CONTENT

- What is Tableau?
- Why use Tableau?
- How Tableau can be used?
- Features of Tableau
- Advantages of tableau
- Disadvantages of tableau
- Tableau Architecture

What is Tableau?

▶ **Tableau** is a **powerful** and **fastest** growing **data visualization tool** used in the Business Intelligence Industry.

▶ Tableau is widely-used data visualization business intelligence tool that allows users to **connect, analyze** and **share data** in an interactive and meaningful way.

▶ It allows users to connect to and visualize data from a wide variety of sources, including spreadsheets, databases & cloud services.

▶ It helps organizations and individuals make data-driven decisions by turning complex data into simple, interactive visualizations.

▶ It helps in simplifying raw data in a very easily understandable format. it may be a graph, report, etc.

▶ Tableau helps create the data that can be understood by professionals at any level in an organization. It also allows non-technical users to create customized dashboards.

▶ **Example: – If you have any data like Big Data, Hadoop, SQL, or any cloud data and if you want to analyze that given data in the form of pictorial representation of data, you can use Tableau.**

What is Tableau?

▶ **Data analysis is very fast with Tableau tool and the visualizations created are in the form of dashboards and worksheets.**

▶ With Tableau, users can create interactive and visually compelling dashboards, charts, and graphs to explore and analyze their data.

▶ It offers a drag-and-drop interface and a wide range of customization options, allowing users to tailor their visualizations to their specific needs.

▶ Tableau is used by **businesses, organizations**, and individuals across a wide range of **industries, including finance, healthcare, education,** and **government**, among others.

Tableau

▶ Tableau is a **versatile tool** that can be used in a wide variety of industries and applications to turn complex data into actionable insights.

▶ Tableau also offers features such as **data blending**, which allows users to combine data from multiple sources, and **real-time** data connectivity, which enables users to analyze and visualize data as it's being generated.

▶ It's a powerful tool for anyone looking to gain insights from their data and communicate those insights to others in a clear and compelling way.

Why use Tableau?

❑ **Here are some reasons to use Tableau:**

✓ Ultimate skill for Data Science

✓ User-Friendly

✓ Apply to any Business

✓ Fast and Easy

✓ You don't need to do any Coding

✓ Community is Huge

✓ Hold the power of data

✓ It makes it easier to understand and explain the Data Reports

How Tableau can be used?

▶ **Sales Dashboard**: A company can create a sales dashboard in Tableau that displays the sales data in a visually appealing way. The dashboard can show metrics like total revenue, top-selling products, and customer segmentation, all in one place. This can help the sales team to identify patterns, opportunities, and trends.

▶ **Financial Analysis**: Financial analysts can use Tableau to create reports and visualizations that highlight key financial metrics like revenue, expenses, and profit margins. They can use Tableau's powerful calculation and aggregation features to create customized KPIs and charts that give them insight into the company's financial health.

▶ **Marketing Campaigns:** Tableau can be used to track the performance of marketing campaigns. Marketers can create dashboards that show metrics like website traffic, conversion rates, and customer demographics. This helps them to make informed decisions about which campaigns to continue and which to discontinue.

How Tableau can be used?

- **Healthcare Analytics**: Healthcare providers can use Tableau to analyze patient data and identify trends and patterns. For example, they can create visualizations that show the correlation between certain diseases and patient demographics, or the impact of certain treatments on patient outcomes.

- **Social Media Analytics**: Social media marketers can use Tableau to track the performance of their social media campaigns. They can create dashboards that show metrics like engagement rates, click-through rates, and audience demographics. This helps them to optimize their campaigns and reach their target audience more effectively.

- In summary, Tableau is a **versatile tool** that can be used in a wide variety of industries and applications to turn complex data into actionable insights.

Features of Tableau

- **Data connectivity:** Tableau can connect to a wide variety of data sources, including spreadsheets, databases, cloud-based platforms, and more. It can handle large and complex datasets with ease.

- **Drag-and-drop interface:** Tableau's intuitive interface allows users to create charts and graphs by simply dragging and dropping data onto the workspace. This makes it easy for users to create visualizations quickly without needing extensive coding or programming knowledge.

- **Interactive dashboards:** Tableau allows users to create interactive dashboards that enable viewers to explore data and discover insights. Dashboards can be customized to meet specific business needs and can be embedded into websites or shared via email.

- **Powerful data analysis:** Tableau includes a range of powerful analytics tools, including statistical modeling, forecasting, and data blending. These tools enable users to uncover trends and patterns in their data that might not be immediately obvious.

Features of Tableau

▶ **Collaboration and sharing:** Tableau makes it easy for teams to collaborate on data projects. Users can share visualizations and dashboards with colleagues and stakeholders, and Tableau Server and Tableau Online allow for secure sharing of data across organizations.

