



QlikView Data Architectures

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Introduction

The following pages outline several data architectures that can be deployed as part of QlikView solutions. These pages do not depict every possible architecture. In fact, they may only represent a small portion of the possible architectures. They do, however, represent the concepts that are most often employed (with the exception of the Single-Tier architecture) to promote scalability, re-use and consistency.

These pages are meant to help provide a backdrop for design and architecture discussions related to enterprise deployments with QlikView.



Single-Tier (Direct) Architecture

Description:

This architecture involves only direct queries against source databases. All presentation layer applications make database connections and contain their own SQL queries and QlikView scripts to load, transform and aggregate any data needed.

When to use:

This is the simplest QlikView architecture, but also the most costly to maintain. Queries are often repeated across many applications. Reloads of applications may be competing for the same database resources. Intra-day reloads will need access to source databases to load from.

1st Data Tier

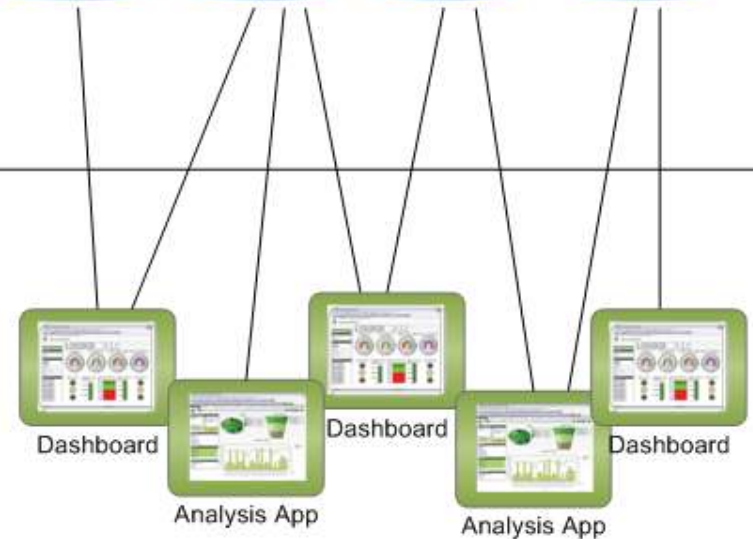
Source Layer

Databases and other data sources



Presentation Layer

Production applications. Each one is scripted with source database queries and any transformational scripting needed for the final interface. Many elements and metrics overlap across applications, requiring redundant code and processing.



PLEASE NOTE:

This architecture is not a recommended best practice for enterprise QlikView deployments. Please see the next few pages for examples of more resilient and scalable data architectures.



2-Tiered QVD Architecture



Description:

This architecture includes the use of QVD files for a 2nd data tier. The presentation layer applications will still need to generate data models from several QVD files, but they will not need to extract directly from source databases. This helps promote re-use and consistency across presentation layer applications.

When to use:

Use this architecture when you want to shield presentation layer developers from direct database retrievals and promote re-use. Some data modeling and scripting expertise will be needed at the presentation layer, but not necessarily any source database query knowledge or skills.

1st Data Tier

2nd Data Tier

Source Layer

Databases and other data sources



Extract Layer

QlikView applications that extract and (optionally) denormalize source tables into QlikView QVD files.



QVD Layer

QVD Files – QlikView data file layer. QVDs can be one-to-one match with source tables or denormalized "views" of several source tables



Presentation Layer

Production applications built from QVDs in the layer above. No direct database queries are needed in these applications and re-use of common QVDs is promoted. Some understanding of data model best practices is still required to optimize application performance.



