QlikView

BUSINESS DISCOVERY
FOR 4,000 SALESFORCE.COM USERS

QlikView Technical Case Study Series –

Near Real Time Business Discovery with Salesforce.com™ Data

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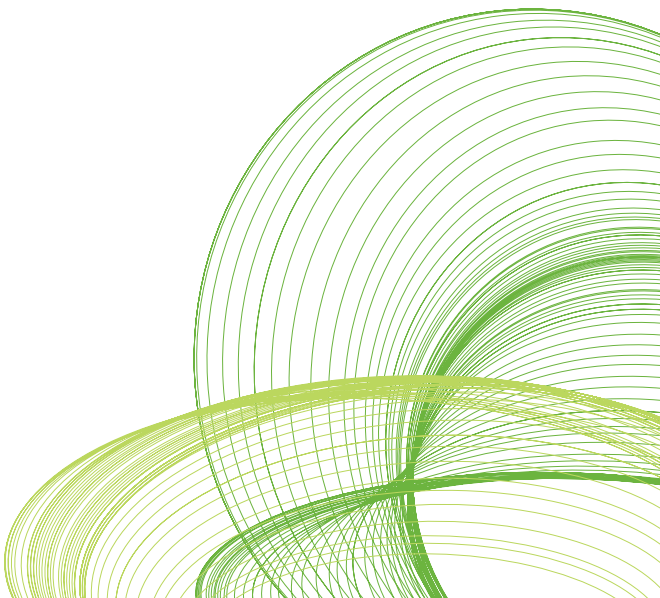


Introduction

This document describes the QlikView deployment of a large IT software company at a technical level. QlikView enabled the sales force at this company by integrating sales data from various data sources providing complete analytics capabilities. Empowered by QlikView, 4,000 sales team members gets sales analytics in near real time on a QlikView dashboard integrated into their Salesforce.com system.

This paper illustrates one of the real-life examples of a QlikView deployment integrating data from multiple data sources including Salesforce.com data. It explains the technical details of achieving near real-time Business Discovery capabilities. The paper also explains how QlikView dashboards can be embedded into Salesforce.com with a single sign on (SSO) solution.

The technical deployment decisions explained in this paper are dependent on the considerations specific to this customer. This is a referral paper and should not be used as a deployment guideline.

Before reading this paper, we recommend the reader review the QlikView Development and Deployment Architecture Technical Brief in order to get a fundamental understanding of the various QlikView components. A link to this paper is available in the the references section.

NEAR REAL TIME SALES ANALYTICS

- QlikView dashboard integrated data from Salesforce.com, an operational database and the enterprise data warehouse
- Enhanced Salesforce.com experience with QlikView Salesforce connector
- Near real time sales analytics providing single source of truth
- 4,000 global salespeople empowered by QlikView

Executive Summary

This large IT software company uses analytics to manage the sales pipeline and forecasts. They have different data sources with sales data, where the main ones are Salesforce.com, operational data sources and the enterprise data warehouse.

The main analytics challenge faced by their sales team was the multiple source of truth. They had numerous disconnected reports to do similar analytics, but none of them were achieving the level of consistency required to successfully manage the sales pipeline.

Dozens of analysts were wasting time creating almost identical reports with varying breakdowns and formats. Analysts were spending too much time producing duplicative data and doing reconciliation. These processes were leaving the analysts with very limited time to spend on true value-added decision support and analytics activities.

QlikView was chosen to overcome these challenges. The QlikView dashboard enabled 4,000 global sales people to analyze sales data in a self-service manner on any device. The solution is integrated into their Salesforce.com system providing near real time information on the sales pipeline, forecasts and other sales processes. QlikView integrated data from various data sources including Salesforce.com, operational database and the enterprise data warehouse. They leveraged QlikView's Salesforce connector to provide comprehensive analytics on the Salesforce.com data. With this solution, the sales force can see data from multiple systems and answer questions that Salesforce.com alone cannot answer. QlikView enabled their sales team across the globe and provided better leverage of IT investments in their Salesforce.com system and data warehouse assets with intuitive access, comprehensive analytics, and sophisticated visualization.