▶ **Mobile support:** Tableau is optimized for mobile devices, allowing users to view and interact with dashboards on their smartphones and tablets.

▶ **Customization:** Tableau can be customized to meet the needs of specific industries and organizations. Users can create custom visualizations, themes, and templates to ensure their dashboards reflect their brand and business requirements.

Advantages of tableau

▶ Data Visualization

▶ Quickly Create Interactive Visualization

▶ Comfortable in Implementation

▶ Tableau can Handle Large Amounts of Data

▶ Use of other Scripting Language in Tableau

▶ Mobile Support and Responsive Dashboard

Disadvantages of tableau

▶ Scheduling of Reports

▶ No Custom Visual Imports

▶ Custom Formatting in Tableau

▶ Static and Single Value Parameter

▶ Screen Resolution on Tableau Dashboards

Tools of Tableau

- **List of tableau tools**
- Tableau Desktop
- Tableau Public
- Tableau Online
- Tableau Server
- Tableau Reader
- Tableau Prep
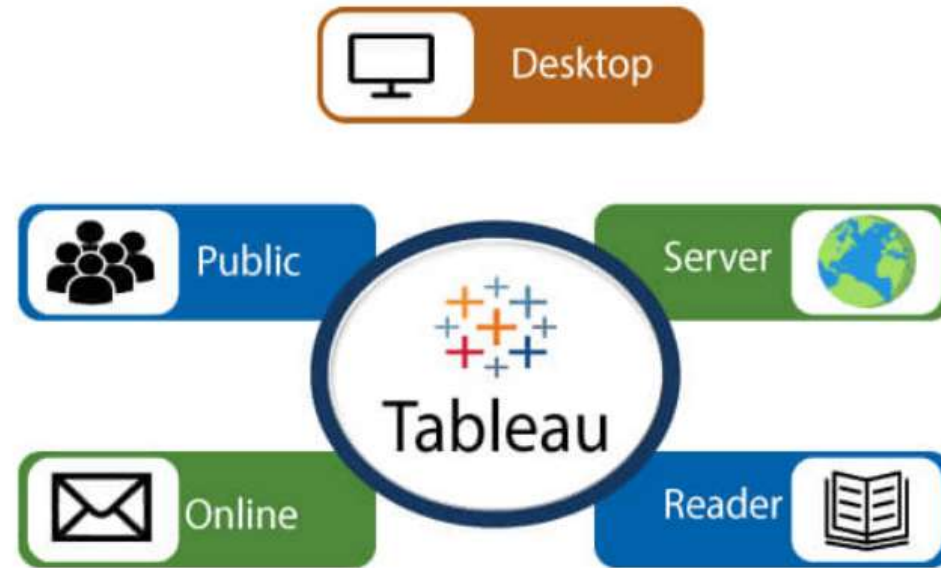
Tools of tableau

▶ **Data analytics in Tableau is classified into two parts:-**

1. **Developer Tools:-** The Tableau tools which are used for development such as the creation of charts, dashboards, report generation and visualization are known as developer's tools. Tableau Desktop and the Tableau Public, are the example of this type.

2. **Sharing Tools:-** The role of these tools are sharing the reports, visualizations, and dashboards that were created using the developer tools. The Tableau tools that fall into this category are Tableau Server, Tableau Online, and Tableau Reader.

Tools of Tableau

Tableau Desktop

▶ This is the authoring and development environment for creating visualizations and dashboards.

▶ It is a Windows-based application that can connect to various data sources, such as spreadsheets, databases, cloud-based applications, and more.

▶ Users can create and edit workbooks that contain sheets, which are individual visualizations, and dashboards, which are collections of sheets that allow for interactive filtering and exploration.

▶ For live data analysis, Tableau Desktop establish connectivity between the Data Warehouse and other various types of files. The dashboards and the workbooks created here can be either shared locally or publicly.

Tools of Tableau

Tableau Desktop

▶ Based on the connectivity to the publishing option and data sources, Tableau Desktop is also classified into two parts-

1. **Tableau Desktop Personal:-** The personal version of the Tableau desktop keeps the workbook private, and the access is limited. The workbooks can't be published online. So, it should be distributed either offline or in Tableau public.

2. **Tableau Desktop Professional:-** It is similar to Tableau desktop. The main difference is that the workbooks created in the Tableau desktop can be published online or in Tableau server. In the professional version, there is full access to all sorts datatypes. It is best for those who want to publish their workbook in Tableau server.

Tools of Tableau

Tableau Public

▶ This Tableau version is specially built for cost-effective users. The word '**Public**' means that the created workbooks cannot be saved locally.

