisits.DomainID reports_Errors.DomainID A_VISIT_PROFILES_DAY.DomainID A_VISITORS_DAY.DomainID A_VISITORS_MNTH.DomainID A_VISITORS_QTR.DomainID A_VISITORS_WEEK.DomainID A_VISITORS_YEAR.DomainID A_VISITS_DAY.DomainID reports_Domain_Sum.DomainID</td>
</tr>
<tr>
<td>Attribute</td>
<td>Parent Attribute</td>
<td>Child Attribute</td>
<td>Physical Schema Mapping</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Domain Long Name</td>
<td>None</td>
<td>Domain</td>
<td>L_DOMAIN_EXT_DESC.Domain (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L_DOMAIN_EXT_DESC.Domain_DESC (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Join to attribute Domain on column Domain (although this is a &quot;description&quot; for attribute Domain)</td>
</tr>
<tr>
<td>Browser Breakdown</td>
<td>None</td>
<td>Visit</td>
<td>reports_BrowserBrkdnlID.BrowserBreakdownID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_BrowserBrkdnlID.BrowserBreakdown (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Visits.BrowserBreakdownID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Errors.BrowserBreakdownID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_SpiderVisits.BrowserBreakdownID</td>
</tr>
<tr>
<td>Browser</td>
<td>None</td>
<td>Browser Breakdown</td>
<td>reports_BrowserID.BrowserID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_BrowserID.Browser (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Visits.BrowserID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Errors.BrowserID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_SpiderVisits.BrowserID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Browser_Sum.BrowserID</td>
</tr>
<tr>
<td>Platform</td>
<td>None</td>
<td>Visit</td>
<td>reports_PlatformID.PlatformID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_PlatformID.Platform (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Visits.PlatformID</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>reports_Errors.PlatformID</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>reports_SpiderVisits.PlatformID</td>
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<tr>
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<td></td>
<td></td>
<td>reports_Platform_Sum.PlatformID</td>
</tr>
<tr>
<td>Ad Campaign</td>
<td>None</td>
<td>Visit</td>
<td>reports_CampaignID.CampaignID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_CampaignID.Campaign (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Visits.CampaignID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_SpiderVisits.CampaignID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A_VISIT_PROFILES_DAY.CampaignID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A_VISITS_DAY.CampaignID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Campaign_Sum.CampaignID</td>
</tr>
<tr>
<td>Visit Profile</td>
<td>None</td>
<td>Visit</td>
<td>reports_profileID.profileID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_profileID.profile (description)</td>
</tr>
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<td></td>
<td></td>
<td>reports_Visits.profileID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Profiles.profileID (relation table)</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>A_VISIT_PROFILES_DAY.ProfileID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Vprof_Sum.ProfileID</td>
</tr>
<tr>
<td>Attribute</td>
<td>Parent Attribute</td>
<td>Child Attribute</td>
<td>Physical Schema Mapping</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------</td>
<td>----------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Study Profile      | None             | Visit          | L_STUDY_PROFILE_V.STUDY_PROFILE_ID (ID)  
R_STUDY_PROFILE_VISITS_V.  
STUDY_PROFILE_ID (relation table) |
| First Visit        | None             | Visit          | reports_Visits.FirstVisit (ID)  
0 = repeat visit  
1 = first visit of a visitor |
| Duration Range     | None             | Visit          | L_DURATION_RANGE.Duration (ID)  
L_DURATION_RANGE.Duration_DESC (description)  
reports_Visits.Duration  
reports_SpiderVisits.Duration  
reports_Duration_Sum.DurationCode |
| Entry Page         | None             | Visit          | L_ENTRY_PAGE_V.EntryPageID (ID)  
L_ENTRY_PAGE_V.ENTRYPAGE_URL (URL description)  
L_ENTRY_PAGE_V.ENTRYPAGE_TITLE (title description)  
reports_Visits.EntryPageID  
reports_SpiderVisits.EntryPageID  
reports_Entry_sum.PageID |
| Exit Page          | None             | Visit          | L_EXIT_PAGE_V.ExitPageID (ID)  
L_EXIT_PAGE_V.EXITPAGE_URL (URL description)  
L_EXIT_PAGE_V.EXITPAGE_TITLE (title description)  
reports_Visits.ExitPageID  
reports_SpiderVisits.ExitPageID  
reports_Exit_sum.PageID |
| User               | None             | Visit          | reports_UserID.UserID (ID)  
reports_UserID.UserName (description)  
reports_Visits.UserID  
reports_SpiderVisits.UserID |
| Visitor            |                  | Visit          | reports_VisitorID.VisitorID (ID)  
reports_VisitorID.Visitor (description)  
reports_Visits.VisitorID  
reports_InitialRef.VisitorID  
reports_SpiderVisits.VisitorID  
reports_Visitor_Sum.VisitorID |
### External Keyword

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Parent Attribute</th>
<th>Child Attribute</th>
<th>Physical Schema Mapping</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Visit</td>
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<td>L_EXT_KYWD_V.KeywordsID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L_EXT_KYWD_V.Keywords (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Visits.KeywordsID</td>
</tr>
<tr>
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<td></td>
<td>reports_SpiderVisits.KeywordsID</td>
</tr>
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<td></td>
<td>reports_Keywords_Sum.KeywordsID</td>
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<tr>
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<td></td>
<td></td>
<td>A_VISIT_PROFILES_DAY.KeywordsID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A_VISITS_DAY.KeywordsID</td>
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</tbody>
</table>

### Referrer

<table>
<thead>
<tr>
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<th>Parent Attribute</th>
<th>Child Attribute</th>
<th>Physical Schema Mapping</th>
</tr>
</thead>
<tbody>
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<td>Visit</td>
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<td>reports_RefID.ReferrerID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_RefID.Referrer (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Visits.ReferrerID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Errors.ReferrerID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_SpiderVisits.ReferrerID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A_VISIT_PROFILES_DAY.ReferrerID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A_VISITS_DAY.ReferrerID</td>
</tr>
</tbody>
</table>

### Referrer Breakdown

<table>
<thead>
<tr>
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<th>Child Attribute</th>
<th>Physical Schema Mapping</th>
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</thead>
<tbody>
<tr>
<td>None</td>
<td>Visit</td>
<td></td>
<td>reports_RefBrkdwnID.ReferrerBreakdownID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_RefBrkdwnID.ReferrerBreakdown (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Visits.ReferrerBreakdownID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Visits.ReferrerBreakdownID</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>reports_Errors.ReferrerBreakdownID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_SpiderViews.ReferrerBreakdownID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_SpiderVisits.ReferrerBreakdownID</td>
</tr>
</tbody>
</table>

### View hierarchy

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>View</td>
<td>None</td>
<td>None</td>
<td>reports_Visits.ViewID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F_PARAM_VIEWS.ViewID (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_SpiderViews.ViewID</td>
</tr>
</tbody>
</table>

| Aborted         | None             | View            | reports_Visits.Aborted (ID)                                                           |
|                 |                  |                 | reports_SpiderViews.Aborted                                                           |
|                 |                  |                 | 0 = page view not aborted                                                            |
|                 |                  |                 | 1 = page view aborted, for example, stop was clicked while the page was loading        |
### Error hierarchy

<table>
<thead>
<tr>
<th>Attribute</th>
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<th>Child Attribute</th>
<th>Physical Schema Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error Type</td>
<td>None</td>
<td>None</td>
<td>reports_Errors.Status (ID)</td>
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</tbody>
</table>
Visit Range hierarchy

<table>
<thead>
<tr>
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<th>Parent Attribute</th>
<th>Child Attribute</th>
<th>Physical Schema Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visit Range</td>
<td>None</td>
<td>None</td>
<td>L_VISIT_RANGE.RetentionCode (ID)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L_VISIT_RANGE.VISIT_RANGE_DESC (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_VisRet_Sum.RetentionCode</td>
</tr>
<tr>
<td>View Range</td>
<td>None</td>
<td>None</td>
<td>L_VIEW_RANGE.PageViewCode (ID)</td>
</tr>
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<td></td>
<td></td>
<td>L_VIEWS_RANGE.VIEW_RANGE_DESC (description)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reports_PageView_Sum.PageViewCode</td>
</tr>
</tbody>
</table>

Facts

This section describes the facts used in WTAM.

The main facts groups are

- Aborts
- Robot/Spider
- Traffic
- Views
- Visitors
- Visits
- Table-specific

For additional details, see the MicroStrategy project definitions in the Schema Objects/Attributes and Schema Objects/Facts folders. Double-click any attribute or fact to view definitions, properties, source tables, and so on.
<table>
<thead>
<tr>
<th>Fact</th>
<th>Description</th>
<th>Physical Schema mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hits</td>
<td>Number of rows in the log file.</td>
<td>reports_Traffic.Hits - sum column hits</td>
</tr>
<tr>
<td>Views</td>
<td>Number of parameter views or page views.</td>
<td>reports_Views - count rows reports_Visits - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Monthly Aggregates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Ref_sum - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Browser_Sum - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Platform_Sum - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Lkey_Sum - sum column Views (local keywords)</td>
</tr>
<tr>
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<td></td>
<td>reports_DOW_Sum - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Time_Sum - sum column Views (by hour of day)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Host_Sum - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Domain_Sum - sum column Views</td>
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<td>reports_Page_Sum - sum column Views</td>
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<td>reports_Dir_Sum - sum column Views</td>
</tr>
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<td></td>
<td>reports_Campaign_Sum - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_CntGrp_Sum - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Daily Aggregates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Date_Sum - sum column Views (view per date)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VIEWS_DAY - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITS_DAY - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITS_PROFILES_DAY - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>aggregates including Visitors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITORS_DAY - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITORS_WEEK - sum column Views</td>
</tr>
<tr>
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<td></td>
<td>A_VISITORS_MNTH - sum column Views</td>
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<tr>
<td></td>
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<td>A_VISITORS_QTR - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITORS_YEAR - sum column Views</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_SITE_totals_DAY - sum column Views. Note: This table can cause double-counting because visits can span multiple Web sites. Use it only when the website on the template or filter is restricted to a single website. Disable totals.</td>
</tr>
<tr>
<td>Parameter Views</td>
<td>Number of parameter views.</td>
<td>F_PARAM_VIEWS - count distinct ViewID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_PARAM_VIEWS_DAY - sum of Views</td>
</tr>
<tr>
<td>Fact</td>
<td>Description</td>
<td>Physical Schema mapping</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Visits</td>
<td>Number of visits.</td>
<td>reports_Visits - count rows</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Visits - count distinct VisitID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F_PARAM_VIEWS - count distinct VisitID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F_PATHS - count distinct VisitID</td>
</tr>
<tr>
<td></td>
<td>Monthly Aggregates</td>
<td>reports_Ref_sum - sum column Referrals</td>
</tr>
<tr>
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<td></td>
<td>reports_Entry_Sum - sum column Visits</td>
</tr>
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<td></td>
<td></td>
<td>reports.Exit_Sum - sum column Visits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports.Keywords_SUM - sum column Visits (for external keywords)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Browser_Sum - sum column Visits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Platform_Sum - sum column Visits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_DOW_Sum - sum column Visits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Time_Sum - sum column Visits (by hour of day)</td>
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<tr>
<td></td>
<td></td>
<td>reports_Duration_Sum - sum column Visits (for duration range)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_PageView_Sum - sum column Visits (for view range)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Host_Sum - sum column Visits</td>
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<td></td>
<td></td>
<td>reports_Domain_Sum - sum column Visits</td>
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<td>reports_Campaign_Sum - sum column Visits</td>
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<td>reports_CntGrp_Sum - sum column Visits</td>
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<tr>
<td>Daily Aggregates</td>
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<td>reports_Date_Sum - sum column Visits (Visits per date)</td>
</tr>
<tr>
<td></td>
<td>A_VISITS_DAY - sum column Visits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A_VISITS_PROFILES_DAY - sum column Visits. <strong>Note:</strong> This table can cause miscounts because a visit can span multiple profiles, although not every visit has a profile associated with it. Only reports with profiles on the template are allowed to use this table.</td>
<td></td>
</tr>
<tr>
<td>Aggregates including Visitors</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>A_VISITORS_DAY - sum column Visits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A_VISITORS_WEEK - sum column Visits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A_VISITORS_MNTH - sum column Visits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A_VISITORS_QTR - sum column Visits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A_VISITORS_YEAR - sum column Visits</td>
<td></td>
</tr>
<tr>
<td>Aggregates</td>
<td>A_SITE_TOTALS_DAY - sum column Visits. <strong>Note:</strong> This table can cause double-counting because visits can span multiple Web sites. Use it only when the website on the template or filter is restricted to a single website. Disable totals.</td>
<td></td>
</tr>
<tr>
<td>Fact</td>
<td>Description</td>
<td>Physical Schema mapping</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Visitor Visit Frequency</td>
<td>Number of visits by a visitor in a time frame. <strong>Note:</strong> This can be merged into the Visits fact, but the separation allows regular reports to avoid accessing the frequency data.</td>
<td>reports_Visitor_Sum - sum of Visits, where reports_Visitor_Sum.TimePeriod is not “Full”</td>
</tr>
<tr>
<td>Visitors</td>
<td>Number of distinct visitors.</td>
<td>reports_Visits - count distinct VisitorID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_InitialRef - count distinct VisitorID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_Visitor_Sum - count distinct VisitorID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_RptVstr_Sum - sum of UniqueVisitors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reports_VisRet_Sum - sum of Visitors - for use with Visit Range</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITORS_DAY - sum column Visitors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITORS_WEEK - sum column Visitors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITORS_MNTH - sum column Visitors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITORS_QTR - sum column Visitors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_VISITORS_YEAR - sum column Visitors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A_SITE_TOTALS_DAY - sum column Visitors. <strong>Note:</strong> This table can cause double-counting because visits can span multiple Web sites. Use it only when the website on the template or filter is restricted to a single website. Disable totals.</td>
</tr>
<tr>
<td>Repeat Visitors per Day</td>
<td>Number of repeat visitors per day. <strong>Note:</strong> Repeat visitors can be determined with a conditional metric from reports_Visits, A_VISITS_DAY where FirstVisit = 0.</td>
<td>reports_RptVstr_Sum - sum of RepeatVisitors</td>
</tr>
<tr>
<td>New Visitors per Day</td>
<td>Number of new visitors per day. <strong>Note:</strong> Repeat visitors can be determined with a conditional metric from reports_Visits, A_VISITS_DAY where FirstVisit = 1.</td>
<td>reports_RptVstr_Sum - sum of NewVisitors</td>
</tr>
<tr>
<td>Fact</td>
<td>Description</td>
<td>Physical Schema mapping</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Visit or View Length | Time spent viewing a page. The aggregate across the visit results in the time spent during the entire visit. | Report_Views.ViewLength  
Report_Visits.VisitLength  
reports_Ref_Sum - sum column ViewLength  
reports_Campaign_Sum - sum column VisitLength  
A_VISIEWS_DAY - sum column ViewLength  
A_VISITS_DAY - sum column ViewLength  
A_VISITS_PROFILES_DAY - sum column ViewLength (use only when profile is on template)  
A_VISITORS_DAY - sum column ViewLength  
A_VISITORS_WEEK - sum column ViewLength  
A_VISITORS_MNTH - sum column ViewLength  
A_VISITORS_QTR - sum column ViewLength  
A_VISITORS_YEAR - sum column ViewLength  
A_SITE_TOTALS_DAY - sum column ViewLength  
reports_Duration_Sum.VisitLength  
reports_SpiderVisits.VisitLength |
| Download Length      | Time that it took to download a page.                                      | Report_Views.TimeTaken  
reports_Pdeliv_Sum - sum of TotalDownloadTime  
reports_Server_Sum - sum of TotalDownloadTime  
A_VISIEWS_DAY - sum column TimeTaken  
reports_SpiderViews.TimeTaken  
reports_Time_Sum.TimeTaken |
| Bytes                | Size of pages downloaded in bytes.                                         | (reports_Traffic.MB * 1024 * 1024) + reports_Traffic.Bytes |
| Megabytes            | Size of pages downloaded in megabytes.                                     | reports_Traffic sum of MB                                                                 |
| Errors               | Number of times that an error occurred.                                    | reports_Errors - count of rows  
reports_Server_Sum - sum of errors |
| Spider Views         | Number of page views by Internet search portal spiders, robots, or crawlers.| reports_SpiderViews - count of rows  
reports_SpiderVisits - sum of Views |
<table>
<thead>
<tr>
<th>Fact</th>
<th>Description</th>
<th>Physical Schema mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spider Visits</td>
<td>Number of visits by Internet search portal spiders, robots, or crawlers.</td>
<td>reports_SpiderVisits - count distinct view ID reports_SpiderViews - count of rows</td>
</tr>
<tr>
<td>Aborts</td>
<td>Number of aborted pages. <strong>Note:</strong> This can also be determined with a conditional metric from reports_views where Aborted = 1.</td>
<td>A_VIEWS_DAY - sum column Aborts reports_Pdeliv_Sum - sum of AbortedReqs reports_Server_Sum - sum of AbortedReqs</td>
</tr>
</tbody>
</table>
PHYSICAL SCHEMA AND DATA DICTIONARY

Introduction

This appendix provides a diagram of the physical schema that comes with the Web Traffic Analysis Module (WTAM). This appendix also provides descriptions of all the tables and columns in the default data warehouse.

Prerequisites

Skills

This appendix was written for consultants and developers implementing and customizing the WTAM application and for those building ETL routines to populate the data warehouse. It assumes you are familiar with basic RDBMS concepts and Erwin data modeling.
NetTracker

WTAM is not portable (as the other Analytics Modules are) because it is based on a physical schema by Sane Solutions. To use WTAM, you must purchase the Sane Solutions ETL tool to load the data warehouse and use WTAM reports to analyze data.

Additional tables, table columns, and views are described in the Sane Solutions NetTracker eBusiness Edition 6.0 Database Schema document. The extensions are designed to be used with WTAM. Use this WTAM Reference guide in conjunction with the NetTracker eBusiness Edition 6.0 Database Schema document available from Sane Solutions at http://www.sane.com.

WTAM physical schema

The physical schema diagram represents the physical schema shipped with WTAM. The diagram was not included in this guide because of space limitations. The physical schema diagram is available in the Erwin file located in Program Files/MicroStrategy/Analytics Modules/Wtam/WTAM.ER1.
Table information

This section describes each physical table used in WTAM. See *NetTracker* in this chapter for information about additional tables.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
<th>Table Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>L_VIEWS_RANGE</td>
<td>Contains a record for each unique view range. Can be joined on the PageViewCode field with a summary table such as PageView_Sum. Can be used to report visits depending on the number of views in each visit.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_VISIT_RANGE</td>
<td>Contains a record for each unique visit range. Can be joined on the RetentionCode field with a summary table such as VisRet_Sum. Can be used to report visitors depending on the number of visits for each visitor.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_PARAMETER</td>
<td>Contains a record for each parameter configured in NetTracker. Can be joined on the PARAMETER_ID field with a fact table such as F_PARAM_VIEWS.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_PARAMETER_VALUE</td>
<td>Contains a record for each unique parameter value within each parameter configured in NetTracker. Can be joined on the PARAMETER_ID and PARAMETER_VALUE_ID fields with a fact table such as F_PARAM_VIEWS.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_WEB_SITE</td>
<td>Contains a record for each unique website to be analyzed by NetTracker. Can be joined on the WEB_SITE_ID field with a relate table such as R_SERVER_SITE.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_DATE</td>
<td>Contains a record for each date over the time period specified in the date procedures. Can be joined on the DateVal field with multiple fact or aggregate tables.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_MNTH</td>
<td>Contains a record for each month over the time period specified in the date procedures. Can be joined on the Time Period field with multiple fact or aggregate tables.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_QTR</td>
<td>Contains a record for each quarter over the time period specified in the date procedures.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_WEEK</td>
<td>Contains a record for each week over the time period specified in the date procedures.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_WEEK_DAY</td>
<td>Contains a record for each day of the week.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_YEAR</td>
<td>Contains a record for each year over the time period specified in the date procedures.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_DOMAIN_EXT_DESC</td>
<td>Contains a record for each unique domain with the long description of the domain.</td>
<td>Lookup</td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
<td>Table Type</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>L_DURATION RANGE</td>
<td>Contains a record for each unique duration range of a visit.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_VIEWHOUR</td>
<td>Contains a record for each of the 24 hours in a day.</td>
<td>Lookup</td>
</tr>
<tr>
<td>L_PAGE_TITLE</td>
<td>Maps pages to their corresponding page titles as resolved by NetTracker. Created from pageID and titles tables. Contains only pageIDs that have titles, as currently populated.</td>
<td>Lookup</td>
</tr>
<tr>
<td>R_SERVER_SITE</td>
<td>Relates the server to the website. It is assumed that there is a one-to-one relation between the server and the website.</td>
<td>Relation</td>
</tr>
<tr>
<td>R_STUDY_PROFILE _ VISITORS</td>
<td>Can be used to perform visit profile affinity analysis for visitors across visits, but by default is not used in the project.</td>
<td>Relation</td>
</tr>
<tr>
<td>R_PAGE_DIRECTORY</td>
<td>Relates the page, website, and directory attributes. Created to enable page-directory hierarchy without using the Views table.</td>
<td>Relation</td>
</tr>
<tr>
<td>F_PATHS</td>
<td>Contains the first eight pages of information for each visit.</td>
<td>Fact</td>
</tr>
<tr>
<td>F_PARAM_VIEWS</td>
<td>Contains the information for the parameters viewed.</td>
<td>Fact</td>
</tr>
<tr>
<td>A_SITE_TOTALS_DAY</td>
<td>Contains the daily statistics of the sites grouped by website. <strong>Note:</strong> Use this table only when the attribute website is present on a report or when a single website is selected in a prompt. Otherwise, visits are double-counted because a single visit can cross multiple Web sites.</td>
<td>Aggregate Facts</td>
</tr>
<tr>
<td>A_VISITORS_DAY</td>
<td>Contains the daily statistics of visitors.</td>
<td>Aggregate Facts</td>
</tr>
<tr>
<td>A_VISITORS_WEEK</td>
<td>Contains the weekly statistics of visitors.</td>
<td>Aggregate Facts</td>
</tr>
<tr>
<td>A_VISITORS_MNTH</td>
<td>Contains the monthly statistics of visitors.</td>
<td>Aggregate Facts</td>
</tr>
<tr>
<td>A_VISITORS_QTR</td>
<td>Contains the quarterly statistics of visitors.</td>
<td>Aggregate Facts</td>
</tr>
<tr>
<td>A_VISITORS_YEAR</td>
<td>Contains the yearly statistics of visitors.</td>
<td>Aggregate Facts</td>
</tr>
<tr>
<td>A_VISITS_DAY</td>
<td>Contains the daily statistics of visits grouped by the referrer, keyword, campaign, domain, and first visit fields.</td>
<td>Aggregate Facts</td>
</tr>
<tr>
<td>A_VIEWS_DAY</td>
<td>Contains the daily statistics of views grouped by the page, content, directory, website, and keyword fields.</td>
<td>Aggregate Facts</td>
</tr>
<tr>
<td>APARAM_VIEWS_DAY</td>
<td>Contains the daily statistics of parameters grouped by the parameter, page, directory, and website fields.</td>
<td>Aggregate Facts</td>
</tr>
</tbody>
</table>
### Table column information

