

Learn Tableau in 1 Day

By Krishna Rungta

Copyright 2019 - All Rights Reserved – Krishna Rungta

ALL RIGHTS RESERVED. No part of this publication may be reproduced or transmitted in any form whatsoever, electronic, or mechanical, including photocopying, recording, or by any informational storage or retrieval system without express written, dated and signed permission from the author.

Table Of Content

Chapter 1: What is Tableau? Uses and Applications

1. [What is Tableau?](#)
2. [Tableau Product Suite](#)
3. [How does Tableau work?](#)
4. [Excel Vs. Tableau](#)

Chapter 2: Tableau Architecture & Server Components

1. [Tableau Server Architecture](#)
2. [Data Connectors](#)
3. [Components of Tableau Server](#)
4. [Gateway](#)
5. [Clients](#)

Chapter 3: How to Download & Install Tableau Public (Free) & Desktop (Trial)

1. [Download and Install Tableau Public](#)
2. [Download and Install Tableau Desktop](#)

Chapter 4: Introduction to Tableau Desktop Software: Workspace & Navigation

1. [Tableau Desktop Workspace](#)
2. [Tableau Navigation](#)

Chapter 5: Tableau Data Connections to Databases and Multiple Sources

1. [Connecting to various data sources](#)
2. [Connection to Text File](#)
3. [Connecting to Excel File](#)
4. [Connection to Database](#)
5. [Connection to Websites](#)
6. [Connecting to Tableau Server](#)
7. [Data Relationship](#)
8. [Data Sorting](#)
9. [Replacing Data Source](#)

Chapter 6: Types of Filters in Tableau: Condition by Formula, Extract, Context

1. [Types of Filters:](#)
2. [Filter condition in Tableau](#)
3. [Filter Condition by Formula:](#)

Chapter 7: Tableau Create Group, Hierarchy, Sets & Sort Data

1. [Sort data:](#)
2. [Build groups:](#)
3. [Build Hierarchy:](#)
4. [Build Sets:](#)

Chapter 8: Tableau Charts & Graphs Tutorial: Types & Examples

1. [Measure names and Measure values:](#)
2. [Generated Fields:](#)
3. [Understand how and when to build different types of Visuals:](#)

Chapter 1: What is Tableau?

Uses and Applications

What is Tableau?

Tableau is a powerful and fastest growing data visualization tool used in the Business Intelligence Industry. It helps in simplifying raw data into the very easily understandable format.

Data analysis is very fast with Tableau and the visualizations created are in the form of dashboards and worksheets. The data that is created using Tableau can be understood by professional at any level in an organization. It even allows a non-technical user to create a customized dashboard.

The best feature Tableau are

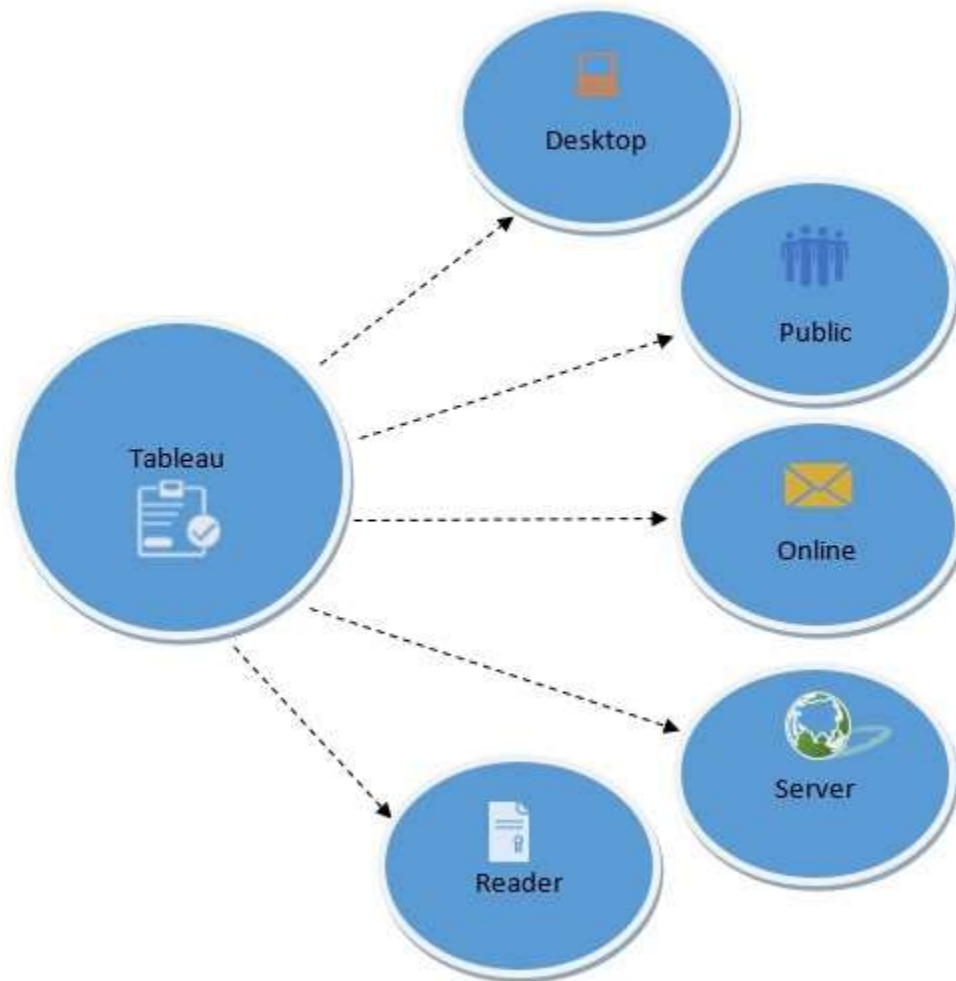
- Data Blending Real
- time analysis
- Collaboration of data

