ArchitectureDesign

GOOGLE PLAY STORE APP

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DOCUMENT CONTROL

Change Record:

VERSION	DATE	AUTHOR	COMMENTS
0.1	15-July-2023	Preeti Jain	Introduction to Data Set and cleaning & Statical Analysis
0.2	20 -July-2023	Preeti Jain	Exporting Cleaned data for Dashboard building

Reviews:

VERSION	DATE	REVIEWER	COMMENTS
0.2	22 – July-2023	Preeti Jain	Power Bi Buttons to be added

Approval Status:

VERSION	REVIEW DATE	REVIEWED BY		APPROVED BY	COMMENTS

Contents

1. Introduction

1.1 What is an Architecture design document?

Any software needs the architectural design to represent the design of software. IEEE defines architectural design as “the process of defining a collection of hardware and software components and their interfaces to establish the framework for the development of a computer system.” The software that is built for computer-based systems can exhibit one of these many architectures.

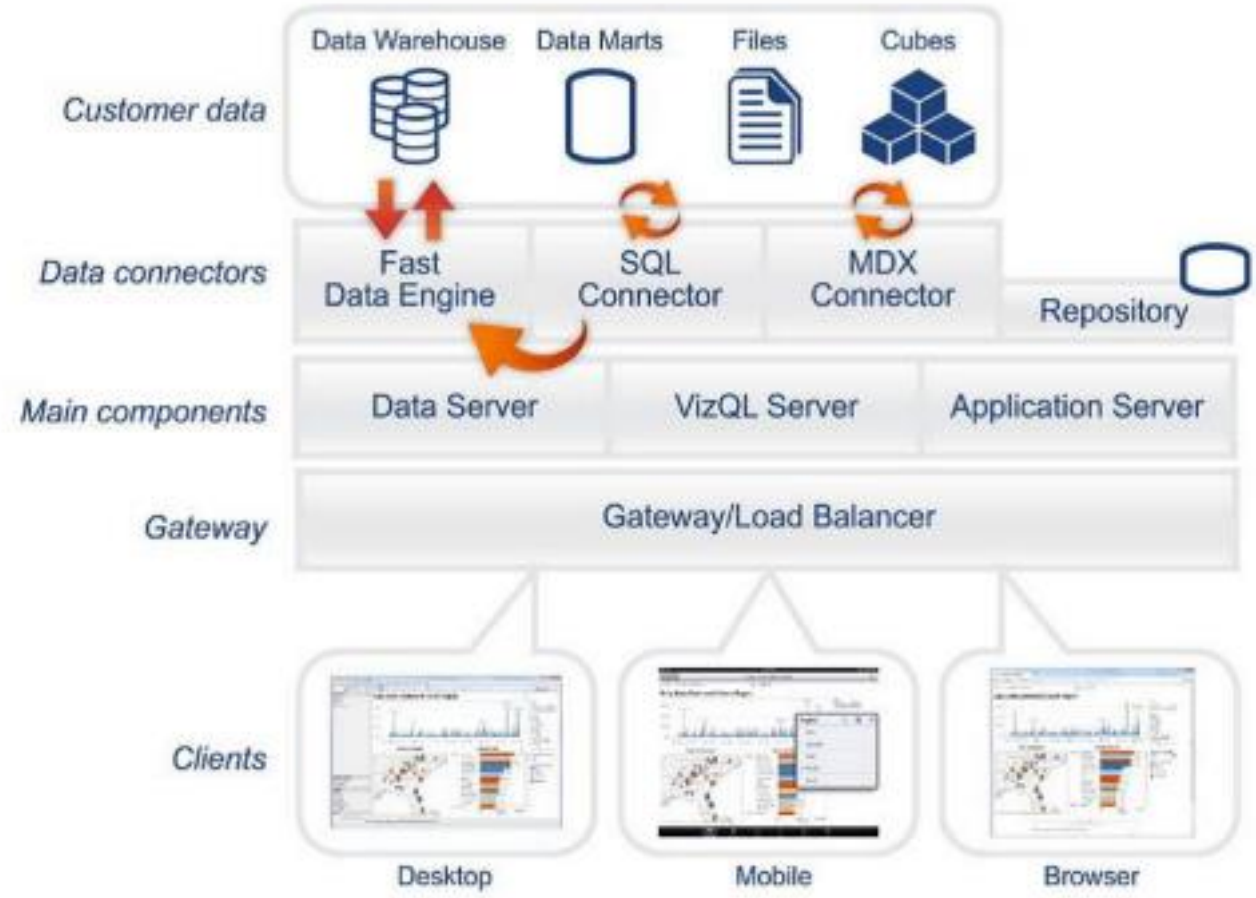
Each style will describe a system category that consists of :

- A set of components (eg: a database, computational modules) that will perform a function required by the system.
- The set of connectors will help in coordination, communication, and cooperation between the components.
- Conditions that how components can be integrated to form the system.
- Semantic models that help the designer to understand the overall properties of the system.