This section describes each physical table column used in WTAM. See the NetTracker section in this chapter for information about additional table columns.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>L_VIEWS_RANGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PageViewCode</td>
<td>Integer</td>
<td>Page view category (1-11).</td>
</tr>
<tr>
<td>VIEWS_RANGE_DESC</td>
<td>Character (50)</td>
<td>Number of page views.</td>
</tr>
<tr>
<td>L_VISIT_RANGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RetentionCode</td>
<td>Integer</td>
<td>Retention category (1-11).</td>
</tr>
<tr>
<td>VISIT_RANGE_DESC</td>
<td>Character (50)</td>
<td>Number of visits.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PARAMETER_ID</td>
<td>Integer</td>
<td>Unique parameter number starting with 1.</td>
</tr>
<tr>
<td>PARAMETER</td>
<td>Character (120)</td>
<td>“Param1” to “Paramn”. Name of the parameter as configured in the NetTracker options.</td>
</tr>
<tr>
<td>PARAMETER_DESC</td>
<td>Character (120)</td>
<td>Parameter description, which is custom-populated. By default, not used in reporting.</td>
</tr>
<tr>
<td>L_PARAMETER_VALUE_ID</td>
<td>Integer</td>
<td>Unique parameter value identification number within each parameter.</td>
</tr>
<tr>
<td>PARAMETER_ID</td>
<td>Integer</td>
<td>Unique parameter number starting from 1.</td>
</tr>
<tr>
<td>PARAMETER_VALUE</td>
<td>Character (120)</td>
<td>Parameter value.</td>
</tr>
<tr>
<td>PARAMETER_VALUE_DESC</td>
<td>Character (120)</td>
<td>Parameter value description, which is custom-populated from content management systems. By default, not used in reporting.</td>
</tr>
<tr>
<td>L_WEB_SITE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEB_SITE_ID</td>
<td>Integer</td>
<td>ID of the website that is analyzed.</td>
</tr>
<tr>
<td>WEB_SITE_URL</td>
<td>Character (255)</td>
<td>URL (Universal Resource Locator) of the website.</td>
</tr>
<tr>
<td>L_DATE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DATE_ID</td>
<td>Integer</td>
<td>Date in date format, for example, 1998-07-01.</td>
</tr>
<tr>
<td>TimePeriod</td>
<td>Character (8)</td>
<td>Month ID in YYYYMM format, for example, 199807.</td>
</tr>
<tr>
<td>MNTH_DESC</td>
<td>Character (18)</td>
<td>Month description, for example, July 1998.</td>
</tr>
<tr>
<td>WEEK_ID</td>
<td>Integer</td>
<td>Week ID in YYYYWW format, for example, 199827.</td>
</tr>
<tr>
<td>WEEK_DESC</td>
<td>Character (18)</td>
<td>Week description, for example, 1998-Week27.</td>
</tr>
<tr>
<td>DOW</td>
<td>Integer</td>
<td>Day of week where 1 is Sunday and 7 is Saturday.</td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Integer</td>
<td>Quarter ID in YYYYQ format, for example, 19983.</td>
</tr>
<tr>
<td>QTR_DESC</td>
<td>Character (18)</td>
<td>Quarter description, for example, 1998 Q3.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Integer</td>
<td>Year in YYYY format, for example, 1998.</td>
</tr>
<tr>
<td>DateVal</td>
<td>Integer</td>
<td>Date in Julian format, for example, 2450996.</td>
</tr>
<tr>
<td>L_MNTH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimePeriod</td>
<td>Character (8)</td>
<td>Month ID in YYYYMM format, for example, 199807.</td>
</tr>
<tr>
<td>MNTH_DESC</td>
<td>Character (18)</td>
<td>Month description, for example, July 1998.</td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Integer</td>
<td>Quarter ID in YYYYQ format, for example, 19983.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Integer</td>
<td>Year in YYYY format, for example, 1998.</td>
</tr>
<tr>
<td>PREV_MNTH_ID</td>
<td>Integer</td>
<td>Month ID of previous month, for example, 199806.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>PREV_MNTH_DESC</td>
<td>Character (18)</td>
<td>Month description of previous month.</td>
</tr>
<tr>
<td>PY_MNTH_ID</td>
<td>Integer</td>
<td>Month ID of same month from last year.</td>
</tr>
<tr>
<td>PY_MNTH_DESC</td>
<td>Character (18)</td>
<td>Month description of the same month from last year.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_QTR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Integer</td>
<td>Quarter ID in YYYYQ format, for example, 19983.</td>
</tr>
<tr>
<td>QTR_DESC</td>
<td>Character (18)</td>
<td>Quarter description, for example, 1998 Q3.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Integer</td>
<td>Year in YYYY format, for example, 1998.</td>
</tr>
<tr>
<td>PREV_QTR_ID</td>
<td>Integer</td>
<td>QTR ID of previous month, for example, 19982.</td>
</tr>
<tr>
<td>PREV_QTR_DESC</td>
<td>Character (18)</td>
<td>QTR description of previous month.</td>
</tr>
<tr>
<td>PY_QTR_ID</td>
<td>Integer</td>
<td>QTR ID of the same quarter last year.</td>
</tr>
<tr>
<td>PY_QTR_DESC</td>
<td>Character (18)</td>
<td>QTR description of the same quarter last year.</td>
</tr>
<tr>
<td>L_WEEK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEEK_ID</td>
<td>Integer</td>
<td>Week ID in YYYYWW format, for example, 199827.</td>
</tr>
<tr>
<td>WEEK_DESC</td>
<td>Character (18)</td>
<td>Week description, for example, 1998-Week27.</td>
</tr>
<tr>
<td>L_WEEK_DAY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOW</td>
<td>Integer</td>
<td>Day of week where 1 is Sunday and 7 is Saturday.</td>
</tr>
<tr>
<td>DOW_DESC</td>
<td>Character (50)</td>
<td>Day of week, such as Sunday.</td>
</tr>
<tr>
<td>L_YEAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Integer</td>
<td>Year in YYYY format, for example, 1998.</td>
</tr>
<tr>
<td>PREV_YEAR_ID</td>
<td>Integer</td>
<td>Year ID of last year, for example, 2002.</td>
</tr>
<tr>
<td>L_DOMAIN_EXT_DESC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DomainID</td>
<td>Integer</td>
<td>Unique domain identification number.</td>
</tr>
<tr>
<td>Domain</td>
<td>Character (255)</td>
<td>Domain, such as com, net, ca, us, and so on.</td>
</tr>
<tr>
<td>Domain_DESC</td>
<td>Character (255)</td>
<td>Long description of the domain, such as United States commercial (for com).</td>
</tr>
<tr>
<td>L_DURATION_RANGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>Integer</td>
<td>Unique duration identification number.</td>
</tr>
<tr>
<td>Duration_DESC</td>
<td>Character (50)</td>
<td>Duration.</td>
</tr>
<tr>
<td>L_VIEWHOUR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ViewHour</td>
<td>Integer</td>
<td>Hour of the day, from 0-23, during which the view occurred.</td>
</tr>
<tr>
<td>ViewHour_DESC</td>
<td>Character (50)</td>
<td>Hour duration.</td>
</tr>
<tr>
<td>L_PAGE_TITLE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PageID</td>
<td>Integer</td>
<td>ID of the page in the PageID table.</td>
</tr>
<tr>
<td>Title</td>
<td>Character (255)</td>
<td>Page title.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------</td>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td><strong>R_SERVER_SITE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ServerID</td>
<td>Integer</td>
<td>ID of the server in the ServerID table.</td>
</tr>
<tr>
<td>WEB_SITE_ID</td>
<td>Integer</td>
<td>ID of the website in the L_WEB_SITE table.</td>
</tr>
<tr>
<td><strong>R_STUDY_PROFILE_VISITORS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STUDY_PROFILE_ID</td>
<td>Integer</td>
<td>ProfileID to which this visitor belongs.</td>
</tr>
<tr>
<td>VisitorID</td>
<td>Integer</td>
<td>ID of the visitor in the VisitorID table.</td>
</tr>
<tr>
<td>FIRST_VISIT_DATE_VAL</td>
<td>Integer</td>
<td>Date of the first view in the visitor-profile combination.</td>
</tr>
<tr>
<td><strong>R_PAGE_DIRECTORY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PageID</td>
<td>Integer</td>
<td>ID of the page in the PageID table.</td>
</tr>
<tr>
<td>WEB_SITE_ID</td>
<td>Integer</td>
<td>ID of the website in the L_WEB_SITE table.</td>
</tr>
<tr>
<td>DirectoryID</td>
<td>Integer</td>
<td>ID of the directory in the DirectoryID table.</td>
</tr>
<tr>
<td><strong>F_PATHS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VisitID</td>
<td>Integer</td>
<td>ID of the visit in the Visits table.</td>
</tr>
<tr>
<td>PageID</td>
<td>Integer</td>
<td>ID of the first page in the visit.</td>
</tr>
<tr>
<td>PageID2</td>
<td>Integer</td>
<td>ID of the second page in the visit.</td>
</tr>
<tr>
<td>PageID3</td>
<td>Integer</td>
<td>ID of the third page in the visit.</td>
</tr>
<tr>
<td>PageID4</td>
<td>Integer</td>
<td>ID of the fourth page in the visit.</td>
</tr>
<tr>
<td>PageID5</td>
<td>Integer</td>
<td>ID of the fifth page in the visit.</td>
</tr>
<tr>
<td>PageID6</td>
<td>Integer</td>
<td>ID of the sixth page in the visit.</td>
</tr>
<tr>
<td>PageID7</td>
<td>Integer</td>
<td>ID of the seventh page in the visit.</td>
</tr>
<tr>
<td>PageID8</td>
<td>Integer</td>
<td>ID of the eighth page in the visit.</td>
</tr>
<tr>
<td>FirstVisit</td>
<td>Integer</td>
<td>1 = the visitor’s first visit to the site 0 = it is not the first visit</td>
</tr>
<tr>
<td>FirstViewDate</td>
<td>Integer</td>
<td>Date of the first view in the visit.</td>
</tr>
<tr>
<td>FirstViewTime</td>
<td>Integer</td>
<td>Time of the first view in the visit.</td>
</tr>
<tr>
<td>FirstViewDOW</td>
<td>Integer</td>
<td>Day of the week on which the first view in the visit occurred.</td>
</tr>
<tr>
<td><strong>F_PARAM_VIEWS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ViewID</td>
<td>Integer</td>
<td>ID of the view in the Views table.</td>
</tr>
<tr>
<td>VisitID</td>
<td>Integer</td>
<td>ID of the visit in the Visits table.</td>
</tr>
<tr>
<td>PARAMETER_ID</td>
<td>Integer</td>
<td>ID of the parameter in the L_PARAMETER table.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PARAMETER_VALUE_ID</td>
<td>Integer</td>
<td>ID of the parameter value in the L_PARAMETER_VALUE table.</td>
</tr>
<tr>
<td>ViewDate</td>
<td>Integer</td>
<td>Date that the view occurred.</td>
</tr>
<tr>
<td>ServerID</td>
<td>Integer</td>
<td>ID of the server in the ServerID table.</td>
</tr>
<tr>
<td>PageID</td>
<td>Integer</td>
<td>ID of the page in the PageID table.</td>
</tr>
<tr>
<td>ViewHour</td>
<td>Integer</td>
<td>Hour of the day, 0-23, during which the view occurred.</td>
</tr>
<tr>
<td>DirectoryID</td>
<td>Integer</td>
<td>ID of the directory in the DirectoryID table.</td>
</tr>
<tr>
<td>ViewNum</td>
<td>Integer</td>
<td>Position within the visit of the view.</td>
</tr>
<tr>
<td>ContentID</td>
<td>Integer</td>
<td>ID of the content group in the ContentID table, or 0.</td>
</tr>
<tr>
<td>A_SITE_TOTALS_DAY</td>
<td>DateVal</td>
<td>Date to which the data applies.</td>
</tr>
<tr>
<td>WEB_SITE_ID</td>
<td>Integer</td>
<td>Website to which the data applies.</td>
</tr>
<tr>
<td>ViewLength</td>
<td>Integer</td>
<td>Sum of the length of all the views in a day in seconds.</td>
</tr>
<tr>
<td>Visitors</td>
<td>Integer</td>
<td>Number of visits in a day.</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a day.</td>
</tr>
<tr>
<td>A_VISITORS_DAY</td>
<td>DateVal</td>
<td>Date value to which the data applies.</td>
</tr>
<tr>
<td>Visitors</td>
<td>Integer</td>
<td>Number of visitors in the day.</td>
</tr>
<tr>
<td>VisitLength</td>
<td>Integer</td>
<td>Sum of length of all the visits in a day in seconds.</td>
</tr>
<tr>
<td>Visits</td>
<td>Integer</td>
<td>Number of visits in a day.</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a day.</td>
</tr>
<tr>
<td>A_VISITORS_WEEK</td>
<td>WEEK_ID</td>
<td>Week to which the data applies.</td>
</tr>
<tr>
<td>Visitors</td>
<td>Integer</td>
<td>Number of visitors in the week.</td>
</tr>
<tr>
<td>VisitLength</td>
<td>Integer</td>
<td>Sum of length of all the visits in a week in seconds.</td>
</tr>
<tr>
<td>Visits</td>
<td>Integer</td>
<td>Number of visits in a week.</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a week.</td>
</tr>
<tr>
<td>A_VISITORS_MNTH</td>
<td>TimePeriod</td>
<td>Month to which the data applies.</td>
</tr>
<tr>
<td>Visitors</td>
<td>Integer</td>
<td>Number of visitors in the month.</td>
</tr>
<tr>
<td>VisitLength</td>
<td>Integer</td>
<td>Sum of length of all the visits in a month in seconds.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Column Comment</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>Visits</td>
<td>Integer</td>
<td>Number of visits in a month.</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a month.</td>
</tr>
<tr>
<td><strong>A_VISITORS_QTR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QTR_ID</td>
<td>Integer</td>
<td>Quarter to which the data applies.</td>
</tr>
<tr>
<td>Visitors</td>
<td>Integer</td>
<td>Number of visitors in the quarter.</td>
</tr>
<tr>
<td>VisitLength</td>
<td>Integer</td>
<td>Sum of length of all the visits in a quarter in seconds.</td>
</tr>
<tr>
<td>Visits</td>
<td>Integer</td>
<td>Number of visits in a quarter.</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a quarter.</td>
</tr>
<tr>
<td><strong>A_VISITORS_YEAR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Integer</td>
<td>Year to which the data applies.</td>
</tr>
<tr>
<td>Visitors</td>
<td>Integer</td>
<td>Number of visitors in the year.</td>
</tr>
<tr>
<td>VisitLength</td>
<td>Integer</td>
<td>Sum of length of all the visits in a year in seconds.</td>
</tr>
<tr>
<td>Visits</td>
<td>Integer</td>
<td>Number of visits in a year.</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a year.</td>
</tr>
<tr>
<td><strong>A_VISITS_DAY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DateVal</td>
<td>Integer</td>
<td>Date value to which the data applies.</td>
</tr>
<tr>
<td>ReferrerID</td>
<td>Integer</td>
<td>ID of the referrer in the RefID table to which the data applies.</td>
</tr>
<tr>
<td>KeywordsID</td>
<td>Integer</td>
<td>ID of the keywords in the KeywordsID table to which the data applies.</td>
</tr>
<tr>
<td>VisitLength</td>
<td>Integer</td>
<td>Sum of length of all the visits in a day grouped by the primary keys.</td>
</tr>
<tr>
<td>CampaignID</td>
<td>Integer</td>
<td>ID of the ad campaign in the CampaignID table to which the data applies.</td>
</tr>
<tr>
<td>Visits</td>
<td>Integer</td>
<td>Number of visits in a day grouped by the primary keys.</td>
</tr>
<tr>
<td>DomainID</td>
<td>Integer</td>
<td>ID of the domain in the DomainID table to which the data applies.</td>
</tr>
<tr>
<td>FirstVisit</td>
<td>Integer</td>
<td>1 = a visitor’s first visit to the site 0 = it is not the first visit</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a day grouped by the primary keys.</td>
</tr>
<tr>
<td><strong>A_VIEWS_DAY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DateVal</td>
<td>Integer</td>
<td>Date value to which the data applies.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------</td>
<td>----------------</td>
</tr>
<tr>
<td>PageID</td>
<td>Integer</td>
<td>ID of the page in the PageID table to which the data applies.</td>
</tr>
<tr>
<td>DirectoryID</td>
<td>Integer</td>
<td>ID of the directory in the DirectoryID table to which the data applies.</td>
</tr>
<tr>
<td>ContentID</td>
<td>Integer</td>
<td>ID of the content group in the ContentID table to which the data applies.</td>
</tr>
<tr>
<td>WEB_SITE_ID</td>
<td>Integer</td>
<td>website to which the data applies.</td>
</tr>
<tr>
<td>KeywordsID</td>
<td>Integer</td>
<td>ID of the keywords in the KeywordsID table to which the data applies.</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a day grouped by the primary keys.</td>
</tr>
<tr>
<td>ViewLength</td>
<td>Integer</td>
<td>Sum of length of all the views in a day grouped by the primary keys.</td>
</tr>
<tr>
<td>TimeTaken</td>
<td>Integer</td>
<td>Sum of time taken for file transfer in seconds for all the views in a day grouped by the primary keys.</td>
</tr>
<tr>
<td>Aborts</td>
<td>Integer</td>
<td>Number of views aborted in a day grouped by the primary keys.</td>
</tr>
</tbody>
</table>

**A_PARAM_VIEWS_DAY**

<table>
<thead>
<tr>
<th>DateVal</th>
<th>Integer</th>
<th>Date value to which the data applies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAGEPARAMERGE_ID</td>
<td>Integer</td>
<td>ID of the parameter in the L_PARAMETER table to which the data applies.</td>
</tr>
<tr>
<td>PARAMETER_VALUE_ID</td>
<td>Integer</td>
<td>ID of the parameter value in the L_PARAMETER_VALUE table to which the data applies.</td>
</tr>
<tr>
<td>PageID</td>
<td>Integer</td>
<td>ID of the page in the PageID table to which the data applies.</td>
</tr>
<tr>
<td>DirectoryID</td>
<td>Integer</td>
<td>ID of the directory in the DirectoryID table to which the data applies.</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a day grouped by the primary keys.</td>
</tr>
<tr>
<td>WEB_SITE_ID</td>
<td>Integer</td>
<td>website to which the data applies.</td>
</tr>
</tbody>
</table>

**A_VISIT_PROFILES_DAY**

<table>
<thead>
<tr>
<th>DateVal</th>
<th>Integer</th>
<th>Date value to which the data applies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ReferrerID</td>
<td>Integer</td>
<td>ID of the referrer in the RefID table to which the data applies.</td>
</tr>
<tr>
<td>ProfileID</td>
<td>Integer</td>
<td>ProfileID to which this visit belongs.</td>
</tr>
<tr>
<td>KeywordsID</td>
<td>Integer</td>
<td>ID of the keywords in the KeywordsID Table to which the data applies.</td>
</tr>
<tr>
<td>Visits</td>
<td>Integer</td>
<td>Number of visits in a day grouped by the primary keys.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------</td>
<td>----------------</td>
</tr>
<tr>
<td>CampaignID</td>
<td>Integer</td>
<td>ID of the ad campaign in the CampaignID Table to which the data applies.</td>
</tr>
<tr>
<td>Views</td>
<td>Integer</td>
<td>Number of views in a day grouped by the primary keys.</td>
</tr>
<tr>
<td>DomainID</td>
<td>Integer</td>
<td>ID of the domain in the DomainID table to which the data applies.</td>
</tr>
<tr>
<td>FirstVisit</td>
<td>Integer</td>
<td>1 = a visitor’s first visit to the site 0 = it is not the first visit</td>
</tr>
<tr>
<td>VisitLength</td>
<td>Integer</td>
<td>Sum of length of all the visits in a day in seconds grouped by the primary keys.</td>
</tr>
</tbody>
</table>

**L_PAGE2 [to L_PAGE8]**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PageID</td>
<td>Integer</td>
<td>Unique page identification number.</td>
</tr>
<tr>
<td>Page</td>
<td>Character (200)</td>
<td>Next Page (2 to 8).</td>
</tr>
</tbody>
</table>

**R_STUDY_PROFILE_VISITS_V**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDY_PROFILE_ID</td>
<td>Integer</td>
<td>ProfileID to which this visit belongs.</td>
</tr>
<tr>
<td>VisitID</td>
<td>Integer</td>
<td>VisitID to which this profile applies.</td>
</tr>
</tbody>
</table>

**L_STUDY_PROFILE_V**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDY_PROFILE_ID</td>
<td>Integer</td>
<td>Unique visitor profile identification number.</td>
</tr>
<tr>
<td>STUDY_PROFILE</td>
<td>Character (120)</td>
<td>Visitor profile name.</td>
</tr>
</tbody>
</table>

**L_EXT_KYWD_V**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>KeywordsID</td>
<td>Integer</td>
<td>Unique keyword identification number.</td>
</tr>
<tr>
<td>Keywords</td>
<td>Character (120)</td>
<td>Keywords.</td>
</tr>
</tbody>
</table>

**L_LOCAL_KYWD_V**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>KeywordsID</td>
<td>Integer</td>
<td>Unique keyword identification number.</td>
</tr>
<tr>
<td>Keywords</td>
<td>Character (120)</td>
<td>Keywords.</td>
</tr>
</tbody>
</table>

**L_EXIT_PAGE_V**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExitPageID</td>
<td>Integer</td>
<td>ID of the page in the PageID table.</td>
</tr>
<tr>
<td>EXIT_PAGE_URL</td>
<td>Character (255)</td>
<td>URL of the website.</td>
</tr>
<tr>
<td>EXIT_PAGE_TITLE</td>
<td>Character (255)</td>
<td>Page title.</td>
</tr>
</tbody>
</table>

**L_ENTRY_PAGE_V**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>EntryPageID</td>
<td>Integer</td>
<td>ID of the page in the PageID table.</td>
</tr>
<tr>
<td>ENTRYPAGE_URL</td>
<td>Character (255)</td>
<td>URL of the website.</td>
</tr>
<tr>
<td>ENTRYPAGE_TITLE</td>
<td>Character (255)</td>
<td>Page title.</td>
</tr>
</tbody>
</table>
Introduction

This appendix presents the logical data model on which the Financial Reporting Analysis Module (FRAM) is built.