▶ They should be kept on the Tableau's public cloud, which can be accessed and viewed by anyone.

▶ There is no privacy of the files saved on the cloud, so anyone can access and download the same data.

▶ This version is the best for them who want to share their data with the general public and for the individuals who want to learn Tableau.

Tools of Tableau

Tableau Server

▶ This is the enterprise-level deployment and management platform that allows users to share, collaborate, and publish workbooks and dashboards created in Tableau Desktop.

▶ Tableau Server is installed on a centralized server and provides web-based access to the Tableau content.

▶ It provides a secure and scalable way to share data and insights within an organization.

Tools of Tableau

Tableau Online

▶ This is the cloud-based version of Tableau Server, which allows users to access and share Tableau content from anywhere, using a web browser or a mobile device.

▶ Tableau Online provides the same functionality as Tableau Server, but with the added convenience of not requiring the installation of software or hardware.

▶ There is no storage limit on the data which is published in the Tableau Online.

▶ Tableau Online creates a direct link over 40 data sources who are hosted in the cloud such as the **Hive, MySQL, Spark SQL, Amazon Aurora**, and many more.

▶ To be published, both Tableau Server and Tableau online require the workbooks that are created by Tableau Desktop.

▶ Data that flow from the web applications say Tableau Server and Tableau Online also support **Google Analytics** and **Salesforce.com**.

Tools of Tableau

Tableau Prep

- Tableau Prep helps with the cleaning, shaping, and organization of data before it can be analyzed.

- It can gather a considerable amount of data from varied sources and transform them.

- Its simple drag-and-drop features quickly streamline the complicated tasks of pivots, unions, joins, aggregate, etc.

- Once the data is clean, it can be subsequently used in the Tableau Prep output as the data source for Tableau Desktop for analysis.
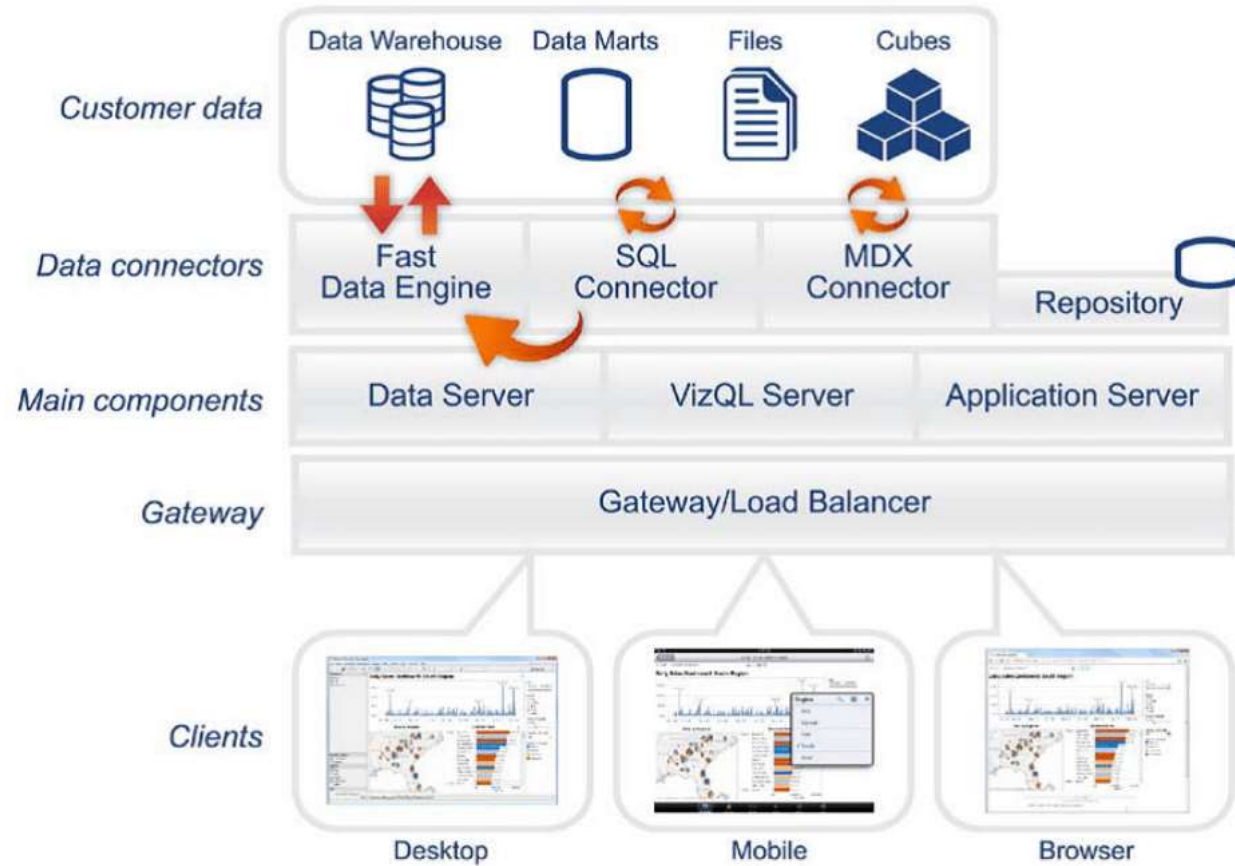
Tableau Architecture