QLIKVIEW PRODUCTS COMPONENTS

- 3 clustered QlikView Servers
- 1 QlikView Publisher providing near real time data updates
- QlikView Developer, plug-in and zero-footprint Ajax clients

Technical Solution

1. ARCHITECTURE OVERVIEW

Figure 1 shows the architecture of the QlikView production environment. Three main infrastructure components are used in this deployment.

- **QlikView Server (QVS):** QlikView Server handles the communication between the clients and the QlikView applications. QlikView Server loads the QlikView applications into memory, calculates and presents user selections in real time. In this deployment, the Internet Information Server (IIS) web servers are used to provide the content to the users.

  There are two servers hosting IIS and QlikView AccessPoint, QlikView's user portal. To avoid single point of failure on the web server layer, two physical servers are used to host AccessPoint. These servers reside behind a network load balancer which directs the user traffic.

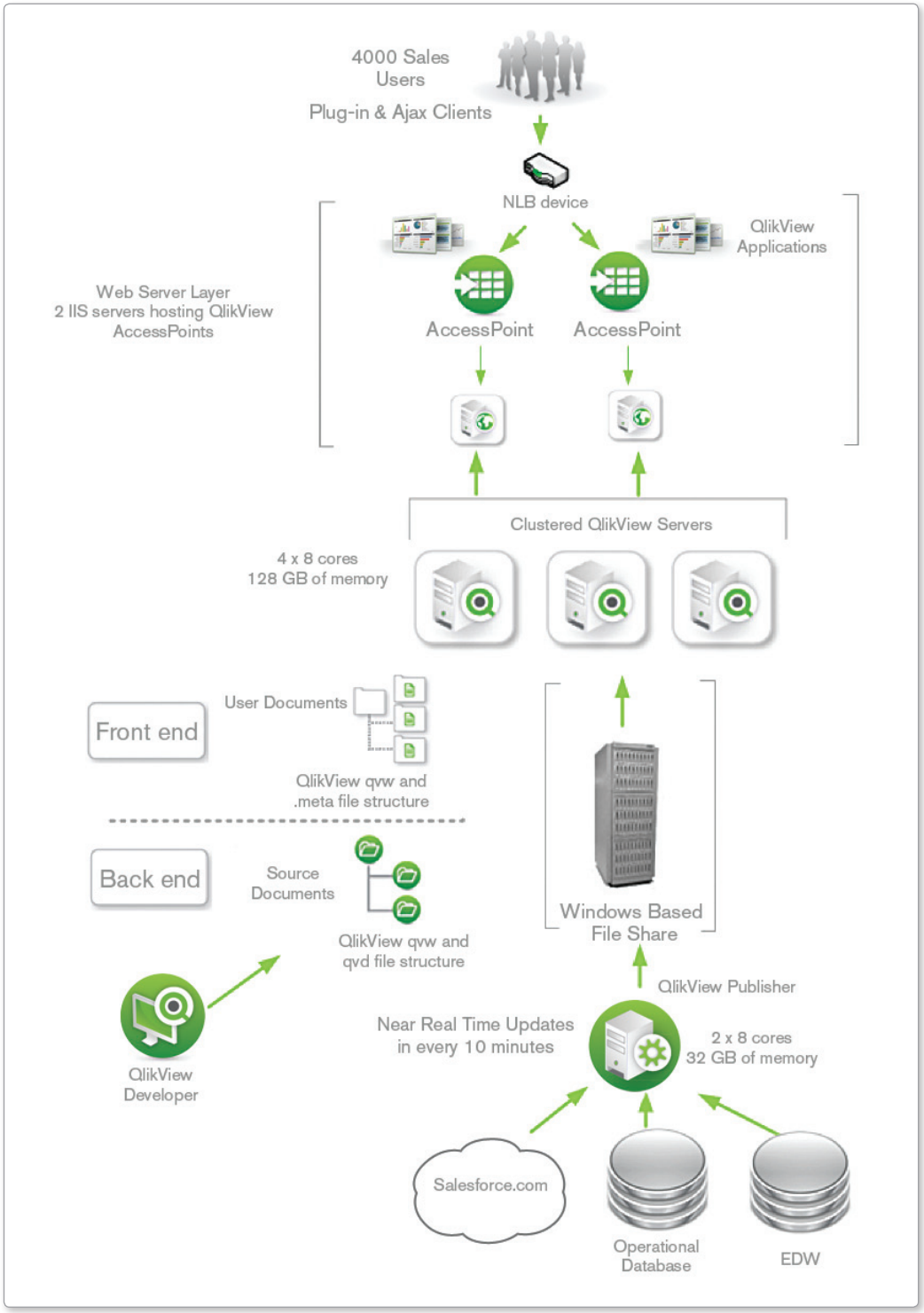
  QlikView Management Console (QMC) is used to configure and optimize the QlikView Server and Publisher configurations to ensure that the load placed by near-real time refreshes does not impair the user experience.