1.2 Scope

Architecture Design Document (ADD) is an architecture design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the design principles may be defined during requirement analysis and then refined during architectural design work.

2. Architecture



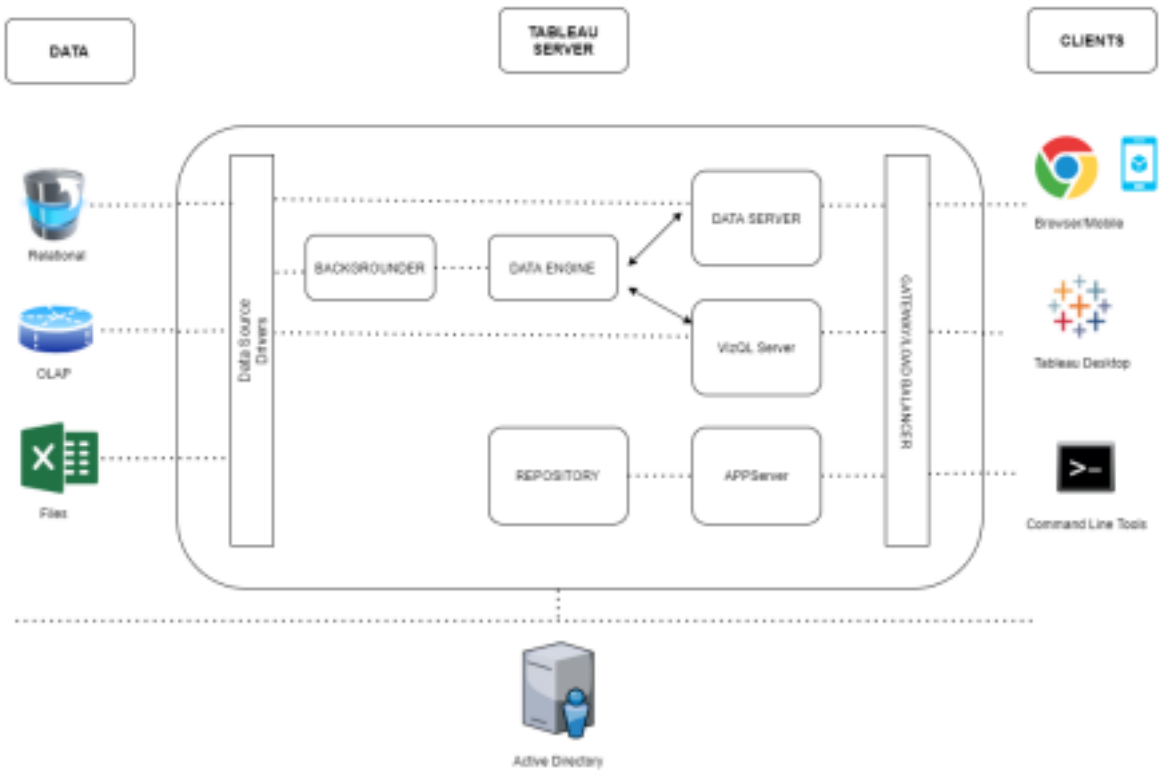
PowerBi Server Architecture

Power BI is a business suite that includes several technologies that work together. To deliver outstanding business intelligence solutions, Microsoft Power BI technology consists of a group of components such as:

- Power Query (for data mash-up and transformation)
- Power BI Desktop (a companion development tool)
- Power BI Mobile (for Android, iOS, Windows phones)
- Power Pivot (for in-memory tabular data modeling)
- Power View (for viewing data visualizations)
- Power Map (for visualizing 3D geo-spatial data)
- Power Q&A (for natural language Q&A)