▶ Tableau Server is designed to connect many data tiers. It can connect clients from Mobile, Web, and Desktop.

▶ Tableau Desktop is a powerful data visualization tool. It is very secure and highly available.

▶ It can run on both the physical machines and virtual machines.

▶ It is a **multi-process, multi-user, and multi-threaded system.**

▶ Providing such powerful features requires unique architecture.
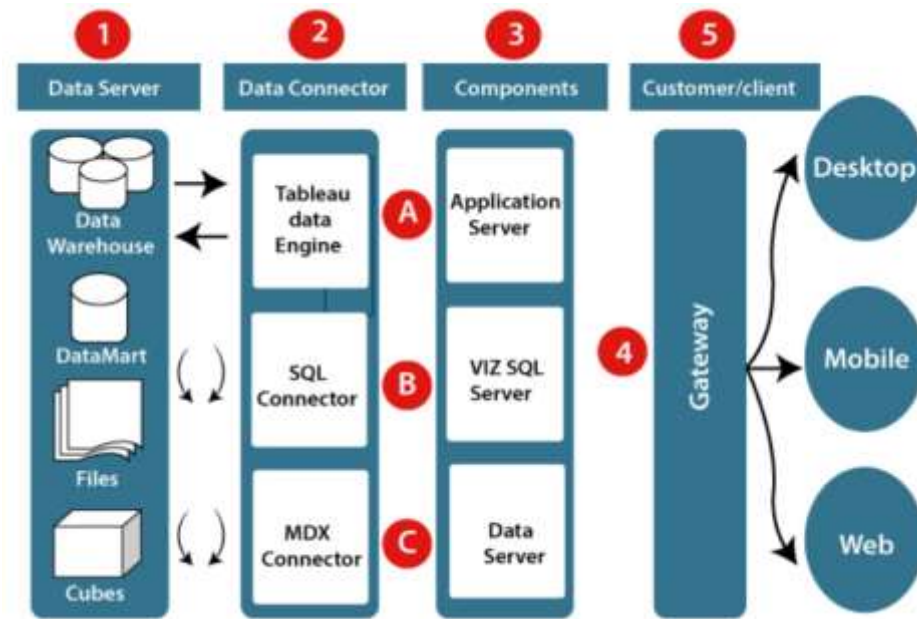
Tableau Architecture

The following diagram shows Tableau Server's architecture:

Tableau Architecture

1. Data server:- The primary component of Tableau Architecture is the Data sources which can connect to it.

- Tableau can connect with multiple data sources. It can blend the data from various data sources. It can connect to an **excel file, database**, and a **web application** at the same time. It can also make the relationship between different types of data sources.

2. Data connector:- The Data Connectors provide an interface to connect external data sources with the Tableau Data Server.

- Tableau has in-built SQL/ODBC connector. This ODBC Connector can be connected with any databases without using their native connector. Tableau desktop has an option to select both extract and live data. On the uses basis, one can be easily switched between live and extracted data.

✓ **Real-time data or live connection**

✓ **Extracted or in-memory data**

Tableau Architecture

Components of Tableau server:

Different types of component of the Tableau server are:

- ✓ **Application Server:** The application server handles login processes, permission management, authentications, and authorizations.

- ✓ **VizQL Server:** The VizQL server is utilized to turn the data source's queries into visuals.

- ✓ **Data Server:** The data server facilitates metadata administration, driver deployment, and extract management by centralizing them.

- ✓ **Backgrounder:** The backgrounder controls background processes and refreshes scheduled extracts.

Components of Tableau server:

▶ **Gateway or Load Balancer:** A gateway is a type of web server that allows clients to connect with the components of Tableau Server by routing their requests over HTTP.

▶ **Clients (Web Browsers and Mobile Apps):** Mobile browsers and applications may be used to interactively see the server dashboards. Tableau Server is supported by web browsers such as Google Chrome, Safari, Firefox, and Internet Explorer.

▶ **Clients (Tableau Desktop):** Tableau Desktop is a business analytics solution that allows users to access a variety of data sources and create visuals.