  Other tools used in the implementation included HP Load Runner which was used extensively to perform load testing.

- **QlikView Publisher:** QlikView Publisher is used to load the data from multiple data sources. The QlikView Salesforce connector is used to extract data from Salesforce.com. With this connector, this organization improved the value delivered by Salesforce.com by enabling business users to visualize and analyze sales information by combining it with other data sources into one QlikView dashboard. In this deployment, QlikView Publisher reload tasks are scheduled to run every ten minutes to extract data from Salesforce.com and the QlikView dashboard is refreshed with near real time data.

- **QlikView Clients:** QlikView Developer, the Internet Explorer plug-in and the AJAX clients are used as the client types in this deployment. QlikView Developer is used to develop the data extraction and transformation as well as to develop the graphical user interface. Both the plug-in client and the AJAX Zero-Footprint client are used for business users accessing QlikView applications on the QlikView Server.

Figure 1 – QlikView Production Environment Architecture



2. QLIKVIEW SALESFORCE.COM CONNECTOR

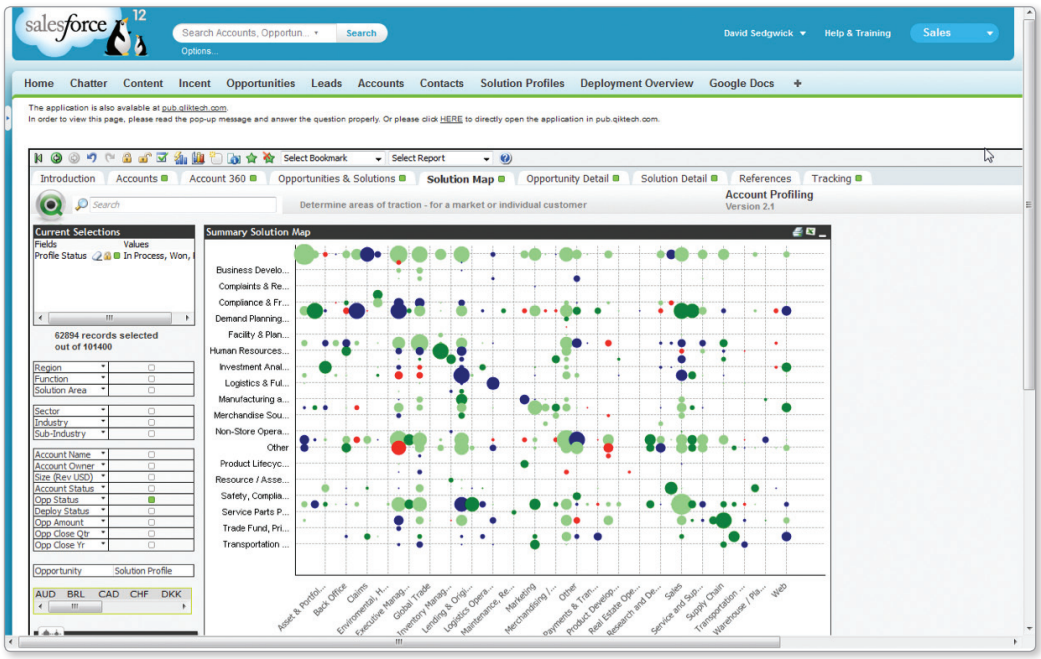
Although this organization invested in Salesforce.com to improve the sales performance while controlling their IT spending, they were having challenges on delivering sales analytics. The main challenge faced by their sales team was the multiple source of truth that existed throughout the organization. They had numerous disconnected reports to do similar analytics, but none of them was achieving the level of consistency required to successfully manage the sales pipeline.