This appendix provides a description for

- business hierarchies, including attributes and relationships, and their metadata objects definitions
- module facts
- module transformations

See Chapter 1, *Introduction*, for a general description, basic procedures, and additional details about understanding and working with FRAM’s logical data model.

Information can also be found by accessing each attribute’s definition using the Attribute Editor. The attributes can be found in the Schema Objects/Attributes folder. Double-click an attribute to open the Attribute Editor.
Prerequisites

This appendix assumes you have prior experience with logical data modeling and creating business intelligence applications using MicroStrategy technology.

FRAM logical schema

The following diagram represents the logical model shipped with FRAM. The logical schema diagram is available in an Erwin file, located in Program Files/MicroStrategy/Analytics Modules/Fram/Fram.erl.
Fact tables appear in gray.
Business hierarchies

FRAM assists analysts, managers, and executives to gain insight into an organization’s financial health and obtain standard regulatory reports, such as balance sheet, income statements, and so forth. FRAM accomplishes this partly through a set of attributes (business concepts) and their relationships to each other. These attributes are arranged in a specific sequence according to a business structure, and that arrangement is called a hierarchy.

The key business hierarchies in the financial reporting process are:

- Organization: How business is organized within the company
- Vendor: Entities that sell products and services to the company
- Invoice/Document #: The unique numeric identifier for each transaction posted in the company’s general ledger
- Time: The calendar time
- Account: Categories in the accounting system used to record all company business transactions
- GAAP Category: Classifies transactions in accordance with Generally Accepted Accounting Principles
- Employee: Person working at the company who receives benefits and salary
- Customer: Entity that buys products and services from the company
- Currency: The currency of transactions

Each hierarchy listed previously is detailed in this section. For additional information on the hierarchies, see the MicroStrategy project definitions in FRAM’s Schema Objects/Attributes and Schema Objects/Facts folders. From one of these folders, double-click an attribute or fact to view definitions, properties, source tables, and so on.
Organization hierarchy

This hierarchy represents the organizational structure used for financial reporting purposes.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Unit</td>
<td>Lowest level at which revenue and cost is tracked within a company for reporting purposes; also referred to as BU</td>
<td>Application Technology, Technical Documentation, Finance – General, Sales – Asia</td>
</tr>
<tr>
<td>District</td>
<td>A higher category within the geographical/revenue center hierarchy</td>
<td>Washington, Atlanta, Boston</td>
</tr>
<tr>
<td>Corporation</td>
<td>Different subsidiaries and/or registered entities within the company</td>
<td>ABC Co., ABC Services Co., ABC – Asia</td>
</tr>
<tr>
<td>Parent Company</td>
<td>The highest organizational entity</td>
<td>ABC Worldwide</td>
</tr>
</tbody>
</table>

Corporation and District are modeled as two separate parent attributes of Business Unit (BU). Often, companies have two different structures for organizing their business. One is usually a cost center-based organization that shows the functional or operational structure. The attribute called District is used to show the Revenue Center hierarchy that is often geography-based.

The Cost Structure hierarchy can have additional attributes such as Directorate or Department. Some corporations are part of a larger parent company or holding company.

The Revenue Center hierarchy can have additional attributes such as Region, Country, Continent, and so on.

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.
## Business Unit

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>BUSINESS_UNIT_ID</td>
<td>L_BUSINESS UNIT</td>
<td>F_ACCT, F_ACCT_FC, F_BUDGET, F_PAYABLE, F RECEIVABLE, F_PAYMENT, F_RECEIPTS, REL_EMP_BUSINESS_UNIT</td>
</tr>
<tr>
<td>DESC</td>
<td>BUSINESS_UNIT_DESC</td>
<td>L_BUSINESS UNIT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Corporation</td>
<td>Many-to-one</td>
<td>L_BUSINESS_UNIT</td>
</tr>
<tr>
<td>None</td>
<td>District</td>
<td>Many-to-one</td>
<td>L_BUSINESS_UNIT</td>
</tr>
</tbody>
</table>

## Corporation

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CORPORATION_ID</td>
<td>L_CORPORATION</td>
<td>L_BUSINESS_UNIT</td>
</tr>
<tr>
<td>DESC</td>
<td>CORPORATION_DESC</td>
<td>L_CORPORATION</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Unit</td>
<td>None</td>
<td>One-to-many</td>
<td>L_BUSINESS_UNIT</td>
</tr>
<tr>
<td>None</td>
<td>Parent Company</td>
<td>Many-to-one</td>
<td>L_CORPORATION</td>
</tr>
</tbody>
</table>
District

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DISTRICT_ID</td>
<td>L_DISTRICT</td>
<td>L_BUSINESS_UNIT</td>
</tr>
<tr>
<td>DESC</td>
<td>DISTRICT_DESC</td>
<td>L_DISTRICT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Unit</td>
<td>None</td>
<td>One-to-many</td>
<td>L_BUSINESS_UNIT</td>
</tr>
</tbody>
</table>

Parent Company

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PARENT_CO_ID</td>
<td>L_PARENT_CO</td>
<td>L_CORPORATION</td>
</tr>
<tr>
<td>DESC</td>
<td>PARENT_CO_DESC</td>
<td>L_PARENT_CO</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporation</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CORPORATION</td>
</tr>
</tbody>
</table>

Vendor hierarchy

This hierarchy represents the entities that sell goods and services to the company.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor</td>
<td>Provider of goods and/or services to the company</td>
<td>ABC Phone company, ABC Power Company, CCP LLP</td>
</tr>
<tr>
<td>Vendor Type</td>
<td>Higher-level categorization of vendor based on</td>
<td>Utility Providers, Consulting and Advisory Services, Audit and Accounting service</td>
</tr>
<tr>
<td></td>
<td>the goods or services provided</td>
<td></td>
</tr>
</tbody>
</table>

The detailed definitions of each attribute in the MicroStrategy metadata listed previously are shown in the following tables.
Vendor

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>VENDOR_ID</td>
<td>L_VENDOR</td>
<td>F_ACCT, F_PAYABLE, F_PAYMENT</td>
</tr>
<tr>
<td>DESC</td>
<td>VENDOR_DESC</td>
<td>L_VENDOR</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Vendor Type</td>
<td>Many-to-one</td>
<td>L_VENDOR</td>
</tr>
</tbody>
</table>

Vendor Type

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>VENDOR_TYPE_ID</td>
<td>L_VENDOR_TYPE</td>
<td>L_VENDOR</td>
</tr>
<tr>
<td>DESC</td>
<td>VENDOR_TYPE_DESC</td>
<td>L_VENDOR_TYPE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor</td>
<td>None</td>
<td>One-to-many</td>
<td>L_VENDOR</td>
</tr>
</tbody>
</table>

Invoice hierarchy

This hierarchy represents the unique identifier for each transaction posted in the general ledger.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invoice</td>
<td>Unique numeric identifier associated with an entry in the general ledger</td>
<td>5583, 7897, 7327</td>
</tr>
<tr>
<td>Invoice Item</td>
<td>Numeric identifier associated with each item within a given invoice</td>
<td>558301, 789701, 789703, 732701</td>
</tr>
<tr>
<td>Invoice Date</td>
<td>Date on which invoice is created</td>
<td>1/1/01, 3/4/02</td>
</tr>
</tbody>
</table>
The detailed definitions of each attribute in the MicroStrategy metadata listed previously are shown in the following tables.

### Invoice Item

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due Date</td>
<td>Date on which the bill is due; also used for calculating aging of receivables and payables; commonly 30-60 days from invoice date</td>
<td>1/2/02, 5/4/03</td>
</tr>
<tr>
<td>Payment Date</td>
<td>Date on which payments was made; the date of cash exchange.</td>
<td>1/15/02, 3/30/03</td>
</tr>
</tbody>
</table>

### Invoice

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>INVOICE_ID</td>
<td>L_INVOICE_ITEM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Invoice</td>
<td>Many-to-one</td>
<td>L_INVOICE_ITEM</td>
</tr>
</tbody>
</table>

The detailed definitions of each attribute in the MicroStrategy metadata listed previously are shown in the following tables.
**Invoice Date**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>INVOICE_DATE_ID</td>
<td>F_PAYABLE</td>
<td>F_RECEIVABLE, F_RECEIPTS, F_PAYMENT, F_PAYABLE</td>
</tr>
</tbody>
</table>

**Due Date**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DUE_DATE_ID</td>
<td>F_RECEIVABLE</td>
<td>F_PAYABLE</td>
</tr>
</tbody>
</table>

**Payment Date**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PAYMENT_DATE</td>
<td>F_PAYMENT</td>
<td>None</td>
</tr>
</tbody>
</table>

**Time hierarchy**

This hierarchy represents the calendar time.

For companies that follow a fiscal calendar year (that is, a calendar year that does not start on January 1 and end on December 31), you must create physical structures and discuss model setup to address such a case.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Calendar date that is used to track the different processes and also used for entries in the general ledger</td>
<td>01/01/02</td>
</tr>
<tr>
<td>Month</td>
<td>Calendar month</td>
<td>Jan 1999</td>
</tr>
</tbody>
</table>
The detailed definitions of each attribute in the MicroStrategy metadata listed previously are shown in the following tables.

### Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DATE_ID</td>
<td>L_CAL_DATE</td>
<td>F_ACCT</td>
</tr>
<tr>
<td>PAYMENT_DATE</td>
<td>F_PAYMENT</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>RECEIPT_DATE</td>
<td>F_RECEIPTS</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Month</td>
<td>Many-to-one</td>
<td>L_CAL_DATE</td>
</tr>
</tbody>
</table>

### Month

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>MONTH_ID</td>
<td>L_CAL_MONTH</td>
<td>L_CAL_DATE, F_ACCT_FC, F_BUDGET</td>
</tr>
<tr>
<td>DESC</td>
<td>MONTH_DESC</td>
<td>L_CAL_MONTH</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_DATE</td>
</tr>
<tr>
<td>None</td>
<td>Quarter</td>
<td>Many-to-one</td>
<td>L_CAL_MONTH</td>
</tr>
</tbody>
</table>
Quarter

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>QTR_ID</td>
<td>L_CAL_QTR</td>
<td>L_CAL_DATE, L_CAL_MONTH</td>
</tr>
<tr>
<td>DESC</td>
<td>QTR_DESC</td>
<td>L_CAL_QTR</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_MONTH</td>
</tr>
<tr>
<td>None</td>
<td>Year</td>
<td>Many-to-one</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>

Year

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>YEAR_ID</td>
<td>L_CAL_YEAR</td>
<td>L_CAL_DATE, L_CAL_MONTH, L_CAL_QTR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter</td>
<td></td>
<td>One-to-many</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>

Account hierarchy

This hierarchy represents different categories for business transactions in the company’s accounting system.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Account</td>
<td>Subcategory used for Object Account information; in some cases this may be the same as the account</td>
<td>Assets, Business Insurance, Travel Insurance, Laptop Insurance</td>
</tr>
<tr>
<td>Account</td>
<td>Category used in the company’s accounting system</td>
<td>Cash, Benefit allocations, Business Insurance, Payroll taxes</td>
</tr>
</tbody>
</table>
Companies using Sub-Account store their account information at this level. These facts can easily aggregate to a higher level of Account.

The detailed definitions of each attribute in the MicroStrategy metadata listed previously are shown in the following tables.

**Sub-Account**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Classification</td>
<td>Different classes of accounts</td>
<td>Cost, Revenues, Liability, Assets, Equities</td>
</tr>
<tr>
<td>Account Type</td>
<td>Higher-level categories dictated by the company</td>
<td>Salaries, Commissions, T&amp;E, Rent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SUB_ACCT_ID</td>
<td>L_SUB_ACCT</td>
<td>F_BUDGET, F_ACCT, F_ACCT_FC</td>
</tr>
<tr>
<td>DESC</td>
<td>SUB_ACCT_DESC</td>
<td>L_SUB_ACCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Account</td>
<td>Many-to-one</td>
<td>L_SUB_ACCT</td>
</tr>
</tbody>
</table>

**Account**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ACCT_ID</td>
<td>L_ACCT</td>
<td>L_SUB_ACCT</td>
</tr>
<tr>
<td>DESC</td>
<td>ACCT_DESC</td>
<td>L_ACCT</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Account</td>
<td>None</td>
<td>One-to-many</td>
<td>L_SUB_ACCT</td>
</tr>
<tr>
<td>None</td>
<td>Account Classification</td>
<td>Many-to-one</td>
<td>L_ACCT</td>
</tr>
<tr>
<td>None</td>
<td>Account Type</td>
<td>Many-to-one</td>
<td>L_ACCT</td>
</tr>
</tbody>
</table>
Account Classification

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ACCT_CLASS_ID</td>
<td>L_ACCT_CLASS</td>
<td>L_ACCT</td>
</tr>
<tr>
<td>DESC</td>
<td>ACCT_CLASS_DESC</td>
<td>L_ACCT_CLASS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account</td>
<td>None</td>
<td>One-to-many</td>
<td>L_ACCT</td>
</tr>
</tbody>
</table>

Account Type

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ACCT_TYPE_ID</td>
<td>L_ACCT_TYPE</td>
<td>L_ACCT</td>
</tr>
<tr>
<td>DESC</td>
<td>ACCT_TYPE_DESC</td>
<td>L_ACCT_TYPE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account</td>
<td>None</td>
<td>One-to-many</td>
<td>L_ACCT</td>
</tr>
</tbody>
</table>

GAAP Category hierarchy

This hierarchy classifies transactions in accordance with Generally Accepted Accounting Principles (GAAP).

Companies often use GAAP Category Codes to classify all accounting transactions. These category codes can be used in addition to the Chart of Accounts.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAAP Category Code</td>
<td>Codes used for tracking transactions in the company’s accounting system; these codes facilitate regulatory reporting</td>
<td>Revenue, Income Tax, Amortization</td>
</tr>
</tbody>
</table>

The detailed definitions of the GAAP Category hierarchy in the MicroStrategy metadata are shown in the following table.
### GAAP Category Code

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>GAAP_ID</td>
<td>L_GAAP</td>
<td>F_ACCT, F_ACCT_FC, F_BUDGET</td>
</tr>
<tr>
<td>DESC</td>
<td>GAAP_DESC</td>
<td>L_GAAP</td>
<td>None</td>
</tr>
</tbody>
</table>

### Employee hierarchy

This hierarchy represents the people working for the company in return for benefits and salaries. The Employee hierarchy is distinct from the Organization hierarchy, but a relationship is established between the two hierarchies using a physical structure.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>Individual working for the company who receives salary and benefits in return</td>
<td>James Smith</td>
</tr>
<tr>
<td>Active Flag</td>
<td>Indication of whether the employee is currently working for the company</td>
<td>Active, Inactive, Suspended</td>
</tr>
<tr>
<td>Employee Title/Rank</td>
<td>The nature of work/level of the employee</td>
<td>Director, clerk, CEO</td>
</tr>
</tbody>
</table>

The employee listing is required for organization structure reporting and tracking expenses by employee for financial control.

The detailed definitions of each attribute in the MicroStrategy metadata are shown in the following tables.

### Employee

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMPLOYEE_ID</td>
<td>L_EMPLOYEE</td>
<td>F_ACCT, REL_EMP_BUSINESS_UNIT</td>
</tr>
<tr>
<td>DESC</td>
<td>EMPLOYEE_DESC</td>
<td>L_EMPLOYEE</td>
<td>None</td>
</tr>
</tbody>
</table>
### Active Flag

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_ACTIVE_FLG</td>
<td>L_EMPLOYEE_STATUS</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>

### Title/Rank

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>EMP_TITLE_ID</td>
<td>L_EMPLOYEE&gt;Title</td>
<td>L_EMPLOYEE</td>
</tr>
<tr>
<td>DESC</td>
<td>EMP_TITLE_DESC</td>
<td>L_EMPLOYEE&gt;Title</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>None</td>
<td>One-to-many</td>
<td>L_EMPLOYEE</td>
</tr>
</tbody>
</table>
Customer hierarchy

This hierarchy represents the entities to which the company sells good and services.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Individual or corporation that buys goods and services from the company</td>
<td>ABC Corp., ABC Asia, ABC Europe, JJJ LLC, John Smith</td>
</tr>
<tr>
<td>Customer Address</td>
<td>Geographical information; could be one or more attributes such as city, state, country, zip code, and so on</td>
<td>1861 International Drive, McLean, VA 22102</td>
</tr>
<tr>
<td>Customer Parent Company</td>
<td>A parent company associated with the customer</td>
<td>ABC Worldwide</td>
</tr>
<tr>
<td>Customer Industry</td>
<td>Categorization of customers based on the nature of their business</td>
<td>Retail, CPG, Telecom, Financial Services</td>
</tr>
</tbody>
</table>

The detailed definitions of each attribute in the MicroStrategy metadata are shown in the following tables.

Customer

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUSTOMER_ID</td>
<td>L_CUSTOMER</td>
<td>F_ACCT, F_RECEIVABLE, F_RECEIPTS</td>
</tr>
<tr>
<td>DESC</td>
<td>CUSTOMER_DESC</td>
<td>L_CUSTOMER</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Customer Address</td>
<td>Many-to-one</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Parent Company</td>
<td>Many-to-one</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Industry</td>
<td>Many-to-one</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>
### Customer Address

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_ADDRESS_ID</td>
<td>L_CUST_ADDRESS</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_ADDRESS_DESC</td>
<td>L_CUST_ADDRESS</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

### Customer Parent Company

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_PRNT_CO_ID</td>
<td>L_CUST_PRNT_CO</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_PRNT_CO_DESC</td>
<td>L_CUST_PRNT_CO</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>

### Customer Industry

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CUST_INDUSTRY_ID</td>
<td>L_CUST_INDUSTRY</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_INDUSTRY_DESC</td>
<td>L_CUST_INDUSTRY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
</tr>
</tbody>
</table>
Currency hierarchy

This hierarchy represents the currency of the different types of transactions.

All amount calculations are stored in a base currency. The currency of transaction is also tracked. For each currency, a plan exchange rate is also stored. For more detailed exchange rate information, a daily or spot rate for the actual transaction can be tracked in the lookup or fact tables.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currency</td>
<td>The currency of transaction</td>
<td>USD, Euro, Yen</td>
</tr>
</tbody>
</table>

The detailed definitions of the attribute in the MicroStrategy metadata listed previously are shown in the following table.

Currency

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CURRENCY_ID</td>
<td>L_CURRENCY</td>
<td>F_ACCT, F_PAYABLE, F_RECEIVABLE, F_PAYMENT, F_RECEIPTS</td>
</tr>
<tr>
<td>DESC</td>
<td>CURRENCY_DESC</td>
<td>L_CURRENCY</td>
<td>None</td>
</tr>
</tbody>
</table>

Facts

This section describes the facts used in FRAM. The underlying processes are also explained briefly.

The main facts groups are

- Accounts Payable: Amounts that the company owes to creditors for goods or services bought on credit
- Accounts Receivable: Amounts owed by customers to the company for goods and services sold to them on credit
• Amounts (planned, forecasted, and actual amount): Currency amounts associated with different transactions and accounts, often by project

For additional details, see the MicroStrategy project definitions in the Schema Objects/Attributes and Schema Objects/Facts folders. Double-click any attribute or fact to view definitions, properties, source tables, and so on.

**Accounts Payable facts**

When a company buys goods from vendors, the company receives an invoice. The invoice indicates the amount that needs to be paid, the invoice date, items purchased, and a due date if distinct from the invoice date. (Additional interest or other penalty terms applicable in case of late payment may be listed, but are not modeled to keep the model generic). Any payment activity related to the invoice is recorded, and amounts due are suitably updated.

Fact information can potentially be stored at two different levels, Invoice Number and Invoice Item Number.

**Payable Open Amount**

Payable Open Amount refers to the amounts owed by the company for goods and services bought on credit. The open payables are categorized and measured for different segments of time, such as 0-30 days, 31-60 days, 181-360 days, and so forth.

Open amount information is stored with the following attribute keys: Business Unit, Invoice Item, Vendor, Invoice Date, Due Date, and Currency (of transaction). The due date is commonly a period of 30-60 days after the invoice date. Aging of payables is calculated from the due date.
Fact: Payable Open Amount

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAY_OPEN_AMT</td>
<td>Manual</td>
<td>F_PAYABLE</td>
</tr>
</tbody>
</table>

Payable Gross Amount

The total amount on an invoice is called the Payable Gross Amount. If no amount is paid, the open and gross amounts are the same. The Gross Amount for an invoice is set when the purchase is made and does not change. The Gross Amount information is stored with the following keys: Business Unit, Invoice Item, Vendor, Invoice Date, and Currency (of transaction).

Fact: Payable Gross Amount

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAY_GROSS_AMT</td>
<td>Manual</td>
<td>F_PAYABLE</td>
</tr>
</tbody>
</table>

Paid Amount

The amount paid by the company toward an invoice is called the Paid Amount. The difference between Gross Amount and total of Paid Amount gives the Open Amount. Paid Amount information is stored with the following attribute keys: Business Unit, Invoice Item, Payment Date, and Currency.

Fact: Paid Amount

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAID_AMT</td>
<td>Manual</td>
<td>F_PAYMENT</td>
</tr>
</tbody>
</table>
Total Payable Open Amount EOQ

The sum total of Open Amounts for all outstanding invoices at the end of a quarter is called the Total Open Amount EOQ. Total Open Amount EOQ is stored with the following attribute keys: Business Unit and Quarter.

Fact: Total Payable Open Amount EOQ

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAY_OPEN_AMT_EOQ</td>
<td>Manual</td>
<td>F_CASH_HIST</td>
</tr>
</tbody>
</table>

Accounts Receivable facts

Usually a company sells goods and services to its customers on credit. The customer receives an invoice that indicates the amount that needs to be paid, the invoice date, items purchased, and a due date if distinct from the invoice date. (Additional interest or other penalty terms applicable in case of late payment may be listed, but are not modeled to keep the model generic). Any cash receipts related to the invoice are recorded and amounts due are suitably updated.