The great thing about Tableau software is that it doesn't require any technical or any kind of programming skills to operate. The tool has garnered interest among the people from all sectors such as business, researchers, different industries, etc.

Tableau Product Suite

The Tableau Product Suite consists of

- Tableau Desktop
- Tableau Public
- Tableau Online
- Tableau Server
- Tableau Reader



For clear understanding, data analytics in tableau can be classified into two section

1. **Developer Tools:** The Tableau tools that are used for development such as the creation of dashboards, charts, report

generation, visualization fall into this category. The Tableau products, under this category, are the Tableau Desktop and the Tableau Public.

2. **Sharing Tools:** As the name suggests, the purpose of the tool is sharing the visualizations, reports, dashboards that were created using the developer tools. Products that fall into this category are Tableau Online, Server, and Reader.

Let's study all the products one by one.

Tableau Desktop

Tableau Desktop has a rich feature set and allows you to code and customize reports. Right from creating the charts, reports, to blending them all together to form a dashboard, all the necessary work is created in Tableau Desktop.

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

Based on the connectivity to the data sources and publishing option, Tableau Desktop is classified into

- **Tableau Desktop Personal:** The development features are similar to Tableau Desktop. Personal version keeps the workbook private, and the access is limited. The workbooks cannot be published online. Therefore, it should be distributed either Offline or in Tableau Public.
- **Tableau Desktop Professional:** It is pretty much similar to Tableau Desktop. The difference is that the work created in the

Tableau Desktop can be published online or in Tableau Server. Also, in Professional version, there is full access to all sorts of the datatype. It is best suitable for those who wish to publish their work in Tableau Server.

Tableau Public

It is Tableau version specially build for the cost-effective users. By the word "Public," it means that the workbooks created cannot be saved locally, in turn, it should be saved to the Tableau's public cloud which can be viewed and accessed by anyone.

There is no privacy to the files saved to the cloud since anyone can download and access the same. This version is the best for the individuals who want to learn Tableau and for the ones who want to share their data with the general public.

Tableau Server

The software is specifically used to share the workbooks, visualizations that are created in the Tableau Desktop application across the organization. To share dashboards in the Tableau Server, you must first publish your work in the Tableau Desktop. Once the work has been uploaded to the server, it will be accessible only to the licensed users.

However, It's not necessary that the licensed users need to have the Tableau Server installed on their machine. They just require the login credentials with which they can check reports via a web browser. The security is high in Tableau server, and it is much suited for quick and effective sharing of data in an organization.

The admin of the organization will always have full control over the server. The hardware and the software are maintained by the organization.

Tableau Online

As the name suggests, it is an online sharing tool of Tableau. Its functionalities are similar to Tableau Server, but the data is stored on servers hosted in the cloud which are maintained by the Tableau group.

There is no storage limit on the data that can be published in the Tableau Online. Tableau Online creates a direct link to over 40 data sources that are hosted in the cloud such as the MySQL, Hive, Amazon Aurora, Spark SQL and many more.

To publish, both Tableau Online and Server require the workbooks created by Tableau Desktop. Data that is streamed from the web applications say Google Analytics, Salesforce.com are also supported by Tableau Server and Tableau Online.

Tableau Reader

Tableau Reader is a free tool which allows you to view the workbooks and visualizations created using Tableau Desktop or Tableau Public. The data can be filtered but editing and modifications are restricted. The security level is zero in Tableau Reader as anyone who gets the workbook can view it using Tableau Reader.