By using QlikView's Salesforce.com connector, they were able to provide visibility on the Salesforce.com data. They improved the sales analytics by integrating the Salesforce.com data with other data sources in QlikView. The implementation also enabled the sales force to access the QlikView dashboard on and offline mode.

The QlikView Salesforce.com connector is a free connector provided by QlikTech allowing data extraction from Salesforce.com tables. To learn more about the value of using this connector please refer to QlikView for Salesforce.com data sheet. A link to this paper is available in the references section.

The solution provided a tailored Business Discovery dashboard to the sales team providing analytics on the pipeline, forecast, and sales operations data by territory. This combined view from multiple data sources presented a clear view into the business to enable the sales team to best utilize their time and resources for maximum results.

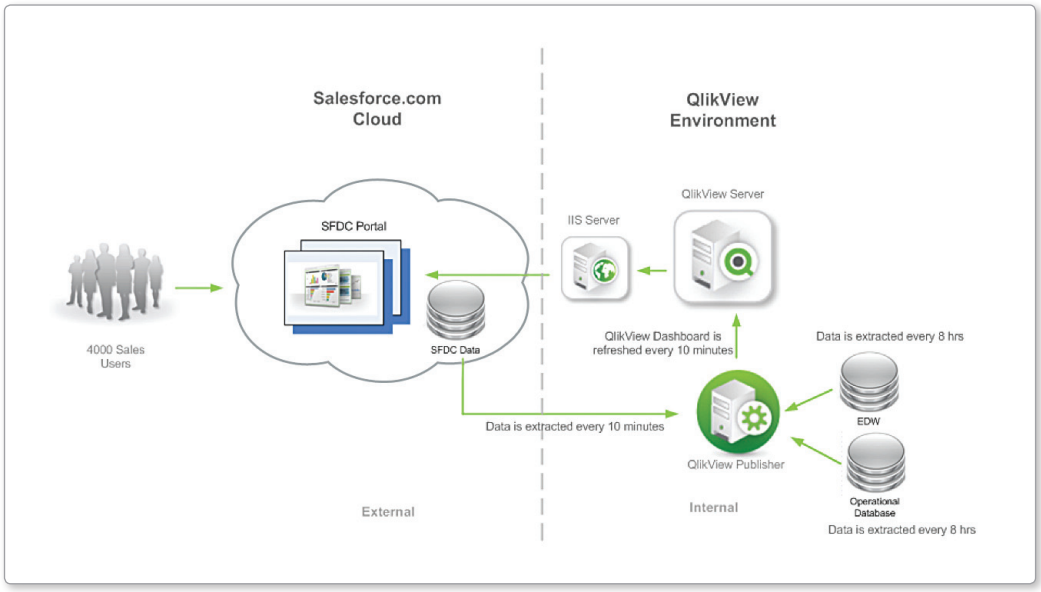
Figure 2 – QlikView Application Embedded into Salesforce.com



3. QLIKVIEW AND SALESFORCE.COM INTEGRATION AND SECURITY

In this deployment, the QlikView dashboard is integrated into Salesforce.com. As both QlikView and Salesforce.com are deployed through a browser interface, it is possible to take the rich QlikView experience and deploy it back into Salesforce.com itself.

