Simplifies complex, data-centric deployments that reduce risk

**KEY BENEFITS:**

A key component of Oracle’s Enterprise Healthcare Analytics suite

A product-based solution that significantly reduces risk, cost and efforts involved in healthcare data acquisition, integration and use, for all types of analytical tools.

Provides the most cost-effective way to load reliable, integrated high quality data into Oracle’s Healthcare Data Warehouse foundation and Healthcare Common Data mart.

Oracle Healthcare Analytics Data Integration (OHADI) is an entire data acquisition and ETL infrastructure for data processing from the multitude of sources in the healthcare enterprise. OHADI consolidates, integrates, validates and loads source data from clinical, financial, administrative and research data into Oracle Healthcare Data Warehouse Foundation (HDWF) and Healthcare Common Data mart (HCD) more cost effectively than customized solutions. In just a few minutes, the Self-Service Analytics in OHADI enables users to visualize -- via analytical reports and dashboards -- recently integrated data in HCD.

OHADI significantly reduces the costs, time and the risks associated with creating enterprise-level, data warehouse, data mart and analytical applications in a healthcare organization. OHADI does this by providing a pre-built, extract, transform and load (ETL) pipeline with all necessary features. This greatly speeds up data acquisition and visualization. By removing the need for data/application infrastructure creation and maintenance, the EHA suite reduces the total effort of extracting value from data by up to 80%. This drastic reduction in effort results in significant risk decrease.

**It all Works Together**

Among competing solutions, the movement of data from the source to the data warehouse and ongoing validation and integration is the most costly, time consuming, and high risk aspect of any data warehousing and analytics solution.

The HDWF Interface Tables receive data from the source systems and store it until the customer requires the data. The Interface Tables are not source-system specific. They are structured to facilitate mapping from any source, with little initial transformations.

This capability allows for quick analysis and moving data to the first stage of the OHADI process. Data in the Interface Tables are validated by applying the customer’s business rules. Invalid data are moved to the OHADI Exception Handling system for further processing. Once corrected, this data can be re-submitted to the Interface Tables and re-validated. Validated and integrated data are then loaded into the HDWF for analytic applications use.
Provides detailed, holistic and integrated views of the healthcare provider enterprise via data acquisition from myriad, complex, clinical, financial, administrative and research source systems.

Provides EHA Self-Service Analytics to explore and visualize KPIs and integrated healthcare data in just few minutes.

Significantly reduces time involved in creating BI applications.

Using EHA Self Service Analytics, roll-out Healthcare analytical applications much faster and more seamlessly.

Simplifies the Data Integration complexity of Warehouse and Data Mart.

Configurable rules that allow suspension of data to accommodate late arriving data.

Master Data Management feature provide solutions to map, translate, update, and manage standard terminologies on an enterprise scale by enabling terminology management required to support some of healthcare’s toughest challenges.

Enterprise Deployment of Data Integration and Warehousing

Similarly, mapping data from source systems can be complex and potentially costly. However, this step has a significant impact on the ultimate quality of the data. OHADI receives and manages data “as is” from heterogeneous source systems that span the scope of a healthcare provider’s business. These source systems contain data with uncertain lineage, schemas, structures, and data quality.

The goal of data integration is to enable loading of heterogeneous data into a set of standard, source-system-agnostic data structures, and then to manage that data proactively, using the following product features:

A comprehensive set of out-of-the-box ETLs that include mappings for all tables and columns in interface tables and HDWF.

Total numbers of ETLs that are delivered in OHADI are:

<table>
<thead>
<tr>
<th>Warehouse Integration ETLs</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDWF Transaction Tables Workflows (Initial)</td>
<td>538</td>
</tr>
<tr>
<td>HDWF Transaction Tables Workflows (Incremental)</td>
<td>538</td>
</tr>
<tr>
<td>Master Data Management Workflows (Code Repository, ETL Configuration Tables)</td>
<td>26</td>
</tr>
<tr>
<td>Alternate Workflows for Party Role Tables (Initial)</td>
<td>27</td>
</tr>
<tr>
<td>Alternate Workflows for Party Role Tables (Incremental)</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1156</td>
</tr>
</tbody>
</table>

**Interface Tables:** The receipt of data into the OHADI environment is done through data structures that, while being source-system-agnostic, facilitate the loading and managing of semantics, relationships and business rules from multiple source systems, standardizing them. These data structures also load the data along with associated metadata into HDWF for use by targeted, downstream applications. The Interface Tables also include additional functionality for ETL configuration management and data management.

**Master Data Management:** The Master Data Management structure in OHADI supports features that allow for easier management of healthcare master data, specifically Terminologies/Codes, Units of Measure and Master Seed Data. OHADI Master Data Management (MDM) solution is a comprehensive method of enabling the healthcare enterprise to link all of its critical data to master tables that provide a common point of reference.

OHADI Master Data Management is a comprehensive platform that delivers consistent, consolidated master data across the enterprise. This master information is available to downstream financial, operational and clinical analytical applications.