Receivable Open Amount

Receivable Open Amount refers to the amounts owed to the company by the customer for goods and services sold on credit. The open receivables are categorized and measured for different segments of time such as 0-30 days, 31-60 days, 181-360 days, and so forth.

Open amount information is stored with the following attribute keys: Business Unit, Invoice Item, Vendor, Invoice Date, Due Date, and Currency (of transaction). The due date is commonly a period of 30-60 days after the invoice date. Aging of receivables is calculated from the due date.
Fact: Receivable Open Amount

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>REC_OPEN_AMT</td>
<td>Manual</td>
<td>F_RECEIVABLE</td>
</tr>
</tbody>
</table>

Receivable Gross Amount

The total amount on the invoice sent to the customer is called Receivable Gross Amount. If no amount is paid, the open and gross amounts are the same. The Gross Amount for an invoice is set when the sale is made and does not change. The Gross Amount information is stored with the following keys: Business Unit, Invoice Item, Vendor, Invoice Date, and Currency (of transaction).

Fact: Receivable Gross Amount

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>REC_GROSS_AMT</td>
<td>Manual</td>
<td>F_RECEIVABLE</td>
</tr>
</tbody>
</table>

Received Amount

The amount received by the company toward an invoice is called the Received Amount. The difference between Gross Amount and total of Received Amount and Write-off Amount gives the Open Amount. Received Amount information is stored with the following attribute keys: Business Unit, Invoice Item, Payment Date, Customer, and Currency.

Fact: Received Amount

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECD_AMT</td>
<td>Manual</td>
<td>F_RECEIPTS</td>
</tr>
</tbody>
</table>
Write-off Amount

Companies tend to write off bills that have not been paid for a long period (commonly 180-360 days). The write-off amount is considered a business loss and recorded accordingly. The difference between Gross Amount and total of Received Amount and Open Amount gives the Write-off Amount. Write-off Amount information is stored with the following attribute keys: Business Unit, Invoice Item, Payment Date (Write-off date), Customer, and Currency.

Fact: Write-off Amount

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRITE_OFF_AMT</td>
<td>Manual</td>
<td>F_RECEIPTS</td>
</tr>
</tbody>
</table>

Total Receivable Open Amount EOQ

The sum total of Open Amounts for all outstanding customer invoices at the end of a quarter is called the Total Open Receivable Amount EOQ. Total Receivable Open Amount EOQ is stored with the following attribute keys: Business Unit and Quarter.

Fact: Total Receivable Open Amount EOQ

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>REC_OPEN_AMT_EOQ</td>
<td>Manual</td>
<td>F_CASH_HIST</td>
</tr>
</tbody>
</table>
Actual, Budgeted, and Forecasted Amounts facts

All accounting transactions are written to the general ledger. In addition to recording transactions after the fact, companies also use plans such as budgets and forecasts for predicting and controlling business performance. Comparing actual amounts to budgets and forecasts is an important part of analyzing business predictability.

All these amounts are stored in a common currency or base currency. Base currency is the currency used for reporting to the regulatory bodies and also within the company. This currency is usually the currency of the country in which the company is based. Reporting in other currencies for parts of the operation is often required.

Account Amount

All accounting transaction amounts recorded in the general ledger are stored as Account Amount. This is the actual amount of the recorded transaction after the fact. These transactions include revenue, expenses, equity changes, changes in asset values, and all relevant accounting adjustments.

The Account Amount fact is stored with the following attribute keys: Business Unit, Sub-Account, Date, Employee, Vendor, Customer, and GAAP Category Code.

Not all keys are relevant for each transaction. For instance, an expense has a Vendor but no Customer associated with the transaction, and a sale has a Customer but no Vendor associated with the transaction.

Fact: Account Amount

Comment: Different cost and revenue metrics are based on the Amount fact associated with different set(s) of accounts.
Definition:

### Plan Amount (Budget Amount)

Most companies prepare a plan at the beginning of their fiscal year. In this plan, different amounts are allocated for the costs associated with running the business. These amounts are called the Plan or Budget amounts. These amounts are usually allocated for the entire year and are often divided and stored at lower levels for easier tracking.

The Plan Amount fact is stored with the following attribute keys: Business Unit, Sub-Account, Month, GAAP Category Code, and Currency.

**Fact: Plan Amount**

**Definition:**

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT_AMT</td>
<td>Automatic</td>
<td>F_ACCT</td>
</tr>
</tbody>
</table>

### Account Forecast Amount

In addition to using budgets, companies also use forecasts or projections for business performance. Like budgets, forecasts are also made at the beginning of the year, but forecasts are updated periodically as the year progresses.

Account Forecast Amount is the fact used for storing this estimate, and the following attribute keys are used: Business Unit, Sub-Account, Month, GAAP Category Code, and Currency.

**Fact: Account Forecast Amount**

**Definition:**

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUDGET_AMT</td>
<td>Automatic</td>
<td>F_BUDGET</td>
</tr>
</tbody>
</table>
Fact: Forecast Amount

Definition:

<table>
<thead>
<tr>
<th>Expression</th>
<th>Mapping Method</th>
<th>Source Table Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT_FC_AMT</td>
<td>Automatic</td>
<td>F_ACCT_FC</td>
</tr>
</tbody>
</table>

Transformations

FRAM includes the following time transformations to enable analysis of a selected time period compared to another time period. All these transformations are based on table transformations.

<table>
<thead>
<tr>
<th>Transformation</th>
<th>Definition</th>
<th>Attribute</th>
<th>Transformation Table</th>
<th>Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date - 30</td>
<td>Enables analysis of a selected day compared to a day 30 days prior to the selected day</td>
<td>Date</td>
<td>L_CAL_DATE</td>
<td>(DATE_ID - 30)</td>
</tr>
<tr>
<td>Last Month</td>
<td>Enables analysis of a selected month compared to the previous month</td>
<td>Month</td>
<td>L_CAL_MONTH</td>
<td>LAST_MONTH_ID</td>
</tr>
<tr>
<td>Last Quarter</td>
<td>Enables analysis of a selected quarter compared to the previous quarter</td>
<td>Quarter</td>
<td>L_CAL_QTR</td>
<td>LAST_QTR_ID</td>
</tr>
<tr>
<td>Month to Date</td>
<td>Enables analysis of a selected month compared to all months in the year, up to the selected month</td>
<td>Date</td>
<td>MTD_DAY</td>
<td>MTD_DATE_ID</td>
</tr>
<tr>
<td>Quarter to Date</td>
<td>Enables analysis of a selected quarter compared to all quarters in the year, up to the selected quarter</td>
<td>Date</td>
<td>QTD_DAY</td>
<td>QTD_DATE_ID</td>
</tr>
<tr>
<td>Year to Date</td>
<td>Enables analysis of all days from the beginning of a given year, up to the selected day</td>
<td>Date</td>
<td>YTD_DAY</td>
<td>YTD_DATE_ID</td>
</tr>
</tbody>
</table>
PHYSICAL SCHEMA AND DATA DICTIONARY

Introduction

This appendix provides a diagram of the physical schema that comes with the Financial Reporting Analysis Module (FRAM). This appendix also provides descriptions of all the tables and columns in the default data warehouse.

Prerequisites

This appendix was written for consultants and developers implementing and customizing the FRAM application and for those building ETL routines to populate the data warehouse. It assumes you are familiar with basic RDBMS concepts and Erwin data modeling.
The following diagram represents the physical schema shipped with FRAM. The physical schema definition is also available in an Erwin file, which is located in Program Files/MicroStrategy/Analytics Modules/Fram/Fram.erl.

Fact tables appear in gray.
# Table information

This section describes each physical table used in FRAM.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
<th>Analysis Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>L_ACCT</td>
<td>Table including the categories used in the company accounting system</td>
<td>Account</td>
</tr>
<tr>
<td>L_ACCT_CLASS</td>
<td>Table including the set of accounts by account classification (typically cost, revenue, assets, liabilities, and equities)</td>
<td>Account</td>
</tr>
<tr>
<td>L_ACCT_TYPE</td>
<td>Table including higher level of categories dictated by the company for accounting systems</td>
<td>Account</td>
</tr>
<tr>
<td>L_SUB_ACCT</td>
<td>Table including the sub-categories used for account information; in some cases the sub-account is the same as the account</td>
<td>Account</td>
</tr>
<tr>
<td>L_BUSINESS_UNIT</td>
<td>Lowest level at which revenue and cost is tracked within a company</td>
<td>Business Unit</td>
</tr>
<tr>
<td>L_CORPORATION</td>
<td>Different subsidiaries and/or registered entities within the company</td>
<td>Business Unit</td>
</tr>
<tr>
<td>L_DISTRICT</td>
<td>Category within the geographical/revenue center hierarchy; parent of Business Unit</td>
<td>Business Unit</td>
</tr>
<tr>
<td>L_PARENT_CO</td>
<td>Parent or holding company that is a higher organizational unit for reporting purposes</td>
<td>Business Unit</td>
</tr>
<tr>
<td>L_CURRENCY</td>
<td>Table for storing the plan exchange rate with respect to the base currency; the rate is set by the company at the beginning of the year</td>
<td>Currency</td>
</tr>
<tr>
<td>L_CUSTOMER</td>
<td>Table listing individual or corporation that buys goods and/or services from the company</td>
<td>Customer</td>
</tr>
<tr>
<td>L_CUST_ADDRESS</td>
<td>Table including customer addresses</td>
<td>Customer</td>
</tr>
<tr>
<td>L_CUST_INDUSTRY</td>
<td>Table categorizing customers based on the nature of their business</td>
<td>Customer</td>
</tr>
<tr>
<td>L_CUST_PARENT_CO</td>
<td>Table listing customers' parent companies</td>
<td>Customer</td>
</tr>
<tr>
<td>L_EMPLOYEE</td>
<td>Table listing individuals working for the company who receive salary and benefits in return</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMPLOYEE_STATUS</td>
<td>Table indicating whether the employee is currently working for the company</td>
<td>Employee</td>
</tr>
<tr>
<td>L_EMPLOYEE_TITLE</td>
<td>Table including the nature of work or level of the employee</td>
<td>Employee</td>
</tr>
<tr>
<td>REL_EMP_BUSINESS_UNIT</td>
<td>Relate table that links employees to business unit</td>
<td>Employee</td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
<td>Analysis Area</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>L_GAAP</td>
<td>Table including Generally Accepted Accounting Principles categorizations for transactions</td>
<td>GAAP</td>
</tr>
<tr>
<td>L_INVOICE</td>
<td>Table containing the unique numeric identifier associated with an entry in the general ledger</td>
<td>Invoice</td>
</tr>
<tr>
<td>L_INVOICE_ITEM</td>
<td>Table containing the unique numeric identifier associated with each item within a given invoice</td>
<td>Invoice</td>
</tr>
<tr>
<td>L_CAL_DATE</td>
<td>Dimension/look-up table for Time at the Day level</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_MONTH</td>
<td>Dimension/look-up table for Time at the Month level</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_QTR</td>
<td>Dimension/look-up table for Time at the Quarter level</td>
<td>Time</td>
</tr>
<tr>
<td>L_CAL_YEAR</td>
<td>Dimension/look-up table for Time at the Year level</td>
<td>Time</td>
</tr>
<tr>
<td>L_VENDOR</td>
<td>Dimension/look-up table for the vendors (providers of goods or services to the company)</td>
<td>Vendor</td>
</tr>
<tr>
<td>L_VENDOR_TYPE</td>
<td>Dimension/look-up table for the vendor types</td>
<td>Vendor</td>
</tr>
<tr>
<td>F_ACCT</td>
<td>Table that stores the amounts per account, customer, business unit, vendor, and date; cata are never deleted or updated in this table but only inserted</td>
<td></td>
</tr>
<tr>
<td>F_ACCT_FC</td>
<td>Table that stores the amount forecasted per account and business unit; the forecasts should be set at quarter level and updated on a monthly basis</td>
<td></td>
</tr>
<tr>
<td>F_BUDGET</td>
<td>Table that stores the budget information assigned for the year, per sub-account and business unit</td>
<td></td>
</tr>
<tr>
<td>F_CASH_HIST</td>
<td>Table that stores the snapshot of outstanding receivable and payable amounts at the end of a quarter for each business unit</td>
<td></td>
</tr>
<tr>
<td>F_PAYABLE</td>
<td>Table that stores the current payable amounts by business unit, vendor, invoice item, and invoice date</td>
<td></td>
</tr>
<tr>
<td>F_PAYMENT</td>
<td>Table that stores the amounts paid by business unit, vendor, invoice item, invoice date, and payment date</td>
<td></td>
</tr>
<tr>
<td>F_RECEIPTS</td>
<td>Table that stores the amounts received by business unit, customer, invoice item, and invoice date</td>
<td></td>
</tr>
<tr>
<td>F_RECEIVABLE</td>
<td>Table that stores the current receivable amounts by business unit, customer, invoice item, and invoice date</td>
<td></td>
</tr>
</tbody>
</table>
This section describes each physical table column used in FRAM. The Data Type column information in the following table reflects an Oracle database-specific format; depending on what database type you use, your data type may appear differently. You can use the Erwin file (see the FRAM physical schema section above) to easily convert this information to another database type.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Column Name</th>
<th>Data Type</th>
<th>Nulls Allowed?</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>L_ACCT</td>
<td>ACCT_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for higher level of categories dictated by the company for accounting systems</td>
</tr>
<tr>
<td></td>
<td>ACCT_CLASS_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier for the classification of accounts</td>
</tr>
<tr>
<td></td>
<td>ACCT_DESC</td>
<td>VarChar (25)</td>
<td>NULL</td>
<td>Textual description for the categories used in the company accounting system</td>
</tr>
<tr>
<td></td>
<td>ACCT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the categories used in the company accounting system</td>
</tr>
<tr>
<td>L_ACCT_CLASS</td>
<td>ACCT_CLASS_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description for classification of accounts (typically cost, revenue, assets, liabilities, and equities)</td>
</tr>
<tr>
<td></td>
<td>ACCT_CLASS_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the classification of accounts</td>
</tr>
<tr>
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<td>ACCT_TYPE_DESC</td>
<td>VarChar (30)</td>
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<td>Textual description for higher level of categories dictated by the company for accounting systems</td>
</tr>
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<td>Unique identifier for higher level of categories dictated by the company for accounting systems</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------</td>
<td>---------------</td>
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<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_SUB_ACCT</td>
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<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the categories used in the company accounting system</td>
</tr>
<tr>
<td></td>
<td>SUB_ACCT_ID</td>
<td>VarChar (30)</td>
<td>NOT NULL</td>
<td>Unique identifier of the sub-category used for account information</td>
</tr>
<tr>
<td></td>
<td>SUB_ACCT_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the sub-category used for account information</td>
</tr>
<tr>
<td>L_BUSINESS_UNIT</td>
<td>DISTRICT_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier of a category within the Geographical/Revenue Center hierarchy</td>
</tr>
<tr>
<td></td>
<td>BUSINESS_UNIT_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td></td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td></td>
<td>CORPORATION_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier of a subsidiary and/or registered entity within the company</td>
</tr>
<tr>
<td>L_CORPORATION</td>
<td>CORPORATION_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of a subsidiary and/or registered entity within the company</td>
</tr>
<tr>
<td></td>
<td>CORPORATION_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of a subsidiary and/or registered entity within the company</td>
</tr>
<tr>
<td></td>
<td>PARENT_CO_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier of customers’ parent companies</td>
</tr>
<tr>
<td>L_DISTRICT</td>
<td>DISTRICT_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of a category within the Geographical/Revenue Center hierarchy</td>
</tr>
<tr>
<td></td>
<td>DISTRICT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of a category within the Geographical/Revenue Center hierarchy</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_PARENT_CO</td>
<td>PARENT_CO_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of a company’s parent or holding company; this is a higher organizational unit than company for reporting purposes</td>
</tr>
<tr>
<td></td>
<td>PARENT_CO_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Textual description of company's parent or holding company</td>
</tr>
<tr>
<td>L_CURRENCY</td>
<td>EXCH_RATE</td>
<td>Numeric (15,6)</td>
<td>NOT NULL</td>
<td>The Exchange Rate with respect to the base currency; the base currency is also listed with an exchange rate of 1.0; the exchange rate used here is the plan rate</td>
</tr>
<tr>
<td></td>
<td>CURRENCY_DESC</td>
<td>VarChar (30)</td>
<td>NOT NULL</td>
<td>Short text description of the currency</td>
</tr>
<tr>
<td></td>
<td>CURRENCY_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the currency in which the transaction was made</td>
</tr>
<tr>
<td></td>
<td>CURRENCY_NAME</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Long text description of the currency</td>
</tr>
<tr>
<td>L_CUSTOMER</td>
<td>CUSTOMER_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of customers</td>
</tr>
<tr>
<td></td>
<td>CUSTOMER_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description or name of customer</td>
</tr>
<tr>
<td></td>
<td>CUST_PRNT_CO_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier of customers’ parent companies</td>
</tr>
<tr>
<td></td>
<td>CUST_INDUSTRY_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of customers’ business nature</td>
</tr>
<tr>
<td></td>
<td>CUST_ADDRESS_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of customer addresses</td>
</tr>
<tr>
<td>L_CUST_ADDRESS</td>
<td>CUST_ADDRESS_DESC</td>
<td>VarChar (30)</td>
<td>NOT NULL</td>
<td>Textual description of customer addresses; it can represent one or more attributes like city, state, zip code, telephone number</td>
</tr>
<tr>
<td></td>
<td>CUST_ADDRESS_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of customer addresses</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
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<td>---------------------</td>
<td>----------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_CUST_INDUSTRY</td>
<td>CUST_INDUSTRY_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of customers' business nature</td>
</tr>
<tr>
<td></td>
<td>CUST_INDUSTRY_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of customers' business nature</td>
</tr>
<tr>
<td>L_CUST_PARENT_CO</td>
<td>CUST_PRNT_CO_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of customers' parent companies</td>
</tr>
<tr>
<td></td>
<td>CUST_PRNT_CO_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of customers' parent companies</td>
</tr>
<tr>
<td>L_EMPLOYEE</td>
<td>EMPLOYEE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description or name of individual working for the company</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of individual working for the company</td>
</tr>
<tr>
<td></td>
<td>EMP_TITLE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the nature of work or level of the employee</td>
</tr>
<tr>
<td></td>
<td>EMP_ACTIVE_FLG</td>
<td>VarChar (1)</td>
<td>NOT NULL</td>
<td>Indicates whether the employee is currently working for the company</td>
</tr>
<tr>
<td>L_EMPLOYEE_STATUS</td>
<td>EMP_ACTIVE_FLG</td>
<td>VarChar (1)</td>
<td>NOT NULL</td>
<td>Indicates whether the employee is currently working for the company</td>
</tr>
<tr>
<td>L_EMPLOYEE_TITLE</td>
<td>EMP_TITLE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the nature of work or level of the employee</td>
</tr>
<tr>
<td></td>
<td>EMP_TITLE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the nature of work or level of the employee</td>
</tr>
<tr>
<td>REL_EMP_BUSINESS_UNIT</td>
<td>EMPLOYEE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of individual working for the company</td>
</tr>
<tr>
<td></td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td>L_GAAP</td>
<td>GAAP_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for Generally Accepted Accounting Principles categorizations</td>
</tr>
<tr>
<td></td>
<td>GAAP_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description for Generally Accepted Accounting Principles categorizations</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------</td>
<td>---------------</td>
<td>----------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_INVOICE</td>
<td>INVOICE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique numeric identifier associated with an entry in the general ledger</td>
</tr>
<tr>
<td>L_INVOICE_ITEM</td>
<td>INVOICE_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique numeric identifier associated with an entry in the general ledger</td>
</tr>
<tr>
<td></td>
<td>INVOICE_ITEM_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique numeric identifier associated with each item within a given invoice</td>
</tr>
<tr>
<td>L_CAL_DATE</td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the year; this is a time dimension table; the current format for the year id is YYYY and is stored as an integer</td>
</tr>
<tr>
<td></td>
<td>DATE_ID</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Unique identifier for all dates in the system; all valid calendar dates for reporting purposes must be defined here</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the month; this is a time dimension table; the current format for the month id is YYYYMM and is stored as an integer</td>
</tr>
<tr>
<td></td>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier for the quarter; this is a time dimension table; the current format for the quarter id is YYYYQ and is stored as an integer</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_CAL_MONTH</td>
<td>LAST_MONTH_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>The id of the previous month; for example, for December 2001 it will be November 2001; stored in the same format as the MONTH_ID (YYYYMM)</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the month; this is a time dimension table; the current format for the month id is YYYYMM and is stored as an integer</td>
</tr>
<tr>
<td></td>
<td>MONTH_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description of the month</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the year; this is a time dimension table; the current format for the year id is YYYY and is stored as an integer</td>
</tr>
<tr>
<td></td>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the quarter; this is a time dimension table; the current format for the quarter id is YYYYQ and is stored as an integer</td>
</tr>
<tr>
<td>L_CAL_QTR</td>
<td>LAST_QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>The id of the previous quarter; for example, for Q4 2001 it will be Q3 2001; stored in the same format as the QTR_ID (YYYYQ)</td>
</tr>
<tr>
<td></td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the year; this is a time dimension table; the current format for the year id is YYYY and is stored as an integer</td>
</tr>
<tr>
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<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the quarter; this is a time dimension table; the current format for the quarter id is YYYYQ and is stored as an integer</td>
</tr>
<tr>
<td></td>
<td>QTR_DESC</td>
<td>Char (30)</td>
<td>NULL</td>
<td>Textual description of the quarter</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_CAL_YEAR</td>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the year; this is a time dimension table; the current format for the year id is YYYY and is stored as an integer</td>
</tr>
<tr>
<td></td>
<td>LAST_YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>The id of the previous year; for example, for 2002 it will be 2001; stored in the same format as the YEAR_ID (YYYY)</td>
</tr>
<tr>
<td>L_VENDOR</td>
<td>VENDOR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the vendors (providers of goods or services to the company)</td>
</tr>
<tr>
<td></td>
<td>VENDOR_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description or name of the vendors (providers of goods or services to the company)</td>
</tr>
<tr>
<td></td>
<td>VENDOR_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the vendor type</td>
</tr>
<tr>
<td>L_VENDOR_TYPE</td>
<td>VENDOR_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the vendor type</td>
</tr>
<tr>
<td></td>
<td>VENDOR_TYPE_DESC</td>
<td>VarChar (30)</td>
<td>NULL</td>
<td>Textual description or name of the vendor type</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
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<td>----------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_ACCT</td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td></td>
<td>DATE_ID</td>
<td>TimeStamp</td>
<td>NOT NULL</td>
<td>Unique identifier for all the dates in the system; all valid calendar dates for reporting purposes must be defined here</td>
</tr>
<tr>
<td></td>
<td>EMPLOYEE_ID</td>
<td>Numeric</td>
<td>NULL</td>
<td>Unique identifier of individual working for the company</td>
</tr>
<tr>
<td></td>
<td>CUSTOMER_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of customers</td>
</tr>
<tr>
<td></td>
<td>CURRENCY_ID</td>
<td>Numeric</td>
<td>NULL</td>
<td>Unique identifier of the currency in which the transaction was made</td>
</tr>
<tr>
<td></td>
<td>VENDOR_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier of the vendors (providers of goods or services to the company)</td>
</tr>
<tr>
<td></td>
<td>GAAP_ID</td>
<td>Numeric</td>
<td>NOT NULL</td>
<td>Unique identifier for Generally Accepted Accounting Principles categorizations</td>
</tr>
<tr>
<td></td>
<td>SUB_ACCT_ID</td>
<td>VarChar</td>
<td>NOT NULL</td>
<td>Unique identifier of the sub-category used for account information</td>
</tr>
<tr>
<td></td>
<td>ACCT_AMT</td>
<td>Numeric</td>
<td>NULL</td>
<td>Amounts per sub-account, vendor, business unit, customer, and date</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------</td>
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<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_ACCT.FC</td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td></td>
<td>SUB_ACCT_ID</td>
<td>VarChar (30)</td>
<td>NOT NULL</td>
<td>Unique identifier of the sub-category used for account information</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the month; this is a time dimension table; the current format for the month id is YYYYMM and is stored as an integer</td>
</tr>
<tr>
<td></td>
<td>ACCT.FC.AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Amounts forecast quarter by quarter and updated up to a monthly basis assigned to each sub-account and business unit</td>
</tr>
<tr>
<td></td>
<td>GAAP_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for Generally Accepted Accounting Principles categorizations</td>
</tr>
<tr>
<td>F_BUDGET</td>
<td>GAAP_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for Generally Accepted Accounting Principles categorizations</td>
</tr>
<tr>
<td></td>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the month; this is a time dimension table; the current format for the month id is YYYYMM and is stored as an integer</td>
</tr>
<tr>
<td></td>
<td>BUDGET.AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Dollar amount assigned each year at business unit and sub-account level</td>
</tr>
<tr>
<td></td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td></td>
<td>SUB_ACCT_ID</td>
<td>VarChar (30)</td>
<td>NOT NULL</td>
<td>Unique identifier of the sub-category used for account information</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------</td>
<td>-----------------</td>
<td>---------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_CASH_HIST</td>
<td>PAY_OPEN_AMT_EOFQ</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Sum total for all outstanding invoices at the end of a quarter</td>
</tr>
<tr>
<td></td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td></td>
<td>REC_OPEN_AMT_EOFQ</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Sum total for all outstanding customer invoices at the end of a quarter</td>
</tr>
<tr>
<td></td>
<td>QTR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier for the quarter; this is a time dimension table; the current format for the quarter id is YYYYQ and is stored as an integer</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>---------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_PAYABLE</td>
<td>CURRENCY_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier for the currency in which the transaction was made</td>
</tr>
<tr>
<td></td>
<td>INVOICE_DATE_ID</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Unique identifier for all the dates in the system; all valid calendar dates for reporting purposes must be defined here</td>
</tr>
<tr>
<td></td>
<td>VENDOR_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the vendors (providers of goods or services to the company)</td>
</tr>
<tr>
<td></td>
<td>DUE_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>Dates on which is payments are due; most vendors extend a grace period for payments in the range of 30-60 days depending on the nature of goods sold</td>
</tr>
<tr>
<td></td>
<td>INVOICE_ITEM_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique numeric identifier associated with each item within a given invoice</td>
</tr>
<tr>
<td></td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td></td>
<td>PAY_GROSS_AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Gross payable amount per business unit, vendor, invoice item, and invoice date</td>
</tr>
<tr>
<td></td>
<td>PAY_OPEN_AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Current payable amount per business unit, vendor, invoice item, and invoice date</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_PAYMENT</td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td></td>
<td>VENDOR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier of the vendors (providers of goods or services to the company)</td>
</tr>
<tr>
<td></td>
<td>PAYMENT_DATE</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Dates on which payments were made toward the items purchased on credit</td>
</tr>
<tr>
<td></td>
<td>PAID_AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Amount paid by the company to the vendor on the payment date for each invoice item, business unit, and invoice date</td>
</tr>
<tr>
<td></td>
<td>CURRENCY_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Currency in which the transaction was made</td>
</tr>
<tr>
<td></td>
<td>INVOICE_DATE_ID</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Unique identifier for all the dates in the system; all valid calendar dates for reporting purposes must be defined here</td>
</tr>
<tr>
<td></td>
<td>INVOICE_ITEM_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique numeric identifier associated with each item within a given invoice</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------</td>
<td>---------------</td>
<td>----------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_RECEIPTS</td>
<td>RECD_AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Amount of cash received toward payment of the invoice from the customer</td>
</tr>
<tr>
<td></td>
<td>CUSTOMER_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of customers</td>
</tr>
<tr>
<td></td>
<td>INVOICE_ITEM_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique numeric identifier associated with each item within a given invoice</td>
</tr>
<tr>
<td></td>
<td>RECEIPT_DATE</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Date that tracks changes to collection on the receivable; entered either when</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cash is received or amount is written off</td>
</tr>
<tr>
<td></td>
<td>INVOICE_DATE_ID</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Unique identifier for all the dates in the system; all valid calendar dates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>for reporting purposes must be defined here</td>
</tr>
<tr>
<td></td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>within a company</td>
</tr>
<tr>
<td></td>
<td>CURRENCY_ID</td>
<td>Numeric (38,0)</td>
<td>NULL</td>
<td>Unique identifier for the currency in which the transaction was made</td>
</tr>
<tr>
<td></td>
<td>WRITE_OFF_AMT</td>
<td>Numeric (15,6)</td>
<td></td>
<td>Amount written off (considered uncollectable or lost) by the company</td>
</tr>
<tr>
<td>Table Name</td>
<td>Column Name</td>
<td>Data Type</td>
<td>Nulls Allowed?</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F_RECEIVABLE</td>
<td>INVOICE_DATE_ID</td>
<td>TimeStamp (0)</td>
<td>NOT NULL</td>
<td>Unique identifier for all the dates in the system; all valid calendar dates for reporting purposes must be defined here</td>
</tr>
<tr>
<td></td>
<td>BUSINESS_UNIT_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of the lowest level at which revenue and cost is tracked within a company</td>
</tr>
<tr>
<td></td>
<td>INVOICE_ITEM_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique numeric identifier associated with each item within a given invoice</td>
</tr>
<tr>
<td></td>
<td>DUE_DATE</td>
<td>TimeStamp (0)</td>
<td>NULL</td>
<td>Dates on which payments are due; most companies extend a grace period to their customers for payments in the range of 30-60 days depending on the nature of goods sold</td>
</tr>
<tr>
<td></td>
<td>CURRENCY_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the currency in which the transaction was made</td>
</tr>
<tr>
<td></td>
<td>CUSTOMER_ID</td>
<td>Numeric (38,0)</td>
<td>NOT NULL</td>
<td>Unique identifier of customers</td>
</tr>
<tr>
<td></td>
<td>REC_GROSS_AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Gross receivable amount per business unit, customer, sales order, invoice item, and invoice date</td>
</tr>
<tr>
<td></td>
<td>REC_OPEN_AMT</td>
<td>Numeric (15,6)</td>
<td>NULL</td>
<td>Open receivable amount per business unit, customer, sales order, invoice item, and invoice date</td>
</tr>
</tbody>
</table>
Introduction