6 ARCHITECTURE DESIGN

The following diagram shows Tableau Server's architecture:



1. Data Sources

An important component of Power BI is its vast range of data sources. You can import data from files in your system, cloud-based online data sources or connect directly to live connections. If you import from data on-premise or online services there is a limit of 1 GB. Some commonly used data sources in Power BI are:

- Excel
- Text/CSV
- XML
- JSON
- Oracle Database
- IBM DB2 Database
- MySQL Database
- PostgreSQL Database
- Sybase Database
- Teradata Database
- SAP HANA Database
- SAP Business Warehouse server
- Amazon Redshift
- Impala
- Google BigQuery (Beta)
- Azure SQL Database
- Salesforce Reports
- Google Analytics

- Facebook
- GitHub

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GOOGLE PLAY STORE

7 **ARCHITECTURE DESIGN**

2. Power BI Desktop

Power BI Desktop is a client-side tool known as a companion development and authoring tool.

This desktop-based software is loaded with tools and functionalities to *connect to data sources, transform data, data modeling and creating reports.*

3. Power BI Service

Power BI Service is a web-based platform from which you can *share reports made on Power BI Desktop, collaborate with other users, and create dashboards.*

4. Power BI Report Server

The Power BI Report Server is similar to the Power BI Service. The only difference between these two is that Power BI Report Server is an on-premise platform. It is used by organizations who do not want to publish their reports on the cloud and are concerned about the security of their data.

5. Power BI Gateway

This component is used to connect and access on-premise data in secured networks. Power BI Gateways are generally used in organizations where data is kept in security and watch. Gateways help to extract such data through secure channels to Power BI platforms for analysis and reporting.

6. Power BI Mobile

Power BI Mobile is a native Power BI application that runs on iOS, Android, and Windows mobile devices. For viewing reports and dashboards, these applications are used.

7. Power BI Embedded

Power BI Embedded offers APIs which are used to embed visuals into custom applications.

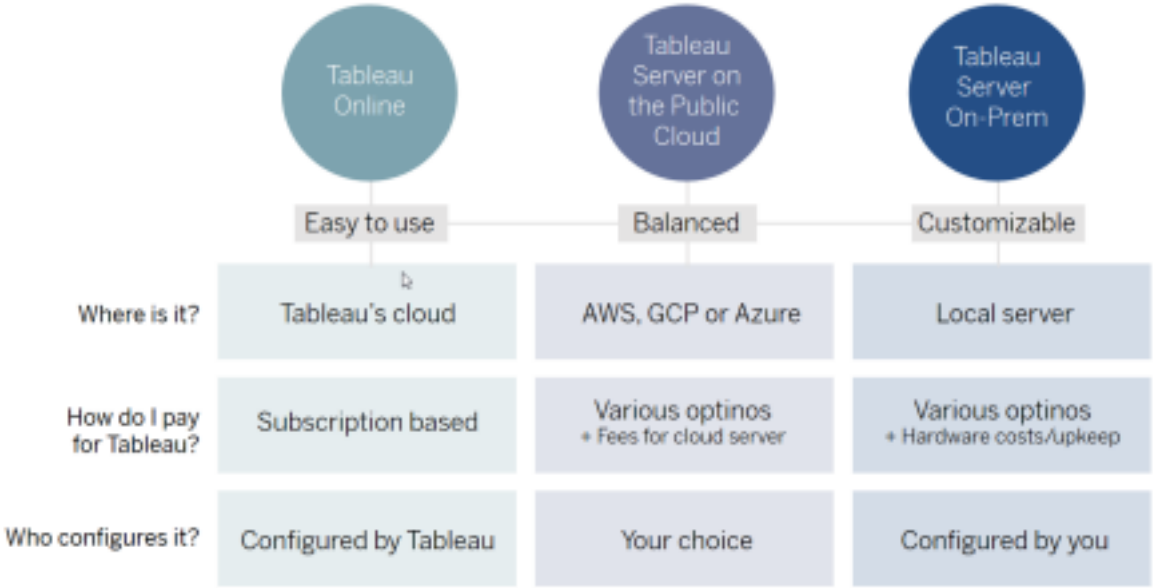
8. Working of Power BI Architecture

Now that we have understood the individual components of Power BI, let us learn how all of these components work in tandem. We will understand the Power BI architecture with the help of this diagram**.**