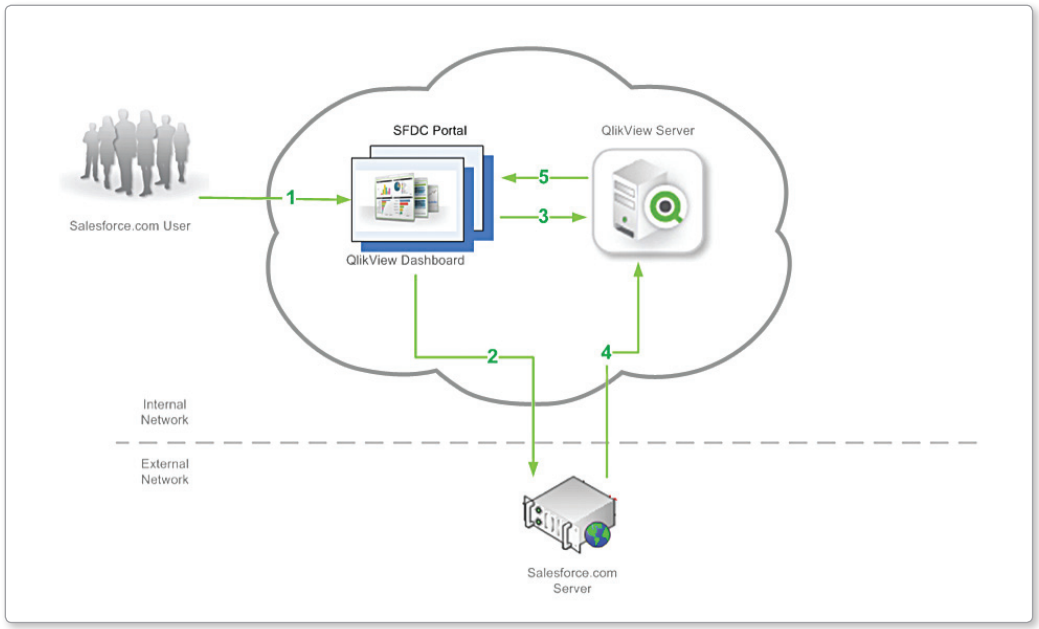
Figure 3 – QlikView Dashboard Integration with Salesforce.com



One of the main requirements in this deployment was ease of use. The business users asked for single entry of the credential information when they use the QlikView application within Salesforce.com. The deployment used a single sign on (SSO) process to authenticate the users. The SSO provides a way for the sales team to log in to their QlikView application from within Salesforce.com without entering additional authentication credentials. When users click on the QlikView tab, an authentication ticket request is made over to the QlikView Server with the user's Salesforce.com credentials.

Figure 3 demonstrates the SSO and the ticketing process at high level between Salesforce.com and QlikView.

Figure 4 – The Single Sign On (SSO) and ticketing process between QlikView and Salesforce.com



The Salesforce.com credentials are reused on the QlikView platform, providing single sign on for the user. Salesforce.com provides a SOAP-API to retrieve the username out of the user's session ID. The "authenticate.aspx" page on the QlikView Server, is modified to get the username from Salesforce.com and then hands the authenticated user name over to QlikView Accesspoint for authorization. Once the authorization is done, the QlikView Server issues a ticket to be used for user interaction with the QlikView dashboard.

The ticketing process goes like this:

1. User logs into Salesforce.com, clicks on QlikView tab.

2. The QlikView tab on Salesforce.com is configured with an iframe. The source attribute of the iframe points to the authenticate.aspx page on the QlikView Server, and also contains the current user's Salesforce.com session ID and the callback URL.