This appendix presents the logical data model on which the Sales and Distribution Analysis Module (SDAM) is built.

This appendix provides a description for

- business hierarchies, including their attributes, attribute definitions, relationships, forms, form expressions, lookup tables, and other tables
- module transformations and user hierarchies
- module facts

See Chapter 1, *Introduction*, for a general description, basic procedures, and additional details about understanding and working with SDAM’s logical data model.

Information can also be found by accessing each attribute’s definition using the Attribute Editor. The attributes can be found in the *Schema Objects/Attributes* folder. Double-click an attribute to open the Attribute Editor.
Prerequisites

This appendix assumes you have prior experience with logical data modeling and creating business intelligence applications using MicroStrategy technology.

SDAM logical schema

The following diagram represents the logical model shipped with SDAM. The logical schema diagram is available in an Erwin file, located in Program Files/MicroStrategy/Analytics Modules/Sdam/SDAM.erl.

Fact tables appear in gray.
Sales & Distribution Analysis Module Reference

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SDAM logical schema 187
Business hierarchies

SDAM assists analysts, managers, and executives to obtain insight into the various factors that affect a business’s inquiry, quotation, order, delivery, and returns processes. SDAM accomplishes this partly through a set of attributes (business concepts) and their relationships to each other. These attributes are arranged in a specific sequence according to a business structure, and that arrangement is called a hierarchy.

The key business hierarchies in the sales and distribution analysis process are

- **Organization**: The external organization responsible for selling the company’s materials, and the internal organization structures responsible for sales and delivery processing
- **Material**: The products or services sold by the company
- **Customer**: The entities to which materials are sold and distributed
- **Shipping Point**: Location through which materials are delivered to customers
- **Sales Document**: Tracks all sales transactions
- **Delivery Document**: Tracks all delivery transactions
- **Time**: The calendar time

Each business hierarchy is detailed in the following sections. For additional information on the hierarchies, see the MicroStrategy project definitions in SDAM’s Schema Objects/Attributes and Schema Objects/Facts folders. From one of these folders, double-click an attribute or fact to view definitions, properties, source tables, and so on.
Organization hierarchy

This hierarchy represents the company’s organizational structures, and is broken into the following subdivisions:

- External Organization: The external organization responsible for selling materials
- Internal Organization: The internal organization responsible for processing sales and delivery activities

In the logical data model, these subdivisions are defined as independent hierarchies.

External Organization hierarchy

This hierarchy represents the company’s external organization through which materials (products and services) are sold to customers. A sales organization can sell materials through different distribution channels.

Note the following:

- A check sign in the previous figure indicates the attribute is an *entry level* in the corresponding hierarchy.
- In the logical data model, Sales Organization and Distribution Channel are defined as independent entities and the relationship is established through the fact tables.
### Attribute | Description | Example
--- | --- | ---
Sales Organization | Organizational unit responsible for selling material or services. From the customer point of view, this is the unit that holds the responsibility for delivery and material liabilities.  
• It has two parent attributes: each Sales Organization is assigned to exactly one Company Code and one Industry Sector.  
• Each business transaction is linked to a sales organization. (It is one of the attribute’s keys in the fact tables). | USA West – responsible for direct sales and retail wholesale in the West region
Sales Organization Industry Sector | Industry to which the sales organization provides service.  
• An industry sector can have several assigned Sales Organizations (one-to-many relationship). | Retail, CPG, Telco, Chemical, Cross-Industry
Sales Organization Company Code | Accounting unit, consolidating the transactions of the sales organizations from a financial accounting perspective.  
• A company code can have several assigned Sales Organizations (one-to-many relationship). | The demo project models a company (Universal Computers) with several company codes, such as UC-UK or UC-USA
Distribution Channel | Channel through which saleable products and services reach customers.  
• Each business transaction is linked to a specific Distribution Channel. (It is one of the attribute’s keys in the fact tables). | Direct Sales, Finished Products Wholesales, Components Wholesales

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Sales Organization

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_ORG_ID</td>
<td>L_SALES_ORG</td>
<td>F_SALES_DOC_ITEM, F_DELIV_DOC_ITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_ORG_DESC</td>
<td>L_SALES_ORG</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Industry Sector</td>
<td>Many-to-one</td>
<td>L_SALES_ORG</td>
</tr>
<tr>
<td>None</td>
<td>Company Code</td>
<td>Many-to-one</td>
<td>L_SALES_ORG</td>
</tr>
</tbody>
</table>
### Sales Organization Industry Sector

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>INDUSTRY_ID</td>
<td>L_INDUSTRY</td>
<td>L_SALES_ORG</td>
</tr>
<tr>
<td>DESC</td>
<td>INDUSTRY_DESC</td>
<td>L_INDUSTRY</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Organization</td>
<td>None</td>
<td>One-to-many</td>
<td>L_SALES_ORG</td>
</tr>
</tbody>
</table>

### Sales Organization Company Code

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>COMP_CODE_ID</td>
<td>L_COMP_CODE</td>
<td>L_SALES_ORG</td>
</tr>
<tr>
<td>DESC</td>
<td>COMP_CODE_DESC</td>
<td>L_COMP_CODE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Organization</td>
<td>None</td>
<td>One-to-many</td>
<td>L_SALES_ORG</td>
</tr>
</tbody>
</table>

### Distribution Channel

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DIST_CHNL_ID</td>
<td>L_DIST_CHNL</td>
<td>F_SALES_DOC_ITEM, F_DELIV_DOC_ITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>DIST_CHNL_ID</td>
<td>L_DIST_CHNL</td>
<td>None</td>
</tr>
</tbody>
</table>
Internal Organization hierarchy

This hierarchy represents how the company organizes sales activities internally.

Note the following:

- A check sign in the previous figure indicates the attribute is an entry level in the corresponding hierarchy.

- The internal organization may have an additional attribute level, Sales Person (not implemented). Each sales group will have one or more salespeople assigned to it.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
| Sales Office   | Organizational unit responsible for sales within a specific geographical area.  
• It has a child attribute. One or more sales groups can be established within a sales office to differentiate areas of responsibility (one-to-many relationship). | Los Angeles, London, San Francisco, Paris, Boston |
| Sales Group    | Group of salespeople who are responsible for processing sales transactions for certain materials and/or customer groups.  
• Each Sales Group is assigned to exactly one Sales Office.  
• Each business transaction is linked to a specific sales group. (It is one of the attribute’s keys in the related fact tables.) | Large Accounts – LA, Direct Sales – SF, Wholesale Market – NY |

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.
## Sales Office

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_OFFICE_ID</td>
<td>L SALES OFFICE</td>
<td>L SALES GROUP</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_OFFICE_DESC</td>
<td>L SALES OFFICE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Group</td>
<td>None</td>
<td>One-to-many</td>
<td>L SALES GROUP</td>
</tr>
</tbody>
</table>

## Sales Group

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_GROUP_ID</td>
<td>L SALES GROUP</td>
<td>F SALES DOC ITEM, F DELIV DOC ITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_GROUP_DESC</td>
<td>L SALES GROUP</td>
<td>None</td>
</tr>
</tbody>
</table>
Material hierarchy

Materials are the goods and services that are the subject of business transactions. The attributes and relationships in the following figure represent the Material hierarchy.

A check sign in the previous figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Any good that is sold (products and services are combined under this term).</td>
<td>Universal Computer (UC) PC Economy 100,</td>
</tr>
<tr>
<td></td>
<td>• Material has a number of parent attributes used to group materials,</td>
<td>UC InkJet B/W E10, B/W Ink Cartridge</td>
</tr>
<tr>
<td></td>
<td>such as Material Division, Material Category, Material Type,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material Group, Product Hierarchy, and so on. They each have a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>one-to-many relationship with Material. Each business transaction is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>linked to a specific material. (It is one of the attribute’s keys in the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>related fact tables).</td>
<td></td>
</tr>
<tr>
<td>Material Type</td>
<td>Grouping of materials with the same basic characteristics.</td>
<td>Raw materials, semi-finished products,</td>
</tr>
<tr>
<td></td>
<td>• Materials are uniquely assigned to a material type.</td>
<td>finished products</td>
</tr>
<tr>
<td>Material</td>
<td>Organizational unit defining responsibility for sales of materials.</td>
<td>Computers, printers, supplies, and so on</td>
</tr>
<tr>
<td>Division</td>
<td>• Materials are uniquely assigned to one division.</td>
<td></td>
</tr>
</tbody>
</table>
### Attribute | Description | Example
--- | --- | ---
Material Category | Grouping of material according to common attributes. (These will be different for each company).  
• Materials are uniquely assigned to one category. | Single material, set of materials

Material Group | Grouping of materials, subdivided from a business perspective. (This will be different for each company).  
• Materials are uniquely assigned to one material group. | Large and medium companies, consumers, small business

Product Hierarchy | Dimensional grouping of material with similar features.  
SDAM includes a Product hierarchy with three attributes:  
• Product Hierarchy level 0 (Lowest level to which materials are directly assigned, containing the most specific product descriptions. See example.)  
• Product Hierarchy level 1.  
• Product Hierarchy level 2 (Highest level in the hierarchy, containing the most general, inclusive product descriptions. See example.) | • Level 0: Standard desktops, home desktops  
• Level 1: Desktops, notebooks  
• Level 2: PCs, servers

Material Industry Sector | Grouping of materials classified according to the industry sector to which they are targeted.  
• Materials are uniquely assigned to one industry sector.  
**Note:** This attribute uses as lookup a table alias defined based on L_INDUSTRY. | Retail, Telco, Cross-Industry, Finance

Material Pricing Group | Grouping of materials according to the pricing group to which they belong.  
• Materials are uniquely assigned to one pricing group. | High priced, low priced

---

**Note the following:**

- A number of assumptions were made when this analysis hierarchy was defined. The hierarchy includes a limited number of default grouping attributes, such as Material Division or Product Hierarchy, representing industry-standard material classifications. The module can be extended to include additional requirements.

- This hierarchy does not include any characteristic attributes defining measure and quantity specifications for the material, such as base unit of measure, sales unit, volume, and so on. The module can be extended to support them if required.
• All materials are assigned a base unit of measure; this usually represents the basic unit of measure in which the material is manufactured (for example, unit or kilogram). This module was designed with the assumption that all quantities will be measured based on the material “base unit of measure”; fact data about quantities is physically stored using the base unit.

• When materials are sold or delivered, they can be packed based on different units of measure (for example, an ink cartridge is sold as a pack of 10 units and delivered in packs of 5 units). The module can be extended to support other types of measures; it requires adding a coefficient to convert quantities when measured using different units and/or storing fact data about quantities in different units of measurement.

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following table.

**Material**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
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<tbody>
<tr>
<td>ID</td>
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<table>
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<tr>
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<th>Parents</th>
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<th>Table</th>
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<tbody>
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<tr>
<td>None</td>
<td>Material Division</td>
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<tr>
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<tr>
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<td>Material Group</td>
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<tr>
<td>None</td>
<td>Product Hierarchy</td>
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<tr>
<td>None</td>
<td>Level 0</td>
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</tr>
<tr>
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<td>Material Industry</td>
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<tr>
<td>None</td>
<td>Sector</td>
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<td></td>
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<tr>
<td>None</td>
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### Material Type

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<th>Table</th>
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### Material Division

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<tr>
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<table>
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### Material Category

<table>
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</table>

<table>
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<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

### Material Group

<table>
<thead>
<tr>
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<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>DESC</td>
<td>MAT_GROUP_DESC</td>
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</tr>
</tbody>
</table>

<table>
<thead>
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<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
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<td>L_MATERIAL</td>
</tr>
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</table>
### Product Hierarchy Level 0

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
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<td>L_PROD_HIER</td>
<td>L_MATERIAL</td>
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<tr>
<td>DESC</td>
<td>PROD_HIER_L0_DESC</td>
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<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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</table>

### Product Hierarchy Level 1

<table>
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<th>Other Tables</th>
</tr>
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<tbody>
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</table>

<table>
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<th>Relationship Type</th>
<th>Table</th>
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<tbody>
<tr>
<td>None</td>
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### Product Hierarchy Level 2

<table>
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<tbody>
<tr>
<td>ID</td>
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<td>None</td>
</tr>
<tr>
<td>DESC</td>
<td>PROD_HIER_L2_DESC</td>
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</tbody>
</table>

<table>
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<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Hierarchy Level 1</td>
<td>None</td>
<td>One-to-many</td>
<td>L_PROD_HIER</td>
</tr>
</tbody>
</table>
### Material Industry Sector

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
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</tr>
<tr>
<td></td>
<td>MAT_INDUSTRY_ID</td>
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<td>L_MATERIAL</td>
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<tr>
<td>DESC</td>
<td>INDUSTRY_DESC</td>
<td>L_MAT_INDUSTRY</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>None</td>
<td>One-to-many</td>
<td>L_MATERIAL</td>
</tr>
</tbody>
</table>

### Material Pricing Group

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>DESC</td>
<td>MAT_PRICE_GRP_DESC</td>
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<td>None</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>None</td>
<td>One-to-many</td>
<td>L_MATERIAL</td>
</tr>
</tbody>
</table>
Customer hierarchy

This hierarchy represents the customer to whom a company sells materials (the sold-to party in the business transaction).

A check sign in the previous figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer (sold-to party)</td>
<td>Person or company that places an order for goods or services.</td>
<td>Best Deals (a retailer that sell computers and printers), Trust Bank (a bank)</td>
</tr>
<tr>
<td></td>
<td>• Customer has a number of parent attributes such as Industry, Account Group, Region, and so on. There is a one-to-many relationship with all of them.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Each business transaction is associated with one customer.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: This attribute is referenced by different column names in the lookup (CUST_ID) and fact tables (SOLD_TO).</td>
<td></td>
</tr>
<tr>
<td>Customer Account Group</td>
<td>Grouping of customers by their location in reference to the company location.</td>
<td>Local customers, International customers</td>
</tr>
<tr>
<td></td>
<td>• Customers are uniquely assigned to one account group.</td>
<td></td>
</tr>
<tr>
<td>Customer Group</td>
<td>A company’s defined grouping of customers. In the SDAM default project, it indicates the type of customer.</td>
<td>Wholesalers, retailers, not assigned, industrial customers</td>
</tr>
<tr>
<td></td>
<td>• Customers are uniquely assigned to one customer group.</td>
<td></td>
</tr>
<tr>
<td>Customer Industry Sector</td>
<td>Grouping of customers according to the industry sector. <strong>Note</strong>: This attribute uses as lookup a table alias defined based on L_INDUSTRY.</td>
<td>Retail, Telco, Cross-Industry, Finance</td>
</tr>
</tbody>
</table>
Note the following:

- A number of assumptions were made when the Customer hierarchy was defined. A customer is a business partner to whom a company sells and delivers materials. There are different functions that a business partner may assume: sold-to party (company that places an order for products or services), ship-to party (company that receives the goods), bill-to party (company that receives the invoice for the goods delivered), and payer (company that pays for the goods). In a business transaction, the same customer can assume all these functions or several customers can be associated with different functions.

