

QLIKVIEW - THREE TIER ARCHITECTURE

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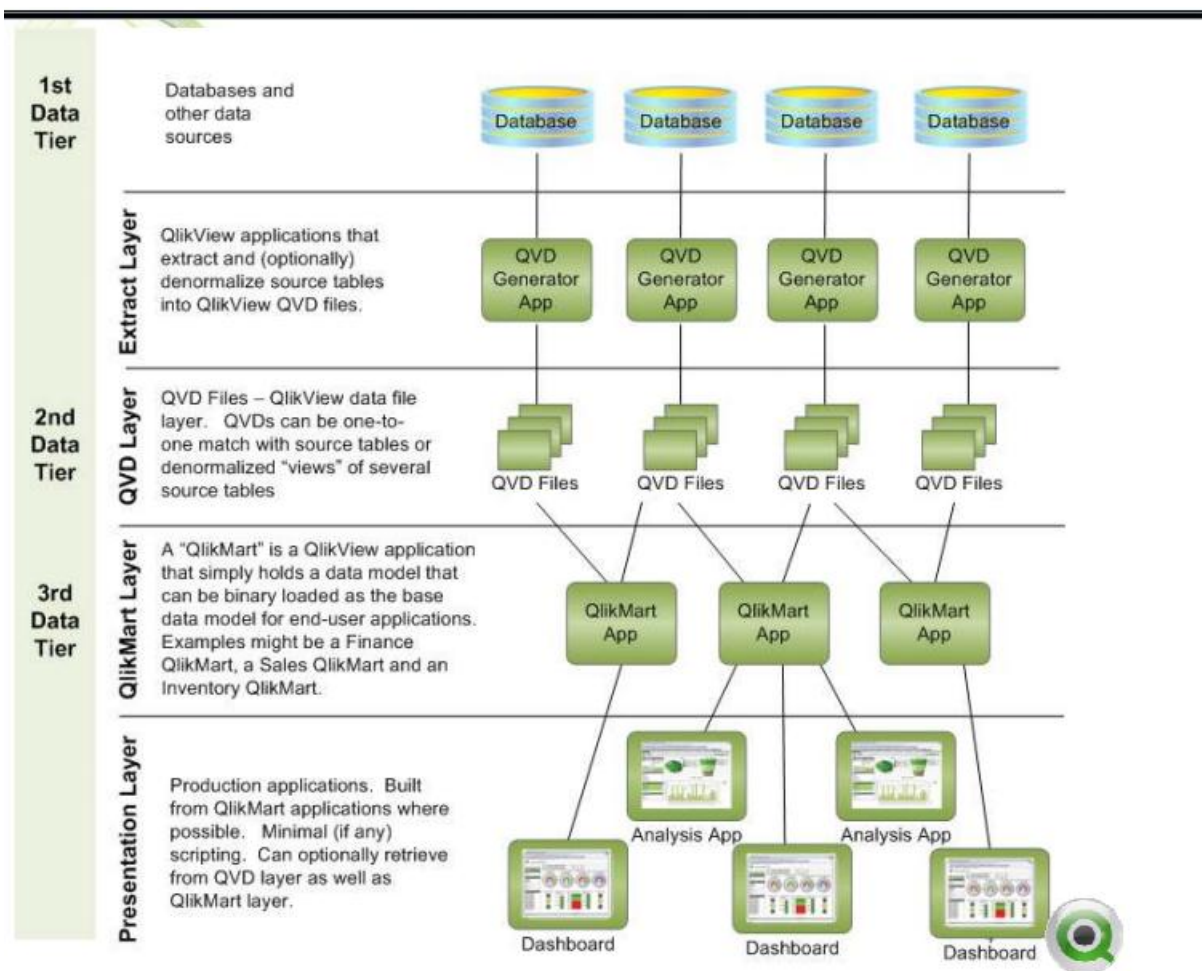
1. Introduction

The Three-tier Architecture includes three layers in order to extract the data from the various database and store data in the QlikView data file, apply the business logic and develop the data model using QVD files and finally create the dashboard by using the second layer as a binary load which helps the business user to analyse and process the data.

1. Load (Extract Layer and QVD Layer)
2. Transform (QlikMart Layer)
3. Presentation (Presentation Layer)

2. Architecture Design

The following diagram explains the layout of the three tier architecture.



3. LOAD

This tier connect any database by OLEDB or ODBC connection (like MySQL, SQL and Oracle) or third party tool (like Salesforce connector) to get the raw data from source tables and store it in the QVD (Qlikview Data) file. We can use this QVD files for all application in that

domain. For example, customer, employees and other master data can become common QVDs over a period of time thus saving load times and memory resources.

3.1 QVD

A QVD file is a file containing a table of data exported from QlikView. QVD is a native QlikView format and can only be written to and read by QlikView. Reading data from a QVD file is typically 10-100 times faster than reading from other data sources.

Usage of QVD

- Increasing Load Speed
- Decreasing Load on Database Servers
- Consolidating Data from Multiple QlikView Applications
- Incremental Load

3.2 ODBC

ODBC is Open Data Base Connectivity, which is a connection method to data sources and other things. It requires that you set up a data source, or what's called a DSN using an SQL driver or other driver if connecting to other database types. Most database systems support ODBC.

3.3 OLEDB

OLE is Object Linking and Embedding. OLEDB is partly distinguished from OLE itself, now called "automation". OLEDB is the successor to ODBC, a set of software components that allow a QlikView to connect with a back end such as SQL Server, Oracle, DB2, MySQL et al. In many cases the OLEDB components offer much better performance than the older ODBC.

Example

Sales:

```
SELECT * FROM SALES;
```

```
STORE Sales INTO Sales.qvd (qvd);
```

```
Drop Table Sales;
```

4. TRANSFORM

In this tier, QVD is transform in the business logic and requirement of the business and data model is created with either snowflake or star schema.

A star schema has one fact table and is associated with numerous dimensions table and depicts a star.

Snowflake schema, very large dimension tables are normalized into multiple tables. Every dimension table is associated with sub dimension table.

In this tier, use the QVDs generated from the first tier, inline load, resident load and external files in order to achieve the business logic.

Example

Master Calendar, Mapping table, Aggregation calculation, Rename or create new field and any external files if necessary.

Sales:

```
LOAD x as y, * FROM Sales.qvd (qvd);
```

5. PRESENTATION

This tier contains the Binary load of the "second tier file", apply application or data security if necessary and set of QlikView documents used to provide the data to the end user.

The binary statement is used for loading the access and data parts of a QlikView document. It does not load the layout information. Only one binary statement is allowed in the script and it can only be put as the first statement of a script.

Dashboard is a data visualization tool that displays the current status of metrics and key performance indicators (KPIs) for an enterprise. Dashboard contains different filters, widgets and KPIs which help the business users to easily analyse and process the data in order to identify the business failover and achievements.

Example: Binary customer_transform.qvw;

6. Advantage of Three Tier Architecture

- Increased performance:
 - QVD file makes the transform to load the data 100 times faster than loading it from the database.
- Flexibility:
 - More flexible since it used binary load in presentation layer, so the transform can be used in many dashboard.
- Easy to maintain:
 - We do separate the qvd generator files for each data source for east to maintenance. Since if one of them doesn't work it's easier to pinpoint as well as u don't have to take down all data sources while fixing it.
- Reusability:
 - QVD and transform files can be used in many applications.