3 The autheticate.aspx page calls back into Salesforce.com to verify the user identity based on the passed session ID and callback URL that are stored on the source attribute.

4. Once the user identity is validated against the session ID, Salesforce.com returns a user authorization success notification. QlikView Server uses the authenticated username to check the authorization access for the user. If the user has authorization, QlikView Server issues a ticket.

5. All future requests from this client use the ticket.

Once the user opens the QlikView application, QlikView Server dynamically reduces the data to his territory. QlikView's Section Access feature is used to achieve this row level security. This way, each sales person can only see his own territory information.

4. NEAR REAL TIME UPDATES

It was essential for the business to make quick decisions to maximize each customer opportunity. By using QlikView Publisher reload and scheduling capabilities, the data is extracted from different data sources with different frequencies. The Salesforce.com data is extracted every ten minutes. The operational and data warehouse data are extracted three times in a day. All of this information is merged in one QlikView dashboard that is refreshed every ten minutes. As QlikView provides near real time refresh capability, the QlikView dashboard puts more actionable sales analytics at the users' fingertips as things change during the sales cycles.

5. HARDWARE SPECIFICATIONS

Three clustered servers are used to serve the QlikView applications to the users. These servers have 128 GB of memory with 4 x 8 cores.

There are two servers hosting the Internet Information Server (IIS) web servers with QlikView AccessPoint. These servers have 32 GB of memory with 2 x 8 cores.

One Server is used for QlikView Publisher. This server has 32 GB of RAM with 2 x 8 cores.

One of the main considerations on determining the server size was to retain performance levels as the data, the number of users and QlikView applications grow in the future.

6. CLUSTERING DETAILS

QlikView Server clustering is used to support load sharing of QlikView applications across the servers. There are three QlikView Servers in the cluster. With QlikView clustering, the user requesting the QlikView application is directed to the server which has the most RAM and CPU resources available.

7. NUMBER OF USERS AND LICENSE TYPES

The deployment supports four thousands sales users. In this deployment only Named User Client Access License (CAL) type is used. The Named User CAL is typically used for users that need dedicated access to QlikView applications. In this deployment, the requirement was to provide the sales team everyday access to the QlikView dashboard. Named User CAL has been chosen as the appropriate client license type.

In this deployment, the Named User CALs are not explicitly assigned to specific users ahead of time. They are assigned on a first come, first serve basis using the "dynamic CAL assignment" feature of the QlikView Server. Once assigned to a particular Salesforce.com user, these licenses are valid for 30 days, at which time they are leased again against the pool of available unassociated server licenses. The 30 day limit is not configurable , however a user's license can be removed by a QlikView Administrator through the QlikView Management Console. Because dynamic CAL assignment is being used, the QlikView administrator does not need to specify ahead of time the user CAL assignments. When a user logs into Salesforce.com and uses the QlikView application via SSO, if a CAL is not already assigned to that user, a Named User CAL is dynamically assigned out of the available pool of licenses.

The QlikView system administrator monitors the QlikView CAL usage by using the free QlikView System Monitoring app on a daily basis. With this QlikView app, they will know when the system is reaching its limit to request additional licenses if needed. QlikView provides additional CAL types that are designed for "overage" situations like this, including Session and Usage CALs.

Conclusion

This paper has outlined the technical QlikView deployment at a large IT software company. Although this company invested in Salesforce.com to improve the sales performance while controlling the IT spending, they were having challenges on delivering sales analytics.

QlikView enabled their sales teams across the globe and provided better leverage of IT investments in their Salesforce.com system and data warehouse assets with intuitive access, comprehensive analytics, and sophisticated visualization.

QlikView provided a tailored Business Discovery dashboard to their 4,000 global sales people. It delivered near real time analytics on the pipeline, forecast, and sales operations data by territory. The QlikView dashboard combined data from multiple data sources and presented a clear view into the business to enable the sales teams to best utilize their time and resources for maximum results.

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