- In this module, only the sold-to party is modeled. The sold-to party is associated with the Customer hierarchy. Other partner functions can be added if required; they should be modeled as independent hierarchies based on the Customer hierarchy.

- This hierarchy includes a limited number of parent attributes, representing industry standard customer classifications. The module can be extended to include additional parents, such as Sales District, Number of Employees, Annual Sales, Customer Status, D & B code, and so on.

- This hierarchy does not include detailed customer information, such as address, phone number, tax number, postal code, and so on. These attributes can be added if required.

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.
Customer

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
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<tr>
<td>SOLD_TO</td>
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<td>F_SALES_DOC_ITEM, F_DELIV_DOC_ITEM</td>
<td></td>
</tr>
<tr>
<td>DESC</td>
<td>CUST_DESC</td>
<td>L_CUSTOMER</td>
<td>None</td>
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<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Customer Account Group</td>
<td>Many-to-one</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Group</td>
<td>Many-to-one</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Region</td>
<td>Many-to-one</td>
<td>L_CUSTOMER</td>
</tr>
<tr>
<td>None</td>
<td>Customer Industry</td>
<td>Many-to-one</td>
<td>L_CUSTOMER</td>
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</tbody>
</table>

Customer Account Group

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>DESC</td>
<td>CUST_ACC_GRP_DESC</td>
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<td>None</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CUSTOMER</td>
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</tbody>
</table>

Customer Group

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
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<tr>
<td>DESC</td>
<td>CUST_GRP_DESC</td>
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<td>None</td>
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<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
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<td>One-to-many</td>
<td>L_CUSTOMER</td>
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</table>
### Customer Industry

<table>
<thead>
<tr>
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<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
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<td>L_CUSTOMER</td>
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#### Children
- **Parent**: None
- **Relationship Type**: One-to-many
- **Table**: L_CUSTOMER

### Customer Region

<table>
<thead>
<tr>
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<th>Form Expression</th>
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<th>Other Tables</th>
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</thead>
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<td></td>
<td>CUST_REGION_ID</td>
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<td>L_CUSTOMER</td>
</tr>
<tr>
<td>DESC</td>
<td>REGION_DESC</td>
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<td>None</td>
</tr>
</tbody>
</table>

#### Children
- **Parent**: None
- **Relationship Type**: One-to-many
- **Table**: L_CUSTOMER
- **Parent**: Country
- **Relationship Type**: Many-to-one
- **Table**: L_CUST_REGION

### Customer Country

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
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<td>L_REGION</td>
</tr>
<tr>
<td>DESC</td>
<td>COUNTRY_DESC</td>
<td>L_COUNTRY</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Children
- **Parent**: None
- **Relationship Type**: One-to-many
- **Table**: L_REGION
Sales Document hierarchy

The sales document hierarchy is the structure that records all type of sales transactions, including inquiries, quotations, sales orders, and returns.

- Each sales document includes one or more document items, and each item refers to one of the materials associated with the sales transaction.

- General sales information, such as customer, is defined at the sales document level. Sales facts, such as quantities and amounts, are defined at the sales document item level.

The following diagram shows the structure of a sample sales order with two items:

![Diagram of a sample sales order with two items]

- **Sales Order – ID: Z001**
  - Customer: 102

- **Order Item – ID: 1**
  - Material: PC 100
  - Quantity: 100
  - Amount: $100,000

- **Order Item – ID: 2**
  - Material: Laser Printer A
  - Quantity: 20
  - Amount: $4,000
The sales document hierarchy is represented in the logical data model by the attributes and relationships in the following figure:

A check sign in the previous figure indicates the attribute is an entry level in the corresponding hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Document</td>
<td>Information that is common for all the sales documents. • Each sales document includes one or more items. • Each sales document is uniquely identified by a sales document ID.</td>
<td>Numeric or alpha-numeric ID</td>
</tr>
<tr>
<td>Sales Document Item</td>
<td>Information at the material level. • Each item in a sales document is uniquely identified by the combination of a sales document and a sales document item. • Sales document and sales document item IDs define a compound key. (They define a primary key for the fact table tracking sales transactions).</td>
<td>Numeric or alpha-numeric ID</td>
</tr>
<tr>
<td>Sales Document Type</td>
<td>Types of sales documents. • Each sales document is associated with one type (one-to-many relationship). <strong>Note:</strong> Some sales facts apply to only some document types; refer to the <em>Facts</em> section in this chapter for details.</td>
<td>Inquiries, quotations, sales orders, returns, and free-subsequent delivery</td>
</tr>
</tbody>
</table>
The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Sales Document

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
| Sales Document Status      | Processing status of the whole document.  
  • Each sales document has one status associated with it (one-to-many relationship).  
  • This status applies to all items in a sales document; it is calculated based on the status for the different document items. | Open: The document is being processed.  
  Complete: The document processing is complete.                                                                                       |
| Sales Document Item Status | Status of each document item.  
  • Each sales document item has an item status associated with it (one-to-many relationship).  
  • Status values depend on the document type. For example, an item in a quotation can have four different statuses, such as Open, Complete, Rejected, or Expired, while inquiries, sales orders, and return items can have only two statuses: Open or Complete. | Open, Complete, Rejected, Expired                                       |

### Sales Document Item

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_DOC_ID</td>
<td>F_SALES_DOC_ITEM</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Sales Document Status</td>
<td>Many-to-one</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
<tr>
<td>None</td>
<td>Sales Document Type</td>
<td>Many-to-one</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
<tr>
<td>Sales Document Item</td>
<td>None</td>
<td>One-to-many</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
</tbody>
</table>

### Sales Document Item

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Compound key: SALES_DOC_ITEM_ID and SALES_DOC_ID</td>
<td>F_SALES_DOC_ITEM</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
<tr>
<td>Children</td>
<td>Parents</td>
<td>Relationship Type</td>
<td>Table</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------</td>
<td>-------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>None</td>
<td>Sales Document</td>
<td>Many-to-one</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
<tr>
<td>None</td>
<td>Sales Document Item Status</td>
<td>Many-to-one</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
</tbody>
</table>

**Sales Document Type**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_DOC_TYPE_ID</td>
<td>L_SALES_DOC_TYPE</td>
<td>F_SALES_DOC_ITEM, F_DELIV_DOC_ITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_DOC_TYPE_DESC</td>
<td>L_SALES_DOC_TYPE</td>
<td>None</td>
</tr>
</tbody>
</table>

**Sales Document Status**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SALES_DOC_STS_ID</td>
<td>L_SALES_DOC_STATUS</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>SALES_DOC_STS_DESC</td>
<td>L_SALES_DOC_STATUS</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
</tbody>
</table>

**Sales Document Item Status**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SDOC_ITEM_STS_ID</td>
<td>L_SDOC_ITEM_STATUS</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>SDOC_ITEM_STS_DESC</td>
<td>L_SDOC_ITEM_STATUS</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
</tbody>
</table>
A sales document can have a reference document, which is a related, earlier document. For example, a sales order originates from a quotation; the quotation is the reference document for the sales order. A quotation often originates from an inquiry; the inquiry is the reference document for the quotation.

The reference document hierarchy is represented in the logical data model by the attributes and relationships in the following figure:

A check sign in the previous figure indicates the attribute is an entry level in the corresponding hierarchy.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
| Reference Document     | Related, previous document for a given sales document.  
  • Each reference document is uniquely identified by the reference document ID.  
  • The relationship with the sales document is established through the sales document fact table.  
  • Not all sales documents have a reference document.                                                                                       | Numeric or alpha-numeric ID                  |
| Reference Document Item| Reference document item for a sales document item.  
  • Each reference document is uniquely identified by a compound key defined based on the reference document ID and the reference document item ID.  
  • The relationship with the sales document item is established through the sales document fact table.  
  • Not all sales document items have a reference document item.                                                                          | Numeric or alpha-numeric ID                  |
| Reference Document Type| Types of reference documents.  
  • Each reference document is associated with one type (one-to-many relationship).                                                               | Inquiries, Quotations, Sales Orders, Returns |

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.

**Reference Document**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>REF_DOC_ID</td>
<td>F_SALES_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Reference Document Type</td>
<td>Many-to-one</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
<tr>
<td>Reference Document Item</td>
<td>None</td>
<td>One-to-many</td>
<td>F_SALES_DOC_ITEM</td>
</tr>
</tbody>
</table>

**Reference Document Item**

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Compound key: REF_DOC_ITEM_ID and REF_DOC_ID</td>
<td>F_SALES_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>
The delivery document hierarchy is the structure that records all types of delivery transactions, including outbound deliveries, return deliveries, and free-subsequent deliveries.

- Each delivery document includes one or more document items, and each document item refers to one of the materials associated with the delivery transaction.

- General delivery information, such as customer or shipping point, is defined at the document level. Delivery facts, such as quantities and delivery dates, are defined at the delivery document item level.

- Delivery documents originate from sales documents such as sales orders or returns. For example, if all sales order items have identical shipping criteria, a delivery transaction is processed to fulfill the sales order. However, if items have different shipping criteria, then multiple delivery transactions are created.
The following diagram shows the structure of a sample outbound delivery with two items, and its relationship with the associated sales order:

The delivery document hierarchy is represented in the logical data model by the attributes and relationships in the following figure:

Note the following:
- A check sign in the previous figure indicates the attribute is an entry level in the corresponding hierarchy.
Several independent attributes exist that can be related to the Delivery Document Item attribute. See the Delivery Processing Dates section in this chapter for information on these independent attributes.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
| Delivery Document          | Information that is common for all the delivery documents.  
• The delivery document includes one or more items with material information.  
• Each delivery document is uniquely identified by a delivery document ID.  
• Delivery documents can reference a sales document, such as sales orders. (The reference is defined in the delivery fact table). | Numeric or alpha-numeric ID                  |
| Delivery Document Item     | Information at the material level.  
• Each item in a delivery document is uniquely identified by the combination of a delivery document and a delivery document item.  
• Delivery document and delivery document item IDs define a compound key. (They define a primary key for the fact table tracking delivery transactions).  
• The delivery document item can reference a sales document item. (The reference is defined in the delivery fact table). |Numeric or alpha-numeric ID                  |
| Delivery Document Type     | Types of delivery documents.  
• Each delivery document is associated with one type (one-to-many relationship).  
**Note:** Some delivery facts apply to only some document types; see the Facts section in this chapter for details. |Outbound delivery, returns delivery, free-subsequent delivery |
| Delivery Document Status   | Status of the whole document.  
• Each delivery document has one status associated with it (one-to-many relationship).  
• This status applies to all items in a delivery document; it is calculated based on the status for the different document items. |Open: The document is being processed.  
Complete: The document processing is complete. |
| Delivery Document Item     | Status of each document item.  
• Each delivery document item has an item status associated with it (one-to-many relationship).  
• Status values depend on the document type. For example, an item in an outbound delivery may have several statuses, such as “open – pending material availability,” “open – pending arrival customer site,” and so on, defining different stages in the outbound delivery process. |Open, Complete                                |

The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.
### Delivery Document

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DELIV_DOC_ID</td>
<td>F_DELIV_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Delivery Document Status</td>
<td>Many-to-one</td>
<td>F_DELIV_DOC_ITEMITEM</td>
</tr>
<tr>
<td>None</td>
<td>Delivery Document Type</td>
<td>Many-to-one</td>
<td>F_DELIV_DOC_ITEMITEM</td>
</tr>
<tr>
<td>Delivery Document Item</td>
<td>None</td>
<td>One-to-many</td>
<td>F_DELIV_DOC_ITEMITEM</td>
</tr>
</tbody>
</table>

### Delivery Document Item

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Compound key: DELIV_DOC_ITEM_ID and DELIV_DOC_ID</td>
<td>F_DELIV_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Delivery Document</td>
<td>Many-to-one</td>
<td>F_DELIV_DOC_ITEMITEM</td>
</tr>
<tr>
<td>None</td>
<td>Delivery Document Item Status</td>
<td>Many-to-one</td>
<td>F_DELIV_DOC_ITEMITEM</td>
</tr>
</tbody>
</table>

### Delivery Document Type

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DELIV_DOC_TYPE_ID</td>
<td>L_DELIV_DOC_TYPE</td>
<td>F_DELIV_DOC_ITEMITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>DELIV_DOC_TYPE_ID</td>
<td>L_DELIV_DOC_TYPE</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery Document</td>
<td>None</td>
<td>One-to-many</td>
<td>F_DELIV_DOC_ITEMITEM</td>
</tr>
</tbody>
</table>
Delivery Document Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DELIV_DOC_STS_ID</td>
<td>L_DELIV_DOC_STATUS</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>DELIV_DOC_STS_DESC</td>
<td>L_DELIV_DOC_STATUS</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery Document</td>
<td>None</td>
<td>One-to-many</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
</tbody>
</table>

Delivery Document Item Status

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DDOC_ITEM_STS_ID</td>
<td>L_DDOC_ITEM_STATUS</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>DDOC_ITEM_STS_DESC</td>
<td>L_DDOC_ITEM_STATUS</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery Document Item</td>
<td>None</td>
<td>One-to-many</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
</tbody>
</table>

Shipping Point hierarchy

The Shipping Point hierarchy represents the organizational unit that is responsible for the delivery of goods to the customer.

The shipping point hierarchy is represented in the logical data model by the attribute in the following figure:
The logical data model can be extended to include additional attributes and hierarchies to track additional shipping information, such as carrier (a business partner that delivers goods to customers), plant (location where goods are manufactured), shipping route, shipping point region, destination region, and so on. If you make additions:

- The logical data model must be modified to add new attributes to the delivery fact table (in the attribute ID column that tracks values for each individual delivery transaction), and to the corresponding lookup and relationship tables.

- New attributes must define new hierarchies in the MicroStrategy project, or else they must be part of the Shipping Point hierarchy.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Point</td>
<td>Organizational unit that processes the deliveries. Each delivery transaction is associated with only one shipping point.</td>
<td>Los Angeles, Detroit, Dublin</td>
</tr>
</tbody>
</table>

The detailed definition of the attribute in the MicroStrategy metadata repository listed previously is shown in the following table.

### Shipping Point

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>SHIP_POINT_ID</td>
<td>L_SHIP_POINT</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
<tr>
<td>DESC</td>
<td>SHIP_POINT_DESC</td>
<td>L_SHIP_POINT</td>
<td>F_DELIV_DOC_ITEM</td>
</tr>
</tbody>
</table>
\section*{Time hierarchy}

The time hierarchy represents the calendar time.

The time hierarchy is represented in the logical data model by the attributes and relationships in the following figure:

\begin{center}
\includegraphics[width=0.5\textwidth]{time_hierarchy.png}
\end{center}

Note the following:

- A check sign in the previous figure indicates the attribute is an entry level in the corresponding hierarchy.

- Several independent attributes exist that can be related to the Time hierarchy through the Item Creation Date attribute. See the \textit{Delivery Processing Dates} section in this chapter for information on these independent attributes.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Calendar year.</td>
<td>2002</td>
</tr>
<tr>
<td>Quarter</td>
<td>Calendar quarter.</td>
<td>Q3-2003</td>
</tr>
</tbody>
</table>
The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Year

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>Calendar month.</td>
<td></td>
</tr>
<tr>
<td>Item Creation Date</td>
<td>Calendar date when the document item was created. This attribute references column CREATE_ITEM_DATE in the Sales and Delivery Document fact tables.</td>
<td>Nov, 2003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item Creation Date</td>
<td>Calendar date when the document item was created. This attribute references column CREATE_ITEM_DATE in the Sales and Delivery Document fact tables.</td>
<td>12/24/2002</td>
</tr>
</tbody>
</table>

### Quarter

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>YEAR_ID</td>
<td>L_CAL_YEAR</td>
<td>L_CAL_QTR, L_CAL_MONTH, L_TIME</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_QTR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>QUARTER_ID</td>
<td>L_CAL_QTR</td>
<td>L_CAL_MONTH, L_TIME</td>
</tr>
<tr>
<td>DESC</td>
<td>QUARTER_DESC</td>
<td>L_CAL_QTR</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Year</td>
<td>Many-to-one</td>
<td>L_CAL_QTR</td>
</tr>
<tr>
<td>Month</td>
<td>None</td>
<td>One-to-many</td>
<td>L_CAL_MONTH</td>
</tr>
</tbody>
</table>

### Month

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>MONTH_ID</td>
<td>L_CAL_MONT_H</td>
<td>L_TIME</td>
</tr>
<tr>
<td>DESC</td>
<td>MONTH_DESC</td>
<td>L_CAL_MONT_H</td>
<td>None</td>
</tr>
</tbody>
</table>

© 2004 MicroStrategy, Inc.
Item Creation Date

<table>
<thead>
<tr>
<th>Children</th>
<th>Parents</th>
<th>Relationship Type</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Quarter</td>
<td>Many-to-one</td>
<td>L_CAL_MONTH</td>
</tr>
<tr>
<td>Item Creation Date</td>
<td>None</td>
<td>One-to-many</td>
<td>L_TIME</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DATE_ID</td>
<td>L_TIME</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>CREATE_ITEM_DATE</td>
<td>None</td>
<td>F_SALES_DOC_ITEM, F_DELIV_DOC_ITEM</td>
</tr>
</tbody>
</table>

Delivery Processing Dates

A number of date attributes are associated with the processing of delivery documents. They are independent attributes in the logical data model. A relationship can be established with the Time hierarchy (through the Item Creation Date) or with the Delivery Document Item attribute.

These independent attributes are represented in the following figure:

A check sign in the previous figure indicates the attribute is an entry level in the corresponding hierarchy.
The detailed definitions of each attribute in the MicroStrategy metadata repository listed previously are shown in the following tables.

### Material Availability Date

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Availability Date</td>
<td>Date when materials are available for shipping</td>
</tr>
<tr>
<td>Loading Date</td>
<td>Date when loading starts</td>
</tr>
<tr>
<td>Material Issue Date</td>
<td>Actual date when materials are issued from the company’s shipping point to the customer</td>
</tr>
<tr>
<td>Planned Issue Date</td>
<td>Planned date when materials will be shipped from the company shipping point to the customer</td>
</tr>
<tr>
<td>Delivery Date</td>
<td>Date when the customer receives the materials</td>
</tr>
<tr>
<td>Confirmed Delivery Date</td>
<td>Confirmed date when materials will be delivered to the customer</td>
</tr>
<tr>
<td>Requested Delivery Date</td>
<td>Date requested by the customer to receive the materials</td>
</tr>
</tbody>
</table>

### Loading Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>LOAD_DATE</td>
<td>F_DELIV_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>

### Material Issue Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>MAT_ISSUE_DATE</td>
<td>F_DELIV_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>

### Planned Issue Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>PLAN_ISSUE_DATE</td>
<td>F_DELIV_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>
Delivery Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>DELIV_DATE</td>
<td>F_DELIV_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>

Confirmed Delivery Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>CONF_DELIV_DATE</td>
<td>F_DELIV_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>

Requested Delivery Date

<table>
<thead>
<tr>
<th>Form</th>
<th>Form Expression</th>
<th>Lookup Table</th>
<th>Other Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>REQ_DELIV_DATE</td>
<td>F_DELIV_DOC_ITEM</td>
<td>None</td>
</tr>
</tbody>
</table>

Transformations

SDAM includes the following time transformations to enable analysis of a selected time period compared to another time period. All these transformations are based on table transformations.

<table>
<thead>
<tr>
<th>Transformation</th>
<th>Definition</th>
<th>Attribute</th>
<th>Transformation Table</th>
<th>Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Month</td>
<td>Enables analysis of a selected month compared to the previous month</td>
<td>Month</td>
<td>L_CAL_MNTH</td>
<td>PREV_MNTH_ID</td>
</tr>
<tr>
<td>Previous Quarter</td>
<td>Enables analysis of a selected quarter compared to the previous quarter</td>
<td>Quarter</td>
<td>L_CAL_QTR</td>
<td>PREV_QTR_ID</td>
</tr>
<tr>
<td>Previous Year</td>
<td>Enables analysis of a selected year compared to the previous year</td>
<td>Year</td>
<td>L_CAL_YEAR</td>
<td>PREV_YEAR_ID</td>
</tr>
</tbody>
</table>
User hierarchies

SDAM includes several user hierarchies to facilitate navigation through some of the business hierarchies listed previously.

<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Level</th>
<th>Attribute</th>
<th>Entry Point?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>1</td>
<td>Customer Country</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation through the Customer hierarchy attributes.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Customer Region</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Customer Industry Sector</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Customer Group</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Customer Account Group</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Customer</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Hierarchy</td>
<td>Level</td>
<td>Attribute</td>
<td>Entry Point?</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------</td>
<td>---------------------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Material</td>
<td>1</td>
<td>Product Hierarchy Level 2</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation through the Material hierarchy attributes.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Product Hierarchy Level 1</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Product Hierarchy Level 0</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Material Division</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Material Category</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Material Group</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Material Industry Sector</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Material Type</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Material Pricing Group</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Material</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
| Product Hierarchy         | 1     | Product Hierarchy Level 2 | Yes          | - This user hierarchy allows you to navigate through the Product hierarchy from the top level to Material.  
<p>|                           |       |                           |              | - Product Hierarchy Level 2 is the entry point.                                               |
|                           | 2     | Product Hierarchy Level 1 | No           | - This hierarchy is used in prompts to dynamically select any element at any level of the Product hierarchy. |
|                           | 3     | Product Hierarchy Level 0 | No           |                                                                                               |
|                           | 4     | Material                  | No           |                                                                                               |
| Distribution Channel      | 1     | Distribution Channel      | Yes          | This user hierarchy defines drill navigation for Distribution Channel.                         |
| Sales Organization        | 1     | Sales Org. Company Code   | Yes          | This user hierarchy defines drill navigation for the Sales Organization hierarchy.            |
|                           | 1     | Sales Org. Industry Sector| Yes          |                                                                                               |
|                           | 2     | Sales Organization        | No           |                                                                                               |
| Internal Organization     | 1     | Sales Group               | Yes          | This user hierarchy defines drill navigation for the Internal Organization hierarchy.         |
|                           | 2     | Sales Office              | No           |                                                                                               |
| Shipping Point            | 1     | Shipping Point            | Yes          | This user hierarchy defines drill navigation for Shipping Point.                              |</p>
<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Level</th>
<th>Attribute</th>
<th>Entry Point?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Document</td>
<td>1</td>
<td>Sales Document Type</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation through the corresponding hierarchy.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Sales Document Status</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Sales Document</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Sales Document Item Status</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Sales Document Item</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Reference Document</td>
<td>1</td>
<td>Reference Document Type</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation through the corresponding hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Reference Document</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Reference Document Item</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Delivery Document</td>
<td>1</td>
<td>Delivery Document Type</td>
<td>Yes</td>
<td>This user hierarchy defines drill navigation through the corresponding hierarchy.</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Delivery Document Status</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Delivery Document</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Delivery Document Item Status</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Delivery Document Item</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>Year</td>
<td>Yes</td>
<td>• This user hierarchy allows you to navigate through the Time hierarchy.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Quarter</td>
<td>No</td>
<td>• Year is the entry point.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Month</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Date</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Time (Year to Month)</td>
<td>1</td>
<td>Year</td>
<td>Yes</td>
<td>This user hierarchy allows you to navigate through the Time hierarchy up to the Month level.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Quarter</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Month</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
Facts

This section describes the facts used in SDAM. The underlying processes are also explained briefly.