3. Deployment Description

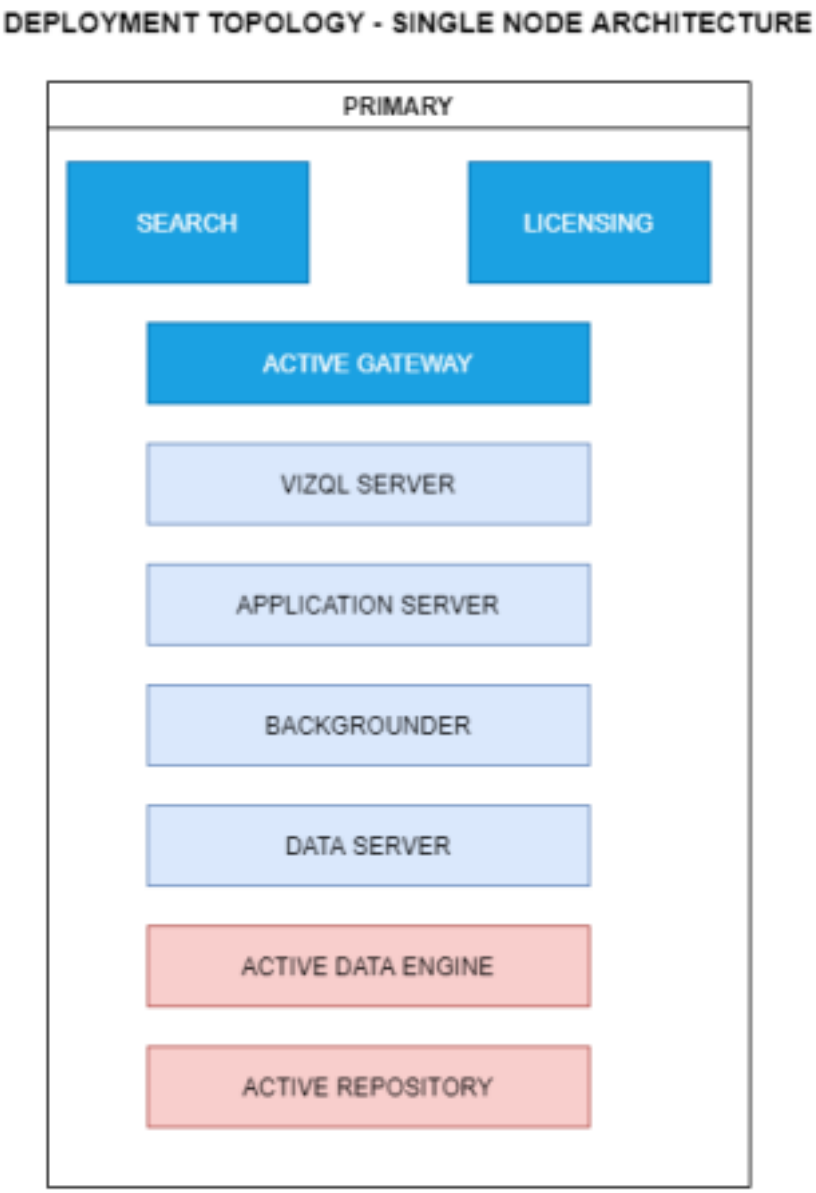
3.1 Deployment options in Tableau

Tableau's analytics platform offers three different deployment options depending on your environment and needs. The below graphic shows each option at a glance:



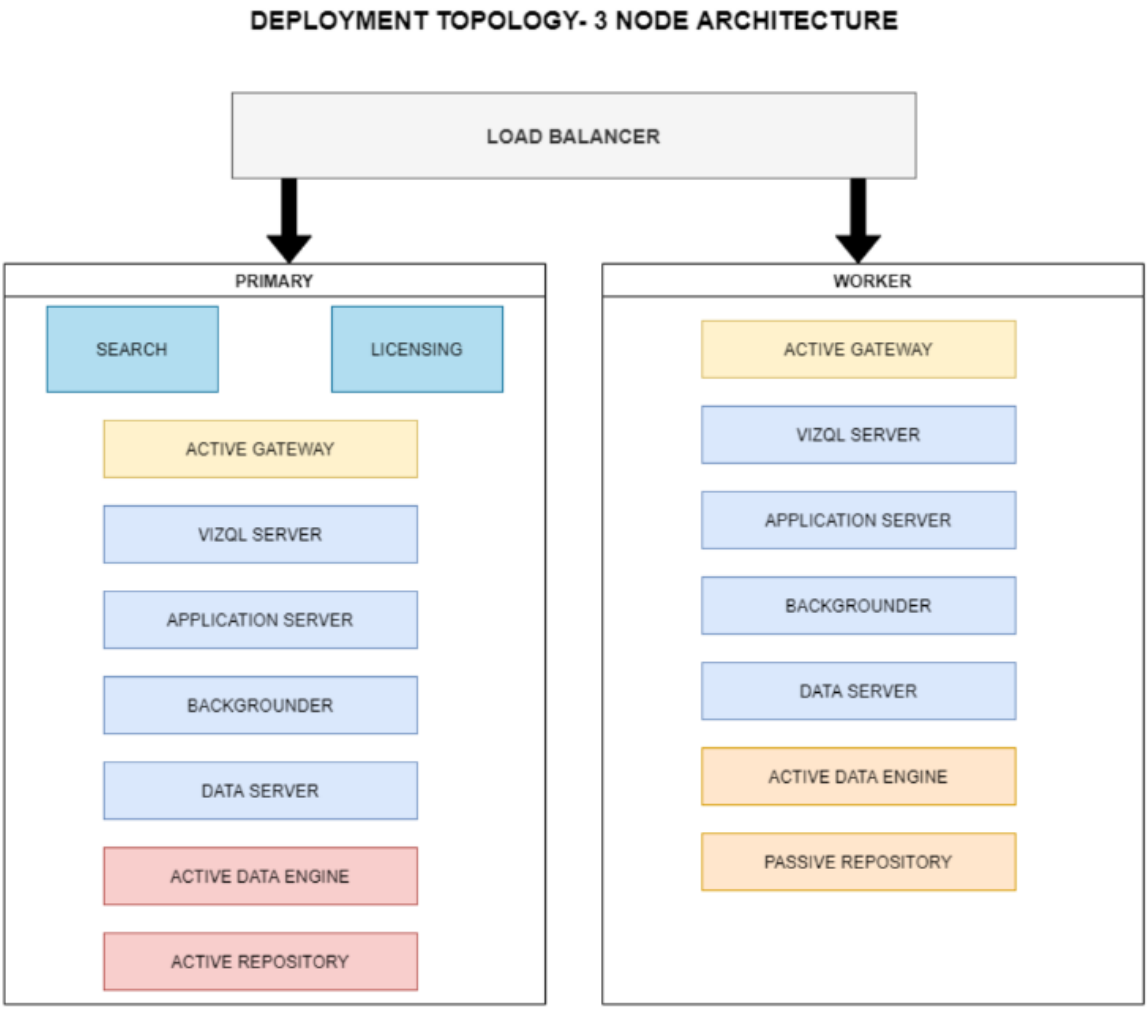
1**. Tableau Online** Get up and running quickly with no hardware required. Tableau Online is fully hosted by Tableau so all upgrades and maintenance are automatically managed for you. 2. **Tableau Server** deployed on public cloud: Leverage the flexibility and scalability of cloud infrastructure without giving up control. Deploy to Amazon Web Services, Google Cloud Platform, or Microsoft Azure infrastructure to quickly get started with Tableau Server (on your choice of Windows or Linux). Bring your own license or purchase on your preferred marketplace. 3**. Tableau Server deployed on-premises**: Manage and scale your own hardware and software (whether Windows or Linux) as needed. Customize your deployment as you see fit.

3.2 Single Node Architecture



This architecture is a single node architecture. This is the most simple deployment topology.

3.3) 3 Node Architecture



The architecture is a 3 Node Architecture which is more capable to handle concurrent requests.

If we need a high availability, or want a second instance of the repository, we must install Tableau Server on a cluster of at least three computers. In a cluster that includes at least three nodes, you can configure two instances of the repository, which gives our cluster failover capability.

3.4) 5 Node Architecture

When we install Tableau Server on a Five-node cluster, we can install server processes on one or both nodes. A five-node cluster can improve the performance of Tableau Server, because the work is spread across multiple machines.

Note the following about five-node clusters:

• A five-node cluster does not provide failover or support for high availability.

• You can't install more than one instance of the repository on a two-node cluster, and the repository must be on the initial node.