Data Architectures

QlikView

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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 Stage 1 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.

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Data Architectures

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Stage 1 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.

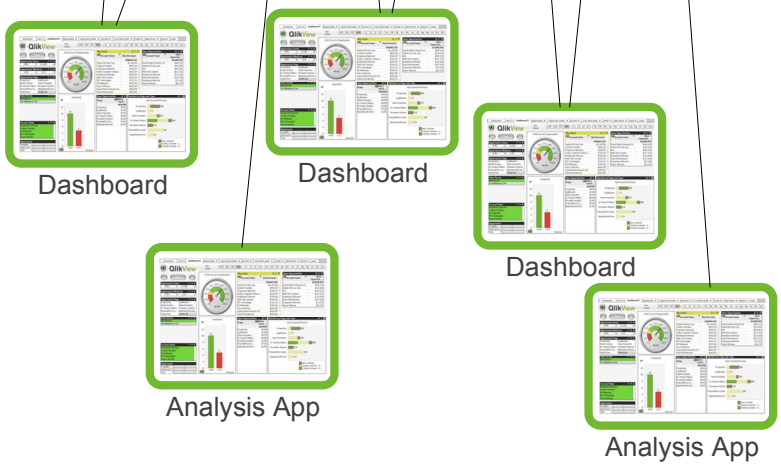
When to use:
This is the simplest QlikView architecture, but also the most costly to maintain. Queries are often repeated across many applications. Reloads of applications may be competing for the same database resources. Intra-day reloads will need access to source databases to load from.

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.

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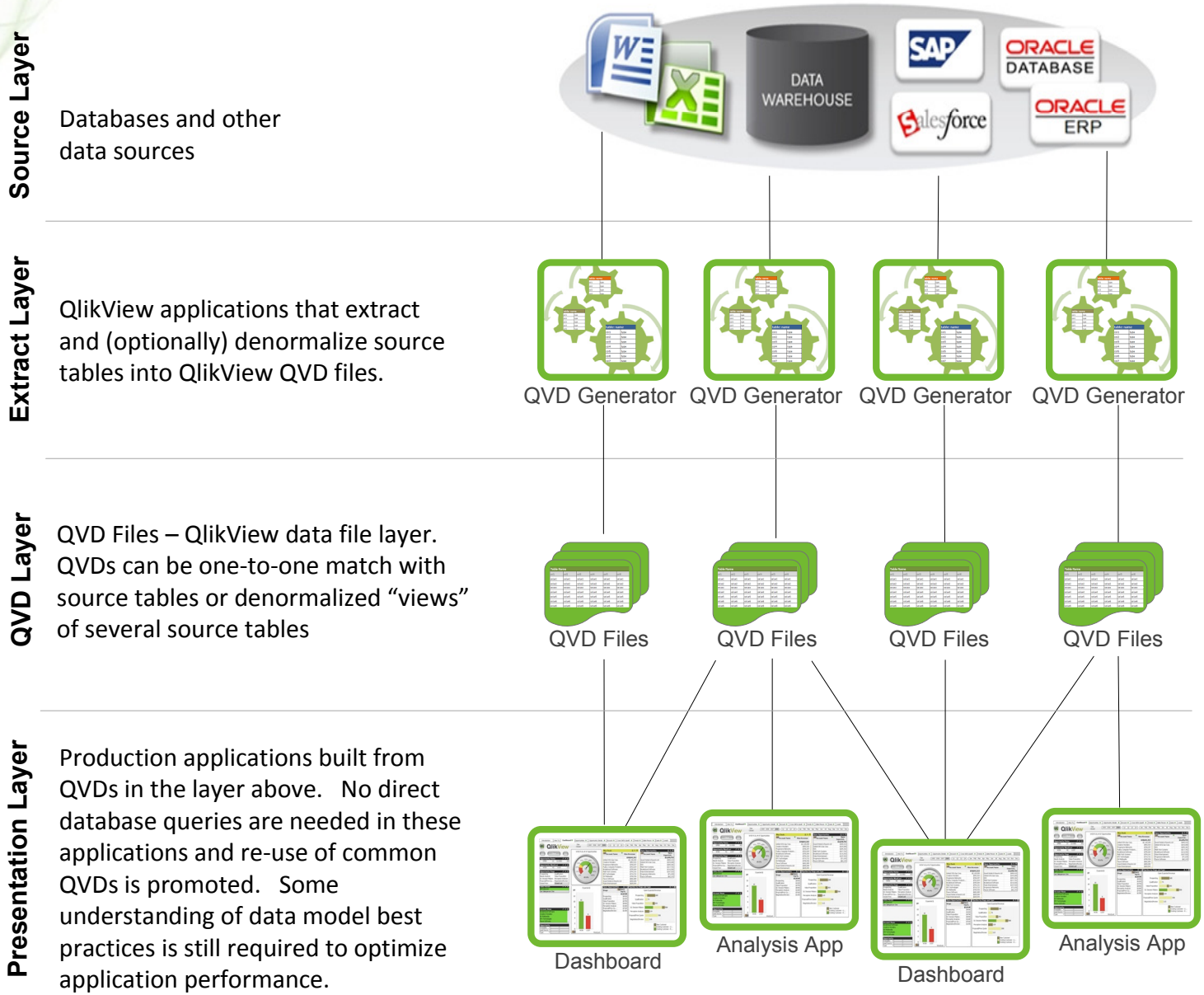
Stage 2 Architecture

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.