There are two groups of facts in SDAM:

- Facts measuring sales activities, which are based on sales documents
- Facts measuring delivery activities, which are based on delivery documents

For additional details, see the MicroStrategy project definitions in the Schema Objects/Attributes and Schema Objects/Facts folders. Double-click any attribute or fact to view definitions, properties, source tables, and so on.

Sales Document facts

Sales Document facts measure sales activities by tracking sales document amounts, costs, quantities, and the number of documents and document items.

All these facts are based on the fact table F_SALES_DOC_ITEM. Therefore, dimensional keys for these facts correspond to the fact table keys. Additional details, such as form expressions, links with physical schema tables and columns, and so on, can be found in the SDAM project by accessing the fact definition using the Fact Editor.

For details about physical tables and columns, see Physical Schema and Data Dictionary in Appendix C of this reference guide.
Note the following:

- All quantity facts are stored in the fact tables using the material base unit of measure. If other units of measure are required, additional fact columns can be added. For example, you can add a fact column with quantities in the sales unit, or attributes for “base unit,” “sales unit,” and so on. You can also add a coefficient to convert quantities to the units required. See the Material hierarchy section in this chapter for details.

- All amounts and costs are measured in a single currency. If transaction currency is required, add a “currency” attribute and an “exchange rate” to convert transaction amounts into required currencies.

<table>
<thead>
<tr>
<th>Fact</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Item Amount</td>
<td>The net transaction amount for each sales document item (after discounts or surcharges and before any taxes are applied). This is based on column NET_ITEM_AMOUNT from fact table F_SALES_DOC_ITEM. Value is expressed in the same currency for all records (single currency). Note: This fact does not apply to sales documents of type “Inquiry.”</td>
</tr>
<tr>
<td>Item Cost</td>
<td>The cost for each item (cost associated with the acquisition of a material). This is based on column ITEM_COST from fact table F_SALES_DOC_ITEM. Value is expressed in the same currency for all records (single currency). Note: This fact does not apply to sales documents of type “Inquiry.”</td>
</tr>
<tr>
<td>Quantity (Base Units)</td>
<td>The quantity of material associated with each sales document item. This is based on column ITEM_QTY_BU from fact table F_SALES_DOC_ITEM. It is measured in the material base unit.</td>
</tr>
<tr>
<td>Ordered Quantity Delivered (Base Units)</td>
<td>The quantity of goods, from a sales order item, already delivered to the customer (expressed in the material base units). This value is updated whenever a delivery for a sales order is completed. This is based on column ITEM_QTY_DELIV_BU from fact table F_SALES_DOC_ITEM. If the sales order is open this number may be smaller than ITEM_QTY_BU, indicating that some items are still pending delivery to the customer. Once the sales order is complete, this value must be equal to ITEM_QTY_BU indicating that the order was successfully completed. If the value is different, it can indicate incorrect processing of the order. It is measured in the material base unit. Note: This fact only applies to sales documents of type “Sales Order.”</td>
</tr>
</tbody>
</table>
### Backup Quantity (Base Units)

The quantity of goods, from a sales order item, that is pending delivery (expressed in the material base units). This value is updated based on the deliveries associated with the sales order.

- This is defined as \( \text{ITEM\_QTY\_BU} - \text{ITEM\_QTY\_DELIV\_BU} \). Both columns are from the fact table \( F\_SALES\_DOC\_ITEM \).
- Once the sales order is complete, this value must be equal to zero indicating that the order was successfully completed. If the value is different, it indicates incorrect processing of the order.
- It is measured in the material base unit.

**Note:** This fact only applies to sales orders.

### Backup Net Item Amount

The net amount of goods pending delivery. This value is updated based on the deliveries associated with the sales order.

- This is defined as \( \text{NET\_ITEM\_AMOUNT} \times (1 - \frac{\text{ITEM\_QTY\_DELIV\_BU}}{\text{ITEM\_QTY\_BU}}) \). Both columns are from the fact table \( F\_SALES\_DOC\_ITEM \).
- Once the sales order is complete, this value must be equal to zero.
- Value is expressed in the same currency for all records (single currency).

**Note:** This fact only applies to sales orders.

### Net Price (Base Units)

The net price for the material item in base units. It is calculated by dividing the Net Item Amount by the quantity in base units.

- This is defined as \( \frac{\text{NET\_ITEM\_AMOUNT}}{\text{ITEM\_QTY\_BU}} \). Both columns are from the fact table \( F\_SALES\_DOC\_ITEM \).
- Value is expressed in the same currency for all records (single currency).

**Note:** This fact does not apply to sales documents of type "Inquiry."

### SALES\_DOC\_ID

The unique identifier of the sales document. It is used to define count distinct of sales documents.

- This is based on column \( \text{SALES\_DOC\_ID} \) from fact table \( F\_SALES\_DOC\_ITEM \).

### SALES\_DOC\_ITEM\_ID

The unique identifier of an item within a specific sales document. It is used to define counts of sales document items.

- This is based on column \( \text{SALES\_DOC\_ITEM\_ID} \) from fact table \( F\_SALES\_DOC\_ITEM \).

### CUST\_ID from Sales Doc Fact Table

The unique identifier of the customer associated with the sales transaction. It is used to define count distinct of customers.

- This is based on column \( \text{SOLD\_TO} \) from fact table \( F\_SALES\_DOC\_ITEM \).

---

**Delivery Document facts**

Delivery Document facts track delivery document quantities, processing times, and the number of documents and document items.
The following diagram describes all the facts used to analyze delivery processing times:

All the facts are based on fact table F_DELIV_DOC_ITEM. Therefore, dimensional keys for those facts correspond to the fact table keys. Additional details, such as form expressions, links with physical schema tables and columns, and so on, can be found in the SDAM project by accessing the fact definition using the Fact Editor.

For details about physical tables and columns, see Physical Schema and Data Dictionary in Appendix C of this reference guide.

Note the following:

- All quantity facts are stored in the fact tables using the material base unit of measure. If other units of measure are required, additional fact columns can be added. For example, you can add a fact column with quantities in the sales unit. See the Material hierarchy section in this chapter for details.
- All costs are measured in a single currency. If transaction currency is required, add a “currency” attribute and an “exchange rate” to convert transaction amounts into required currencies.

- All processing times and delays are based on calculations on Dates columns (DATE data type), and return an integer value indicating the number of days between two dates. Date and time calculations may require special attention; for more information see *Calculating dates and times, and your database* in this chapter.

<table>
<thead>
<tr>
<th>Fact</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELIV_DOC_ID</td>
<td>Unique identifier of the delivery document. It is used to define the count distinct of delivery documents. &lt;br&gt;  • This is based on column DELIV_DOC_ID from fact table F_DELIV_DOC_ITEM.</td>
</tr>
<tr>
<td>DELIV_DOC_ITEM_ID</td>
<td>Unique identifier of an item within a specific delivery document. It is used to define counts of delivery document items.&lt;br&gt;  • This is based on DELIV_DOC_ITEM_ID from fact table F_DELIV_DOC_ITEM.</td>
</tr>
<tr>
<td>Confirmed Delivery Quantity (Base Units)</td>
<td>Confirmed quantity of material to be delivered for each transaction item.  &lt;br&gt;  • This is based on ITEM_CONF_QTY_BU from fact table F_DELIV_DOC_ITEM.  &lt;br&gt;  • It is measured in material base units.</td>
</tr>
<tr>
<td>Delivered Quantity (Base Units)</td>
<td>Quantity of material that is ultimately delivered for each transaction item. &lt;br&gt;  • This is based on ITEM_DELIV_QTY_BU from fact table F_DELIV_DOC_ITEM.  &lt;br&gt;  • It is measured in material base units.  &lt;br&gt;  • Fact value is zero until goods are delivered. The value is updated once delivery transaction is completed.</td>
</tr>
<tr>
<td>Difference between Delivery and Issue Date</td>
<td>Total time required to transport goods to the customer site, from the date they are issued from the company’s shipping point until the date they are received at the customer site.  &lt;br&gt;  • This is based on the calculation ([DELIV_DATE] - [MAT_ISSUE_DATE]); both columns are from fact table F_DELIV_DOC_ITEM.  &lt;br&gt;  • It is measured in days.</td>
</tr>
<tr>
<td>Difference between Delivery and Material Availability Date</td>
<td>Total processing time, from the date goods are available for packing and shipping (defined by the material availability date) until the date they arrive at the customer site.  &lt;br&gt;  • This is based on the calculation ([DELIV_DATE] - [MAT_AVAIL_DATE]); both columns are from fact table F_DELIV_DOC_ITEM.  &lt;br&gt;  • It is measured in days.</td>
</tr>
<tr>
<td>Fact</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Difference between Issue and Material Availability Date | Processing time required to package, load, and issue goods. It is defined as the difference between dates when goods are available for packing and shipping, defined by the material availability date, and the date they leave the company facilities.  
  - This is based on the calculation ([MAT_ISSUE_DATE] - [MAT_AVAIL_DATE]); both columns are from fact table F_DELIV_DOC_ITEM.  
  - It is measured in days. |
| Difference between Issue and Loading Date       | Processing time required to load and ship deliveries. It is defined as the difference between the loading start date and the date goods leave the company shipping facilities.  
  - This is based on the calculation ([MAT_ISSUE_DATE] - [LOAD_DATE]); both columns are from fact table F_DELIV_DOC_ITEM.  
  - It is measured in days. |
| Difference between Loading and Material Availability Date | Processing time required for picking and packing goods. It is defined as the difference between the dates when goods are available for delivery and when they are ready for loading.  
  - This is based on the calculation ([LOAD_DATE] - [MAT_AVAIL_DATE]); both columns are from fact table F_DELIV_DOC_ITEM.  
  - It is measured in days. |
| Delay between Confirmed and Actual Delivery Date | Delay between the date when goods are confirmed to arrive at the customer site and the actual date when goods are delivered to the customer.  
  - This is based on the calculation ([DELIV_DATE] – [CONF_DELIV_DATE]); both columns are from fact table F_DELIV_DOC_ITEM.  
  - It is measured in days. |
| Delay between Requested and Actual Delivery Date | Delay between the customer’s requested date for receiving the shipment and the actual arrival date.  
  - This is based on the calculation ([DELIV_DATE] - [REQ_DELIV_DATE]); both columns are from fact table F_DELIV_DOC_ITEM.  
  - It is measured in days. |
| Delay between Requested and Confirmed Delivery Date | Difference between the confirmed date for delivery of goods to the customer site and the date requested by the customer to receive the shipment.  
  - This is based on the calculation ([CONF_DELIV_DATE] - [REQ_DELIV_DATE]); both columns are from fact table F_DELIV_DOC_ITEM.  
  - It is measured in days. |
| Delay between Planned and Actual Issue Date     | Delay between the date when the shipment is scheduled to leave the company’s shipping point and the actual date when the goods leave the shipping point.  
  - This is based on the calculation ([MAT_ISSUE_DATE] - [PLAN_ISSUE_DATE]); both columns are from fact table F_DELIV_DOC_ITEM.  
  - It is measured in days. |
Calculating dates and times with your database

Calculating dates

Each database type has a different way to calculate dates. Depending on the type of database you have, you may be required to modify the default fact expressions for the fact you want to use.

The following table lists the different database vendors and shows examples of a fact expression modified for that database. The example used is the fact Difference between Delivery and Material Availability Date, from the table above.

<table>
<thead>
<tr>
<th>Database</th>
<th>Fact Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle</td>
<td>((DELIV_DATE] - MAT_AVAIL_DATE])</td>
</tr>
<tr>
<td>SQL Server</td>
<td>ApplySimple (&quot;datediff(day, #0, #1)&quot;, [DELIV_DATE], [MAT_AVAIL_DATE])</td>
</tr>
<tr>
<td>DB2</td>
<td>ApplySimple (&quot;DAYS(#0) - DAYS(#1)&quot;, [DELIV_DATE], [MAT_AVAIL_DATE])</td>
</tr>
<tr>
<td>Teradata</td>
<td>((DELIV_DATE] - [MAT_AVAIL_DATE])</td>
</tr>
</tbody>
</table>

Note: Default fact expressions use the Oracle standard.

Calculating times

You may want to calculate time differences using a different time scale than that used in the project, for example, hours or minutes. To use a different time scale, you must modify the logical data model to use aTIMESTAMP data type for dates fields, and modify fact expressions accordingly to use database-specific operators/functions.
Physical Schema and Data Dictionary

Introduction

This appendix provides a diagram of the physical schema that comes with the Sales and Distribution Analysis Module (SDAM). This appendix also provides descriptions of all the tables and columns in the default data warehouse.

Prerequisites

This appendix was written for consultants and developers implementing and customizing the SDAM application and for those building ETL routines to populate the data warehouse. It assumes you are familiar with basic RDBMS concepts and Erwin data modeling.
SDAM physical schema

The following diagram represents the physical schema shipped with SDAM. The physical schema is available in an Erwin file, located in Program Files/MicroStrategy/Analytics Modules/Sdam/SDAM.erl.

Fact tables appear in teal (color) or gray (black and white).
Table information

This section describes each physical table used in SDAM.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Table Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>F_SALES_DOC_ITEM</td>
<td>Fact table containing all the sales document transactions.</td>
</tr>
<tr>
<td></td>
<td>• Fact data stored at sales document and sales document item levels (primary keys). Includes keys of hierarchies defining transaction and used for analysis (material, sales organization, and so on).</td>
</tr>
<tr>
<td></td>
<td>• Includes two Time keys, Create Item Date (date when document item was created) and Change Item Date (last time record was updated). Create Item Date is Time key for analysis.</td>
</tr>
<tr>
<td></td>
<td>• Includes two status fields for sales document and sales document items, indicating processing status.</td>
</tr>
<tr>
<td></td>
<td>• Fact data includes Net Item Amount, Item Quantity, Item Quantity Delivered (fact is updated based on deliveries associated with sales transaction), and Item Cost. Some fact columns only apply to specific document types; see the Column information section in this chapter for details.</td>
</tr>
<tr>
<td></td>
<td>Data is updated in the following cases:</td>
</tr>
<tr>
<td></td>
<td>• Each time a sales document is created, new records are added.</td>
</tr>
<tr>
<td></td>
<td>• If a sales document is updated, records are updated (historical data is not stored). The Change Date column indicates the last time the record was updated.</td>
</tr>
<tr>
<td></td>
<td>• If a sales document and/or sales document item is deleted from the operational system, the corresponding records are deleted from this table.</td>
</tr>
<tr>
<td>F_DELIV_DOC_ITEM</td>
<td>Fact table containing all the delivery document transactions.</td>
</tr>
<tr>
<td></td>
<td>• Fact data is stored at delivery document and delivery document item levels (primary keys). Includes keys of hierarchies defining transaction and used for analysis (material, shipping point, and so on).</td>
</tr>
<tr>
<td></td>
<td>• Includes two Time keys, Create Item Date (date when document item was created) and Change Item Date (last time record was updated). Create Item Date is used as Time key for analysis.</td>
</tr>
<tr>
<td></td>
<td>• Includes two status fields for delivery document and delivery document items, indicating processing status.</td>
</tr>
<tr>
<td></td>
<td>• Fact data includes confirmed and delivered quantity, item shipping cost, and delivery-related dates to calculate delivery processing times. Some fact columns only apply to specific types of documents; refer to the Column information section in this chapter for details.</td>
</tr>
<tr>
<td></td>
<td>Data is updated in the following cases:</td>
</tr>
<tr>
<td></td>
<td>• Each time a delivery document is created, new records are added.</td>
</tr>
<tr>
<td></td>
<td>• If a delivery document is updated, records are updated (historical data is not stored). The Change Date column indicates the last time the record was updated.</td>
</tr>
<tr>
<td></td>
<td>• If a delivery document and/or document items are deleted from the operational system, the corresponding records are deleted from this table.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_CAL_MONTH</td>
<td>Lookup table for Calendar Month attribute.</td>
</tr>
<tr>
<td></td>
<td>• It includes the relationship with Calendar Quarter and Year.</td>
</tr>
<tr>
<td></td>
<td>• It includes the Previous Month relationship to calculate monthly trends.</td>
</tr>
<tr>
<td>L_CAL_QTR</td>
<td>Lookup table for Calendar Quarter attribute.</td>
</tr>
<tr>
<td></td>
<td>• It includes the relationship with Calendar Year.</td>
</tr>
<tr>
<td></td>
<td>• It includes the Previous Quarter relationship to calculate quarterly trends.</td>
</tr>
<tr>
<td>L_CAL_YEAR</td>
<td>Lookup table for Calendar Year attribute.</td>
</tr>
<tr>
<td></td>
<td>• It includes the Previous Year relationship to calculate yearly trends.</td>
</tr>
<tr>
<td>L_COMP_CODE</td>
<td>Lookup table for Company Code attribute.</td>
</tr>
<tr>
<td>L_COUNTRY</td>
<td>Lookup table for Customer Country attribute.</td>
</tr>
<tr>
<td>L_CUSTOMER</td>
<td>Lookup table for the Customer attribute.</td>
</tr>
<tr>
<td></td>
<td>• This table is used as the lookup for a number of customer characteristic attributes such as Customer Account Group, Customer Group, and Customer Classification.</td>
</tr>
<tr>
<td></td>
<td>• The table is also used to define relationships between Customer and other characteristic attributes (Customer Industry Sector, Customer Region, Customer Account Group, Customer Group, and Customer Classification).</td>
</tr>
<tr>
<td></td>
<td>• In this module, the customer is associated with the sold-to party function.</td>
</tr>
<tr>
<td></td>
<td>• If other business functions such as ship-to party, bill-to party, and payer are required, a table alias can be created to refer each of the different attributes to the same physical table.</td>
</tr>
<tr>
<td></td>
<td>• There is one record for each customer in the system.</td>
</tr>
<tr>
<td></td>
<td>Data is updated in the following cases:</td>
</tr>
<tr>
<td></td>
<td>• When a new customer is added to the system, a record is added to this table.</td>
</tr>
<tr>
<td></td>
<td>• If data for a customer changes, the corresponding record is updated (historical data is not recorded).</td>
</tr>
<tr>
<td>L_DDOC_ITEM_STATUS</td>
<td>Lookup table for the Delivery Document Item Status attribute.</td>
</tr>
<tr>
<td></td>
<td>• This table stores the different statuses that a delivery document item can have during processing (Open, Open-Pending Material Availability, Open-Pending Goods Issue, Complete, and so on).</td>
</tr>
<tr>
<td>L_DELIV_DOC_STATUS</td>
<td>Lookup table for the Delivery Document Status attribute.</td>
</tr>
<tr>
<td></td>
<td>• This table stores the different statuses that delivery documents can have during processing (Open, Complete, and so on).</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> These statuses are different depending on the type of document; values may apply only to specific document types.</td>
</tr>
<tr>
<td>L_DELIV_DOC_TYPE</td>
<td>Lookup table for the Delivery Document Type attribute.</td>
</tr>
<tr>
<td></td>
<td>• This table stores the different types of delivery documents that are processed (Outbound Delivery, Return Delivery, Free-subsequent Delivery, and so on).</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> These statuses are different depending on the type of document; values may apply only to specific document types.</td>
</tr>
<tr>
<td>L_DIST_CHNL</td>
<td>Lookup table for the Distribution Channel attribute.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Table Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>L_DIVISION</td>
<td>Lookup table for the Material Division attribute.</td>
</tr>
</tbody>
</table>
| L_INDUSTRY          | Lookup table for Industry Sector.  
• This table is used in several hierarchies where an Industry Sector attribute exists, such as Sales Organization, Material, and Customer. A logical table alias is defined in the MicroStrategy project to reference the same physical table in the different hierarchies. |
| L_MATERIAL          | Lookup table for the Material attribute.                                                                                                           
• This table is used as the lookup for a number of characteristic attributes such as Material Type, Material Category, Material Group, and Material Pricing Group. 
• The table is also used to define relationships between Material and other characteristic attributes (Material Division, Material Industry Sector, Product Hierarchy, Material Group, and so on). 
• There is one record for each material in the system. 
Data is updated in the following cases: 
• When a new material is added to the system, a record is added to this table. 
• If data for a material changes, the corresponding record is updated (historical data is not recorded). |
| L_PROD_HIER         | Lookup and relationship table for all the attributes in the Product hierarchy (Product Hierarchy Level 0, Level 1, and Level 2). 
When data is updated: 
• If relationships between different levels change, the record is updated, losing any historical record of the previous structure. |
| L_REF_DOC_TYPE      | Lookup table for the Reference Document Type attribute.  
This table stores the different types of documents processed (Quotation, Sales Order, Return, Outbound Delivery, Return Delivery, and so on). |
| L_REGION            | Lookup table for the Customer Region attribute.                                                                                                    
• This is also the relationship table between Customer Region and Country. |
| L_SALES_DOC_STATUS  | Lookup table for the Sales Document Status attribute.                                                                                                   
• This table stores the different statuses that a sales document can have during processing (Open, Complete, and so on). 
**Note:** These statuses are different depending on the type of document; values may apply only to specific document types. |
| L_SALES_DOC_TYPE    | Lookup table for the Sales Document Type attribute.                                                                                                   
• This table stores the different types of sales documents processed (Quotation, Sales Order, Inquiry, Return, and so on). |
| L_SALES_GROUP       | Lookup table for the Sales Group attribute.                                                                                                           
• Also the relationship table between Sales Office and Sales Group. |
| L_SALES_OFFICE      | Lookup table for the Sales Office attribute.                                                                                                                                                                |
| L_SALES_ORG         | Lookup table for the Sales Organization attribute.                                                                                                    
• This table is used to define relationships with the characteristic attributes associated with Sales Organization (Company Code and Industry Sector). |
This section describes each physical table column used in SDAM.