3-Tiered QVD Architecture

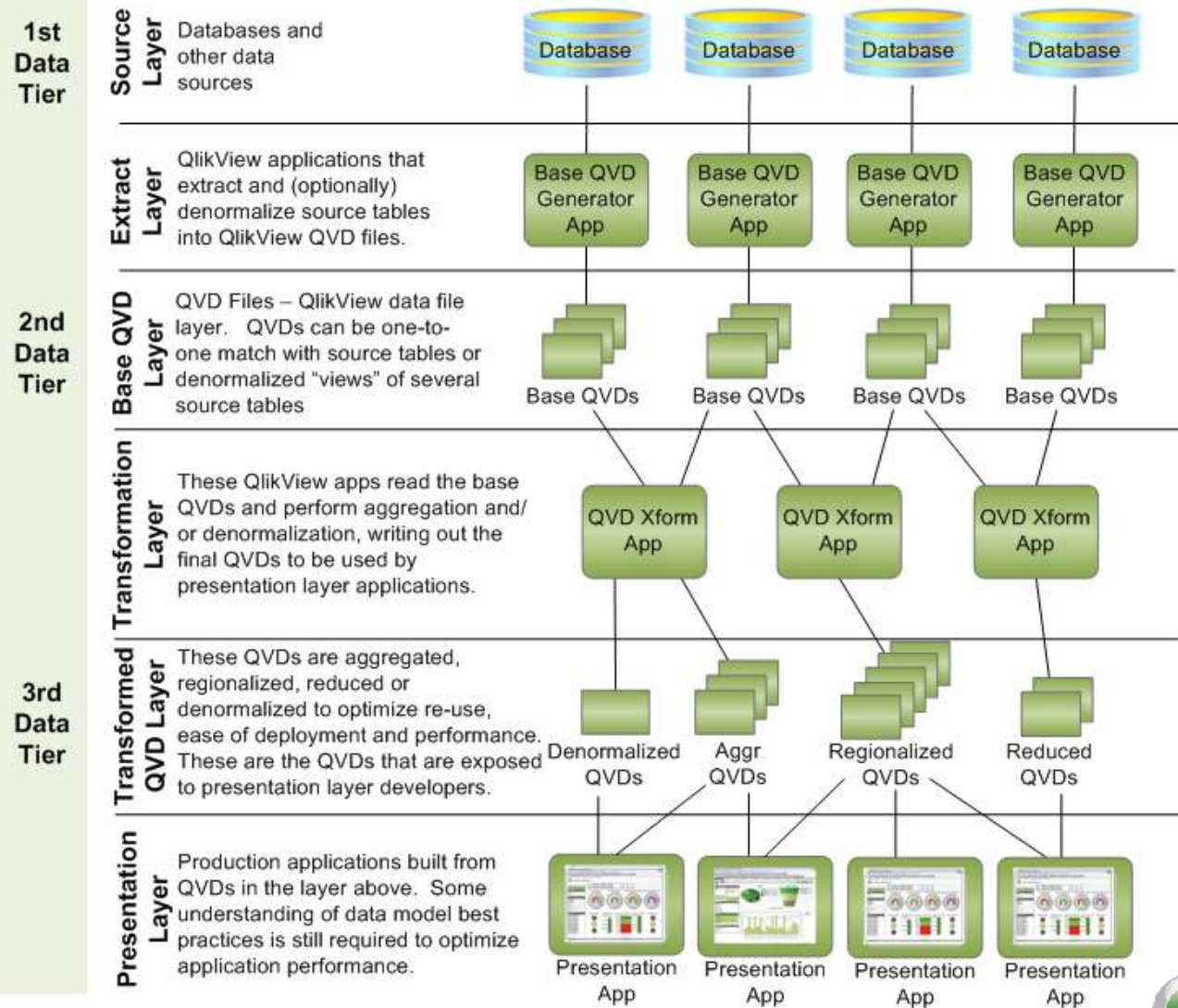


Description:

This architecture includes the use of QVD files for the 2nd and 3rd tiers. The first QVD layer can be very normalized, in some cases it can be a one-to-one match of source DB tables. This layer accommodates very fast extractions with minimal transformations and aggregations. The second QVD layer is where aggregated and denormalized QVDs are exposed to presentation layer developers.

When to use:

Use this architecture when a short batch window is desired (QVD layer is fast) and you want to create the presentation layer data models from a QVD layer, but you want this layer to be optimized for re-use and performance.



2-Tiered QVW Architecture



Description:

This architecture includes the use of "QlikMart" applications files for a 2nd data tier. These QlikMarts are just QlikView applications without a completed user interface. They act as data models that can be loaded into a presentation layer application with a single line of code (called a binary load).

When to use:

This simplified architecture can be used when a relatively small set of final applications are needed and a QVD layer is not needed for incremental loading, history retention or re-use across many applications. This architecture shields the presentation layer developers from direct DB access queries and source data model knowledge requirements.

1st
Data
Tier

Source Layer

Databases and other data sources



2nd
Data
Tier

QlikMart Layer

A "QlikMart" is a QlikView application that simply holds a data model that can be binary loaded as the base data model for end-user applications. Examples might be a Finance QlikMart, a Sales QlikMart and an Inventory QlikMart.



Presentation Layer

Production applications. Built from QlikMart applications where possible. Minimal (if any) scripting. Can optionally retrieve from QVD layer as well as QlikMart layer.