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Stage 3 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. This helps support co-development of QlikView between IT and business teams.

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.

Source Layer
Databases and other data sources

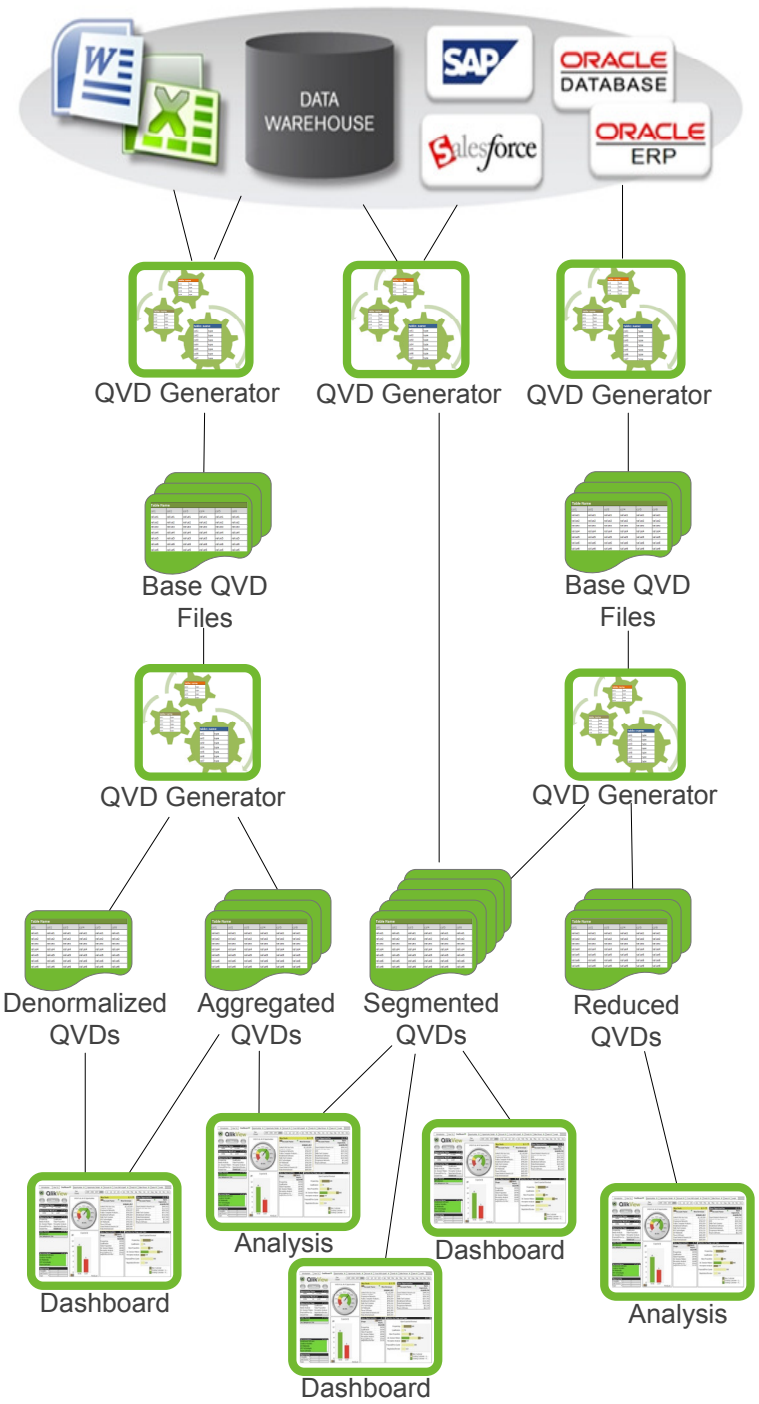
Extract Layer
QlikView applications that extract and (optionally) denormalize source tables into QlikView QVD files.

Base 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

Transformation Layer
These QlikView apps read the base QVDs and perform aggregation and/or denormalization, writing out the final QVDs to be used by presentation layer applications.

Transformed QVD Layer
These QVDs are aggregated, regionalized, reduced or denormalized to optimize re-use, ease of deployment and performance. These are the QVDs that are exposed to presentation layer developers.

Presentation Layer
Production applications built from QVDs in the layer above. Some understanding of data model best practices is still required to optimize application performance.



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Stage 4 Architecture

Description:
This architecture includes the use of "QlikMart" applications. 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). This helps support co-development of QlikView between IT and business teams.

When to use:
This architecture should be used when "self-service BI" is a goal, or when many dashboards will overlap in data usage and IT wants to control the consistency and predictability of dashboard performance. This architecture shields the presentation layer designers from data model preparation, except in cases where a QlikMart has not yet been built.

Source Layer
Databases and other data sources

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

Rich QVD Layer
QVD Files – combination of base QVD files, aggregated, segmented and denormalized QVD files.

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.