Healthcare terminologies are vast and complex. OHADI provides a terminology standardization feature to support consistent and meaningful analysis of data. OHADI provides an out-of-the-box solution for loading terminology content provided by healthcare terminology content providers.
Unique Benefits:

- Configurable persistence of data in the persistent staging area (Interface Tables).
- Interface tables being de-normalized and abstracted, serves as a simplified interface for populating data from source systems.
- Interface Tables provides feature of System of Origin Record Proxy by maintaining current and historical data for data management and reloading purposes.

Rules Framework and Out-of-the-box Rule Samples: OHADI contains an advanced rules framework for business rule validations, bi-temporal versioning and late-arriving data. Additionally, the product provides rules samples. This provides innovative and easy-to-use patterns for validation across single and multiple entities, data dependency/referential integrity rules, exception management rules and data cleansing/standardization rules.

Exception Management: Exceptions are associated implicitly with any data extraction, transformation and loading-related process. OHADI provides the comprehensive, exception management capabilities including configurable exception codes and exception messages. Exception log includes information on the ETL process, applied rules, exception messages, identification of the record causing the exception and status of the record.

Data Security: OHADI supports and integrates the standard security features of the Oracle database. The creation of a single platform to manage all master data objects prevents the proliferation of new silos and addresses the persistent fragmentation problem.

Notification Features: OHADI provides an E-mail Notification feature that summarizes data processed during a load window.

Load Sequencing: OHADI provides comprehensive information on the inter-dependency of all of the tables in HDWF, as well as the default and recommended load sequence of those tables.

Scalability: In conjunction with HDWF, OHADI is a highly available and scalable platform for critical data access under heavy mixed workloads concurrent access and load scenarios.

Application Toolkit: A new feature in the OHADI 3.0 release is the general mart containing facts and dimensions common to many marts built for healthcare analytics. By providing a set of facts and dimensions along with the associated ETL that support them, the Healthcare Common Data (HCD) mart reduces the complexity and resistance to use a third-normal-form of data warehouse.

These capabilities facilitate a rapid, extendable way to get the data for customer analytic needs from the HDWF warehouse model.

Application Toolkit enables business analysts and BI application developers to rapidly develop BI applications, integrate across silo analytics, compare reports, enable cross-application filters, enforce data governance and extend/reuse the data mart and ETLs in multiple applications.

Total number of data mart entities in OHADI Application Toolkit:

<table>
<thead>
<tr>
<th>Application Toolkit Data Mart Entities</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle BI App (OBIA) Dimensions</td>
<td>5</td>
</tr>
<tr>
<td>EHA Healthcare Dimensions</td>
<td>41</td>
</tr>
<tr>
<td>EHA Healthcare Facts</td>
<td>4</td>
</tr>
<tr>
<td>EHA Healthcare Hierarchies</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
</tr>
</tbody>
</table>
Total numbers of ETLs that are delivered in OHADI Application Toolkit are:

<table>
<thead>
<tr>
<th>Application Toolkit Data Mart Entities</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial load</td>
<td>21</td>
</tr>
<tr>
<td>Incremental load</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
</tr>
</tbody>
</table>

**Improved Clinical and Business Insights, Better Outcomes**

The benefits from an integrated view of healthcare data are substantial in today’s world. Integrated data can provide great assistance to caregivers and administrators making decisions on staffing by making available all information that can increase resource utilization to benefit patients. The collaboration and widespread use of information based on integrated data can drive actions that improve patient outcomes and minimize direct/indirect costs.

OHADI, in combination with HDWF, provides a developed solution that addresses the multiple challenges involved in the integration of data from disparate sources. Oracle’s EHA solution provides the analytics insights to drive rapid organizational response for healthcare transformation. This leads to evidence-based-care with a goal of improved patient outcomes.

**Faster Deployment, Lower Risk, and Lower Total Cost of Ownership**

Oracle has decades of experience with many of the world’s largest enterprise data warehouses. It has built clinical data repositories holding vast amounts of patient records. This experience, combined with the domain expertise of physicians, nurses and healthcare data analysts, has enabled Oracle to create the EHA solution. Providers can focus on transforming healthcare, instead of building IT infrastructure. This reduces development costs/overall project risks and provides the shortest path to realize full value from analytics.

**What is new in OHADI 3.1?**

**From 4 Months to 4 Minutes – EHA Self-Service Analytics**

EHA Self-Service Analytics (SSA) is a new, fast, easy, efficient and elegant feature in OHADI 3.1. It has the ability to create analytical application reports and dashboards within minutes of loading data in HCD data mart. This capability accelerates the ability to visualize data, explore KPIs, discover data in HCD and assists caregivers and administrators to make more effective patient-related decisions.

EHA SSA enables the user to generate the Oracle Business Intelligence Enterprise Edition RPD (OBIEE RPD) in a few minutes without the need to invest months in RPD analytical application development.
Below, a diagram illustrates how EHA SSA helps accelerate taking “data to the glass” during EHA analytical application development phase.

Analytical Application Development using EHA

This solution scales to generate the RPD for the data mart that is created by extending HCD for the analytical applications developed.

Below are few example reports that can be created easily and quickly using EHA SSA:
CONTACT US
For more information about Oracle Healthcare Analytics Data Integration, visit oracle.com/HealthSciences or call +1.800.633.0643 to speak to an Oracle representative.