The Data Type column information in the following table reflects an Oracle database-specific format; depending on what database type you use, your data type may appear differently. You can use the Erwin file (see the SDAM physical schema section above) to easily convert this information to another database type.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Primary Key (PK) / Foreign Key (FK)</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table: F_SALES_DOC_ITEM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SALES_DOC_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the sales document. With Sales Document Item, it defines the table primary key.</td>
</tr>
<tr>
<td>SALES_DOC_ITEM_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the sales document item. With Sales Document, it defines the table primary key.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Primary Key (PK) / Foreign Key (FK)</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SALES_DOC_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Identifies the type of sales document. Column value is the same for all items in the sales document.</td>
</tr>
</tbody>
</table>
| SALES_DOC_STS_ID    | Numeric (38,0) | FK                                  | Identifies the status of the sales document. For example, Open indicates the document is being processed while Complete indicates that processing has been completed. Column value is the same for all items in the sales document. For example:  
  • If the status for all document items is complete, the document status is set to Complete.  
  • If one item has a status of Open but all other items have a Complete status, the document status is set to Open.  
  Note: Statuses are different depending on the type of document; values may apply only to specific document types. |
| SDOC_ITEM_STS_ID    | Numeric (38,0) | FK                                  | Unique identifier for the sales document item status. For example, Open indicates the document item is being processed while Complete indicates that processing has been completed. Values can differ for the different items in a document.  
  Note: Statuses are different depending on the type of document; values may apply only to specific document types. |
<p>| SALES_GROUP_ID      | Numeric (38,0) | FK                                  | Identifies the sales group associated with the sales document. Column value is the same for all items in the sales document. |
| DIST_CHNL_ID        | Numeric (38,0) | FK                                  | Identifies the distribution channel associated with the sales document. Column value is the same for all items in the sales document. |
| SALES_ORG_ID        | Numeric (38,0) | FK                                  | Identifies the sales organization associated with the sales document. Column value is the same for all items in the sales document. |
| MATERIAL_ID         | Numeric (38,0) | FK                                  | Identifies the material associated with each of the sales document items. |
| CREATE_ITEM_DATE    | TimeStamp (0)   | FK                                  | Date on which the item was created. Used as the time key for analysis. |</p>
<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Primary Key (PK) / Foreign Key (FK)</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE_ITEM_DATE</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Last date on which the item was changed.</td>
</tr>
<tr>
<td>REF_DOC_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Reference document associated with the sales document. Column contains values only if there is a preceding document; if not, the column is empty.</td>
</tr>
<tr>
<td>REF_DOC_ITEM_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Reference document item for the sales document item. Column contains values only if there is a preceding document; if not, the column is empty. Column value is the same for all items in the sales document.</td>
</tr>
<tr>
<td>REF_DOC_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Identifies the document type for the preceding document. Column contains values only if there is a preceding document; if not, the column is empty. Column value is the same for all items in the sales document.</td>
</tr>
<tr>
<td>SOLD_TO</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Identifies the customer associated with the sales document. In this module, customer is associated with the sold-to party function. This column references CUST_ID column in the Customer lookup (L_CUSTOMER). Column value is the same for all items in the sales document.</td>
</tr>
<tr>
<td>NET_ITEM_AMOUNT</td>
<td>Numeric (15,3)</td>
<td></td>
<td>Net transaction amount for each sales document item. This is the value after discounts or surcharges and before any taxes are applied.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Value is expressed in the same currency for all records (single currency).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If support for different currencies is required, currency and exchange rate information must be added to the transaction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• The column does not apply to inquiry documents; in that case, the field will be empty.</td>
</tr>
<tr>
<td>ITEM_QTY_BU</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Material quantity for each item. Measured in the material’s base unit.</td>
</tr>
</tbody>
</table>
ITEM_QTY_DELIV_BU | Numeric (38,0) | **Primary Key (PK) / Foreign Key (FK)** | Material quantity already delivered for a sales document item.  
- Measured in the material's business unit.  
- This column is only measured for sales documents that have a corresponding outbound delivery such as Outbound Deliveries or Free Deliveries.  
- Column value will be updated based on deliveries associated with the sales document; when a delivery is complete the corresponding delivery quantity is updated in this field.

ITEM_COST | Numeric (15,3) | | Cost for each sales document item. The cost associated with the acquisition of a material.  
- Value is expressed in the same currency for all records (single currency).  
- If support for different currencies is required, currency and exchange rate information must be added to the transaction.  
- The column does not apply to inquiry documents; in that case, the field will be empty.

### Table: F_DELIV_DOC_ITEM

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Primary Key (PK) / Foreign Key (FK)</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELIV_DOC_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the delivery document. With Delivery Document Item, it defines the table primary key.</td>
</tr>
<tr>
<td>DELIV_DOC_ITEM_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the delivery document item. With Delivery Document, it defines the table primary key.</td>
</tr>
<tr>
<td>DELIV_DOC_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Identifies the type of delivery document. Column value is the same for all items in the document.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Primary Key (PK) / Foreign Key (FK)</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------</td>
<td>-------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| DELIV_DOC_STS_ID    | Numeric (38,0) | FK                                   | Identifies the processing status of the delivery document. For example, Open indicates delivery is being processed and Complete indicates that processing was completed. Column value is the same for all items in the document. For example:  
• If status for all document items is complete, the document status is set to Complete.  
• If one item has a status of Open but all other items have a Complete status, the document status is set to Open.  
**Note:** Statuses are different depending on the type of document; values may apply only to specific document types.                                                                                                                                                                                                                     |
<p>| DDOC_ITEM_STS_ID    | Numeric (38,0) | FK                                   | Unique identifier for the delivery document item status, indicating processing status. For example, Open-Pending Material Availability indicates delivery is on hold until materials are available. Value can differ for the different items in a document. <strong>Note:</strong> These statuses are different depending on the type of document; values may apply only to specific document types.                                                                                       |
| DIST_CHNL_ID        | Numeric (38,0) | FK                                   | Unique identifier for the distribution channel associated with the delivery transaction. Column value is the same for all items in the delivery document.                                                                                                                                                                                                 |
| SALES_ORG_ID        | Numeric (38,0) | FK                                   | Unique identifier for the sales organization associated with the delivery transaction. Column value is the same for all items in the delivery document.                                                                                                                                                                                                 |
| SALES_GROUP_ID      | Numeric (38,0) | FK                                   | Unique identifier for the sales group associated with the delivery transaction. Column value is the same for all items in the delivery document.                                                                                                                                                                                                 |
| MATERIAL_ID         | Numeric (38,0) | FK                                   | Unique identifier for the material associated with the delivery item.                                                                                                                                                                                                                                                                                                                                 |</p>
<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Primary Key (PK) / Foreign Key (FK)</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLD_TO</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Identifies the customer associated with the delivery document. In SDAM, customer is associated with the sold-to party function. This column references CUST_ID column in the Customer lookup (L_CUSTOMER). Column value is the same for all items in the delivery document.</td>
</tr>
<tr>
<td>SHIP_POINT_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Unique identifier for the shipping point from where materials are delivered to the customer. Column value is the same for all items in the delivery document.</td>
</tr>
<tr>
<td>CREATE_ITEM_DATE</td>
<td>TimeStamp (0)</td>
<td>FK</td>
<td>Date on which the item was created. This column is used as the time key for analysis.</td>
</tr>
<tr>
<td>CHANGE_ITEM_DATE</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Last date on which the item was changed.</td>
</tr>
<tr>
<td>SALES_DOC_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Identifies the sales document originating the delivery. Column contains values only if there is a preceding sales document; if not, the column is empty. Column value is the same for all items in the delivery document. Note: This module assumes that delivery documents only have sales documents as preceding documents.</td>
</tr>
<tr>
<td>SALES_DOC_ITEM_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Identifies the sales document item originating the delivery item. Column contains values only if there is a preceding document; if not, the column is empty.</td>
</tr>
<tr>
<td>SALES_DOC_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Identifies the sales document type for the preceding document. Column value is the same for all items in the delivery document.</td>
</tr>
<tr>
<td>ITEM_CONF_QTY_BU</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Quantity confirmed for delivery to the customer. Defined at the document item level. Value is measured in the material’s base unit.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Primary Key (PK) / Foreign Key (FK)</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------</td>
<td>-------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| ITEM_DELIV_QTY_BU       | Numeric (38,0)  |                                     | Actual quantity delivered to the customer for each document item. When delivery status is Open, this column indicates whether some quantities are pending delivery. When delivery status is Complete, this column indicates:  
  • If delivery is correct, this value must be equal to Confirmed Quantity.  
  • If delivery is not correct, there is a partial delivery to the customer.  
  Value is measured in the material's base unit. |
<p>| ITEM_SHIP_COST          | Numeric (15,3)  |                                     | Cost associated with shipping all the materials in a delivery document item to the customer. Value is expressed in a single currency (the one used for analysis). |
| REQ_DELIV_DATE          | TimeStamp (0)   |                                     | Date requested by customer to receive the materials. Date is defined at the document item level.                                             |
| CONF_DELIV_DATE         | TimeStamp (0)   |                                     | Confirmed date when materials will be delivered to the customer. Date is defined at the document item level.                                  |
| DELIV_DATE              | TimeStamp (0)   |                                     | Date when customer receives the materials. Date is defined at the document item level.                                                   |
| MAT_AVAIL_DATE          | TimeStamp (0)   |                                     | Date when materials are available for packing and shipping. Date is defined at the document item level. Column does not apply for return deliveries, only for those deliveries involving outbound shipping. For return deliveries, the field is empty. |
| LOAD_DATE               | TimeStamp (0)   |                                     | Date when loading starts. Date is defined at the document item level. Column does not apply for return deliveries, only for those deliveries involving outbound shipping. The field is empty for return deliveries. |
| PLAN_ISSUE_DATE         | TimeStamp (0)   |                                     | Planned date when materials leave the company’s shipping location to arrive on time at the customer site. Date is defined at the document item level. Column does not apply for return deliveries, only for those deliveries involving outbound shipping. The field is empty for return deliveries. |</p>
<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Primary Key (PK) / Foreign Key (FK)</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT_ISSUE_DATE</td>
<td>TimeStamp (0)</td>
<td></td>
<td>Actual date when materials are issued from the company's shipping point to the customer. Date is defined at the document item level. Column does not apply for return deliveries, only for those deliveries involving outbound shipping. The field is empty for return deliveries.</td>
</tr>
<tr>
<td>Table: L_CAL_MONTH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for month.</td>
</tr>
<tr>
<td>MONTH_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Month description.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Unique identifier for year. References YEAR_ID in L_YEAR.</td>
</tr>
<tr>
<td>QUARTER_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Unique identifier for quarter. References QUARTER_ID in L_QUARTER.</td>
</tr>
<tr>
<td>PREV_MONTH_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Column identifying the ID of the previous month. Used to define previous month transformation for historical trend analysis.</td>
</tr>
<tr>
<td>Table: L_CAL_QTR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUARTER_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for quarter.</td>
</tr>
<tr>
<td>QUARTER_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Quarter description.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Unique identifier for year. References YEAR_ID in L_YEAR.</td>
</tr>
<tr>
<td>PREV_QTR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Column identifying the ID of the previous quarter. Used to define previous quarter transformation for historical trend analysis.</td>
</tr>
<tr>
<td>Table: L_CAL_YEAR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for year.</td>
</tr>
<tr>
<td>PREV_YEAR_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Column identifying the ID of the previous year. Used to define previous year transformation for historical trend analysis.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Primary Key (PK) / Foreign Key (FK)</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------</td>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Table: L_COMP_CODE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP_CODE_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for company code.</td>
</tr>
<tr>
<td>COMP_CODE_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Company code description.</td>
</tr>
<tr>
<td><strong>Table: L_COUNTRY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COUNTRY_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the customer country.</td>
</tr>
<tr>
<td>COUNTRY_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Country description.</td>
</tr>
<tr>
<td><strong>Table: L_CUSTOMER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUST_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the customer. References the SOLD_TO column in fact tables.</td>
</tr>
<tr>
<td>CUST_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Customer name.</td>
</tr>
<tr>
<td>CUST_ACC_GRP_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the customer account group associated with the customer.</td>
</tr>
<tr>
<td>CUST_ACC_GRP_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Description for the account group. Also used as lookup for this attribute.</td>
</tr>
<tr>
<td>CUST_GRP_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the customer group associated with the customer.</td>
</tr>
<tr>
<td>CUST_GRP_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Customer group description. Also used as lookup for this attribute.</td>
</tr>
<tr>
<td>CUST_IND_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Unique identifier for industry sector associated with the customer. Column references INDUSTRY_ID in L_INDUSTRY.</td>
</tr>
<tr>
<td>CUST_REGION_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Unique identifier for the region associated with the customer. Column references REGION_ID in L_REGION.</td>
</tr>
<tr>
<td><strong>Table: L_DDOC_ITEM_STATUS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DDOC_ITEM_STS_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the delivery document item status.</td>
</tr>
<tr>
<td><strong>Note:</strong> These statuses are different depending on the type of document; values may apply only to specific document types.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Primary Key (PK) / Foreign Key (FK)</td>
<td>Column Comment</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------</td>
<td>-------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>DDOC_ITEM_STS_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Item status description.</td>
</tr>
<tr>
<td><strong>Table: L_DELIV_DOC_STATUS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DELIV_DOC_STS_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the status associated with a delivery document. <strong>Note</strong>: These statuses are different depending on the type of document; values may apply only to specific document types.</td>
</tr>
<tr>
<td>DELIV_DOC_STS_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Delivery document status description.</td>
</tr>
<tr>
<td><strong>Table: L_DELIV_DOC_TYPE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DELIV_DOC_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the sales document type attribute</td>
</tr>
<tr>
<td>DELIV_DOC_TYPE_D</td>
<td>VarChar (30)</td>
<td></td>
<td>Sales document type description.</td>
</tr>
<tr>
<td><strong>Table: L_DIST_CHNL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIST_CHNL_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the distribution channel.</td>
</tr>
<tr>
<td>DIST_CHNL_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Distribution channel description.</td>
</tr>
<tr>
<td><strong>Table: L_DIVISION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIVISION_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the material division attribute.</td>
</tr>
<tr>
<td>DIVISION_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Division description.</td>
</tr>
<tr>
<td><strong>Table: L_INDUSTRY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDUSTRY_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the industry sector. Referenced as lookup for several attributes such as Customer Industry Sector, Material Industry Sector, and so on.</td>
</tr>
<tr>
<td>INDUSTRY_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Industry sector description.</td>
</tr>
<tr>
<td><strong>Table: L_MATERIAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATERIAL_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the material.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Primary Key (PK) / Foreign Key (FK)</td>
<td>Column Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MATERIAL_DESC</td>
<td>VarChar (50)</td>
<td></td>
<td>Material description.</td>
</tr>
<tr>
<td>PROD_HIER_L0_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Product Hierarchy Level 0 associated with the material.</td>
</tr>
<tr>
<td>DIVISION_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Division ID associated with the material. Column references DIVISION_ID in L_DIVISION.</td>
</tr>
<tr>
<td>MAT_IND_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Industry Sector ID associated with the material. Column references INDUSTRY_ID in L_INDUSTRY.</td>
</tr>
<tr>
<td>MAT_TYPE_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the material type. Column includes the material type associated with each material.</td>
</tr>
<tr>
<td>MAT_TYPE_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Material type description. Table is also used as lookup for this attribute.</td>
</tr>
<tr>
<td>MAT_CAT_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the material category. Column includes the material category associated with each material.</td>
</tr>
<tr>
<td>MAT_CAT_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Material category description. Table is also used as lookup for this attribute.</td>
</tr>
<tr>
<td>MAT_GRP_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the material group. Column includes the material group associated with each material.</td>
</tr>
<tr>
<td>MAT_GRP_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Material group description. Table is also used as lookup for this attribute.</td>
</tr>
<tr>
<td>MAT_PRICE_GRP_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for the material pricing group. Column includes the pricing group associated with each material.</td>
</tr>
<tr>
<td>MAT_PRICE_GRP_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Material type description. Table is also used as lookup for this attribute.</td>
</tr>
</tbody>
</table>

**Table: L_PROD_HIER**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Primary Key (PK)</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROD_HIER_L0_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the product hierarchy lowest level.</td>
</tr>
<tr>
<td>PROD_HIER_L0_DESC</td>
<td>VarChar (50)</td>
<td></td>
<td>Level 0 description.</td>
</tr>
<tr>
<td>PROD_HIER_L1_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for Level 1.</td>
</tr>
</tbody>
</table>
### Physical Schema and Data Dictionary

**Sales & Distribution Analysis Module Reference**

**Table column information © 2004 MicroStrategy, Inc.**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Primary Key (PK) / Foreign Key (FK)</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROD_HIER_L1_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Description for Level 1 (this table is also used as lookup for this attribute).</td>
</tr>
<tr>
<td>PROD_HIER_L2_ID</td>
<td>Numeric (38,0)</td>
<td></td>
<td>Unique identifier for Level 2.</td>
</tr>
<tr>
<td>PROD_HIER_L2_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Description for Level 2 (this table is also used as lookup for this attribute).</td>
</tr>
</tbody>
</table>

**Table: L_REF_DOC_TYPE**

<table>
<thead>
<tr>
<th>REF_DOC_TYPE_ID</th>
<th>Numeric (38,0)</th>
<th>PK</th>
<th>Unique identifier for the reference document type.</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF_DOC_TYPE_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Reference document type description.</td>
</tr>
</tbody>
</table>

**Table: L_REGION**

<table>
<thead>
<tr>
<th>REGION_ID</th>
<th>Numeric (38,0)</th>
<th>PK</th>
<th>Unique identifier for the customer region.</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGION_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Region description.</td>
</tr>
<tr>
<td>COUNTRY_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Country ID associated with the region. This column references COUNTRY_ID in L_COUNTRY.</td>
</tr>
</tbody>
</table>

**Table: L_SALES_DOC_STATUS**

<table>
<thead>
<tr>
<th>SALES_DOC_STS_ID</th>
<th>Numeric (38,0)</th>
<th>PK</th>
<th>Unique identifier for the status associated with a sales document.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALES_DOC_STS_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Sales document status description.</td>
</tr>
</tbody>
</table>

**Note:** These statuses are different depending on the type of document; values may apply only to specific document types.

**Table: L_SALES_DOC_TYPE**

<table>
<thead>
<tr>
<th>SALES_DOC_TYPE_ID</th>
<th>Numeric (38,0)</th>
<th>PK</th>
<th>Unique identifier for the type of sales document.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALES_DOC_TYPE_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Sales document type description.</td>
</tr>
</tbody>
</table>

**Table: L_SALES_GROUP**

<p>| SALES_GROUP_ID               | Numeric (38,0) | PK | Unique identifier for the sales group.                          |</p>
<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Primary Key (PK) / Foreign Key (FK)</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALES_GROUP_DESC</td>
<td>VarChar (50)</td>
<td></td>
<td>Sales group description.</td>
</tr>
<tr>
<td>SALES_OFFICE_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Sales office to which the sales group belongs. This references SALES_OFFICE_ID in L_SALES_OFFICE.</td>
</tr>
<tr>
<td>Table: L_SALES_OFFICE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SALES_OFFICE_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the sales office.</td>
</tr>
<tr>
<td>SALES_OFFICE_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Sales office description.</td>
</tr>
<tr>
<td>Table: L_SALES_ORG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SALES_ORG_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the sales organization.</td>
</tr>
<tr>
<td>SALES_ORG_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Sales organization description.</td>
</tr>
<tr>
<td>INDUSTRY_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Industry sector associated with the sales organization. This column references INDUSTRY_ID in L_INDUSTRY.</td>
</tr>
<tr>
<td>COMP_CODE_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Company code associated with the sales organization. This column references COMP_CODE_ID in L_COMP_CODE.</td>
</tr>
<tr>
<td>Table: L_SDOC_ITEM_STATUS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDOC_ITEM_STS_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the sales document item status.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Note:</strong> These statuses are different depending on the type of document; values may apply only to specific document types.</td>
</tr>
<tr>
<td>SDOC_ITEM_STS_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Item status description.</td>
</tr>
<tr>
<td>Table: L_SHIP_POINT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHIP_POINT_ID</td>
<td>Numeric (38,0)</td>
<td>PK</td>
<td>Unique identifier for the shipping point.</td>
</tr>
<tr>
<td>SHIP_POINT_DESC</td>
<td>VarChar (30)</td>
<td></td>
<td>Shipping point description.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Data Type</td>
<td>Primary Key (PK) / Foreign Key (FK)</td>
<td>Column Comment</td>
</tr>
<tr>
<td>------------</td>
<td>---------------</td>
<td>------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DATE_ID</td>
<td>TimeStamp (0)</td>
<td>PK</td>
<td>Unique identifier for the date attribute. It is used as ID and Description of the attribute.</td>
</tr>
<tr>
<td>MONTH_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Unique identifier for month. References MONTH_ID in L_MONTH.</td>
</tr>
<tr>
<td>QUARTER_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Unique identifier for quarter. References QUARTER_ID in L_QUARTER.</td>
</tr>
<tr>
<td>YEAR_ID</td>
<td>Numeric (38,0)</td>
<td>FK</td>
<td>Unique identifier for year. References YEAR_ID in L_YEAR.</td>
</tr>
<tr>
<td>MONTH_ID</td>
<td>Integer (4)</td>
<td>FK</td>
<td>Unique identifier for the month; the current format is YYYYMM and is stored as an integer. It references MONTH_ID in L_CAL_MONTH.</td>
</tr>
<tr>
<td>YTD_MNTH_ID</td>
<td>Integer (4)</td>
<td>PK</td>
<td>Unique identifier for the month; the current format is YYYYMM and is stored as an integer. For a given MONTH_ID, this field includes all the months of the year up to the selected month.</td>
</tr>
<tr>
<td>QUARTER_ID</td>
<td>Integer (4)</td>
<td>FK</td>
<td>Unique identifier for the quarter; the current format is YYYYQ and is stored as an integer. It references QUARTER_ID in L_CAL_QTR.</td>
</tr>
<tr>
<td>YTD_QTR_ID</td>
<td>Integer (4)</td>
<td>PK</td>
<td>Unique identifier for the quarter; the current format is YYYYQ and is stored as an integer. For a given QUARTER_ID, this field includes all the quarters of the year up to the selected quarter.</td>
</tr>
</tbody>
</table>