3-Tiered QVW Architecture

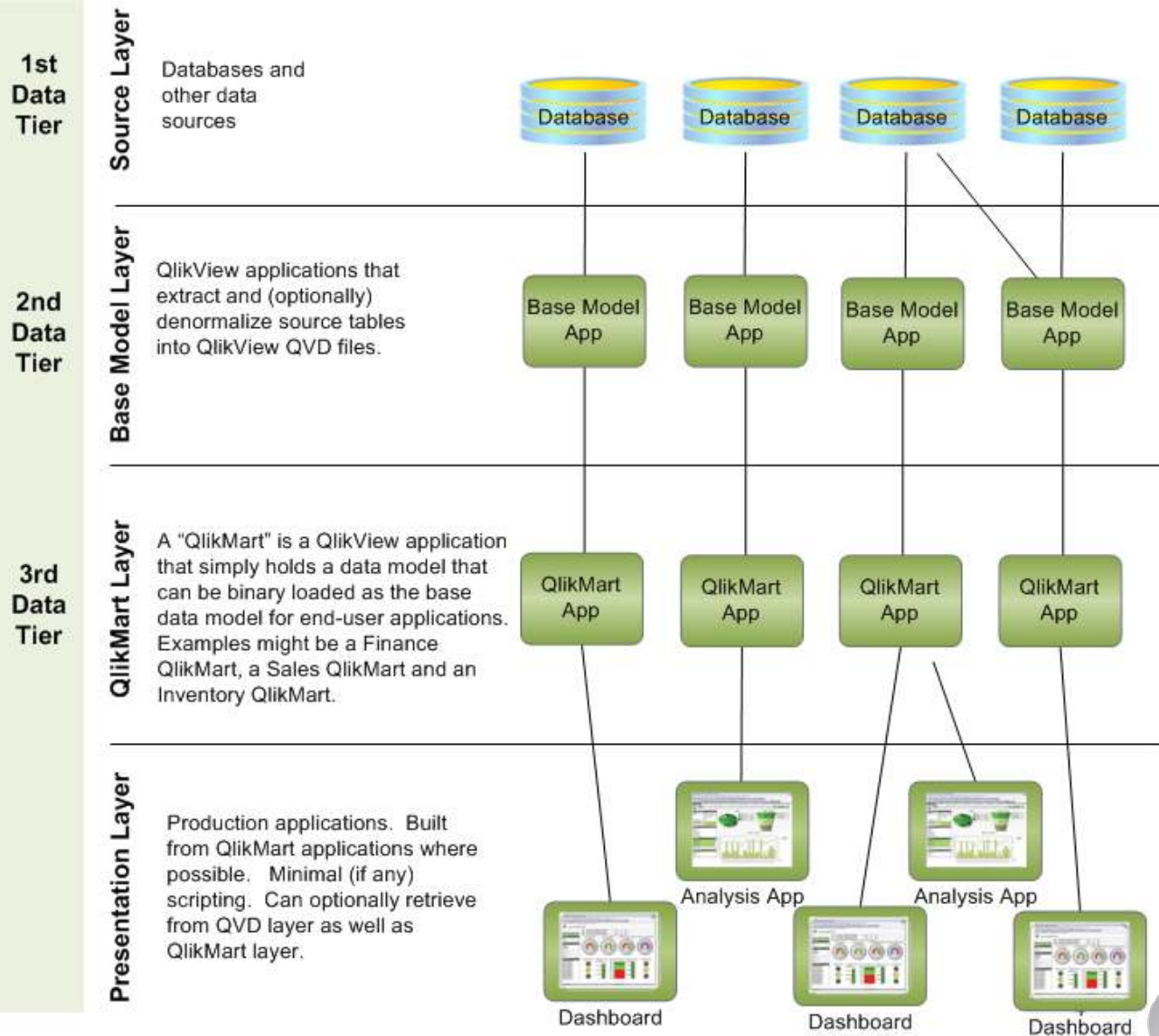


Description:

This architecture includes the use of QVW files as a 2nd and 3rd data tier. This allows the first QVW layer to be relatively simple data models at a more normalized level from the source database, with little aggregation or transformation. The next QVW layer (the QlikMart layer) is where the transformations and aggregations can take place.

When to use:

Use this architecture you want to shield presentation layer development from source DB queries and from performing aggregations and transformations. Note: this architecture will involve more complex scripting at the QlikMart level since an entire data model is loaded from the prior level before transforming data. This requires temp tables and script logic that is more difficult than QVD-based models.



3-Tiered Mixed Architecture (QVD and QVW layers)



Description:

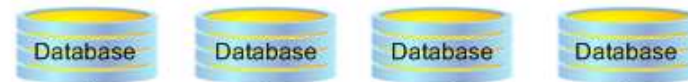
This architecture includes the use of QVD files as a 2nd data tier, from which a QlikMart tier is built. This allows the presentation layer applications to be basic binary loads from the QlikMart layer.

When to use:

Use this architecture when a short batch window is desired (QVD layer is fast) and you want to shield presentation app developers from having to build data models in a QlikView application. This architecture also promotes reuse at the QVD layer and the QlikMart layer, as these layers can serve many different presentation applications.

1st Data Tier

Databases and other data sources



Extract Layer

QlikView applications that extract and (optionally) denormalize source tables into QlikView QVD files.



2nd Data Tier

QVD Files – QlikView data file layer. QVDs can be one-to-one match with source tables or denormalized “views” of several source tables



QlikMart Layer

A “QlikMart” is a QlikView application that simply holds a data model that can be binary loaded as the base data model for end-user applications. Examples might be a Finance QlikMart, a Sales QlikMart and an Inventory QlikMart.



Presentation Layer

Production applications. Built from QlikMart applications where possible. Minimal (if any) scripting. Can optionally retrieve from QVD layer as well as QlikMart layer.