If you want to share the dashboards that you have created, the receiver should have Tableau Reader to view the document.

How does Tableau work?

Tableau connects and extracts the data stored in various places. It can pull data from any platform imaginable. A simple database such as an excel, pdf, to a complex database like Oracle, a database in the cloud such as Amazon webs services, Microsoft Azure SQL database, Google Cloud SQL and various other data sources can be extracted by Tableau.

When Tableau is launched, ready data connectors are available which allows you to connect to any database. Depending on the version of Tableau that you have purchased the number of data connectors supported by Tableau will vary.

The pulled data can be either connected live or extracted to the Tableau's data engine, Tableau Desktop. This is where the Data analyst, data engineer work with the data that was pulled up and develop visualizations. The created dashboards are shared with the users as a static file. The users who receive the dashboards views the file using Tableau Reader.

The data from the Tableau Desktop can be published to the Tableau server. This is an enterprise platform where collaboration, distribution, governance, security model, automation features are supported. With the Tableau server, the end users have a better experience in accessing the files from all locations be it a desktop, mobile or email.

Excel Vs. Tableau

Both Excel and Tableau are data analysis tools, but each tool has its unique approach to data exploration. However, the analysis in Tableau is more potent than excel.

Excel works with rows and columns in spreadsheets whereas Tableau enables in exploring excel data using its drag and drop feature.

Tableau formats the data in Graphs, pictures that are easily understandable.

Parameters	Excel	Tableau
Purpose	Spreadsheet application used for manipulating the data.	Perfect visualization tool used for analysis.
Usage	Most suitable for statistical analysis of structured data.	Most suitable for quick and easy representation of big data which helps in resolving the big data issues.
Performance	Moderate speed with no option to quicken.	Moderate speed with options to optimize and enhance the progress of an operation.
Security	The inbuilt security feature is weak when compared to Tableau. The security update needs to be installed on a regular basis.	Extensive options to secure data without scripting. Security features like row level security and permission are inbuilt.
User Interface	To utilize excel to full potential, macro and visual basic scripting knowledge is required	The tool can be used without any coding knowledge.
Business need	Best for preparing on-off reports with small data	Best while working with big data.
Products	Bundled with MS Office tools	Comes with different versions such as the Tableau server, cloud, and desktop.
Integration	Excel integrates with around 60 applications	Tableaus integrated with over 250 applications
Real time data exploration	When you are working in excel, you need have an idea of where your data takes you to get to know the insights	In Tableaus, you are free to explore data without even knowing the answer that you want. With the in-built features like data blending and drill-down, you will be able to determine the variations and data patterns.

Easy Visualizations	When working in excel, we first manipulate the data that is present and then the visualization such as the different charts, graphs are created manually. To make the visualizations easily understandable, you should understand the features of excel well.	Whereas in Tableau, the data is visualized from the beginning.
---------------------	---	--

To conclude, Tableau beats Excel in major areas like the interactive dashboards, visualizations, capabilities to work with large-scale data and many more.

Summary

- Tableau is a powerful and fastest growing data visualization tool used in the Business Intelligence Industry
- The Tableau Product Suite consists of 1) Tableau Desktop 2) Tableau Public 3) Tableau Online 4) Tableau Server and Tableau Reader
- Tableau Desktop has a rich feature set and allows you to code and customize reports
- In Tableau public, workbooks created cannot be saved locally, in turn, it should be saved to the Tableau's public cloud which can be viewed and accessed by anyone
- Tableau server is specifically used to share the workbooks, visualizations that are created in the Tableau Desktop application across the organization
- Tableau online has all the similar functionalities of the Tableau Server, but the data is stored on servers hosted in the cloud which are maintained by the Tableau group.
- Tableau Reader is a free tool which allows you to view the workbooks and visualizations created using Tableau Desktop or Tableau Public.

- Tableau connects and extracts the data stored in various places. It can pull data from any platform imaginable.
- The spreadsheet application used for manipulating the data while Tableau is a perfect visualization tool used for analysis

Chapter 2: Tableau Architecture & Server Components

Tableau Server is designed in a way to connect many data tiers. It can connect clients from desktop, mobile, and web. Tableau Desktop is a robust data visualization tool. It is highly available and secure.

It can run on both virtual and physical machines. It is a multi-user, multi-process and multi-threaded system.

Providing such powerful features requires a robust architecture. Let's study the Tableau Server Architecture in this tutorial.

Tableau Server Architecture

The various layers used in the Tableau server are given in the following architecture diagram

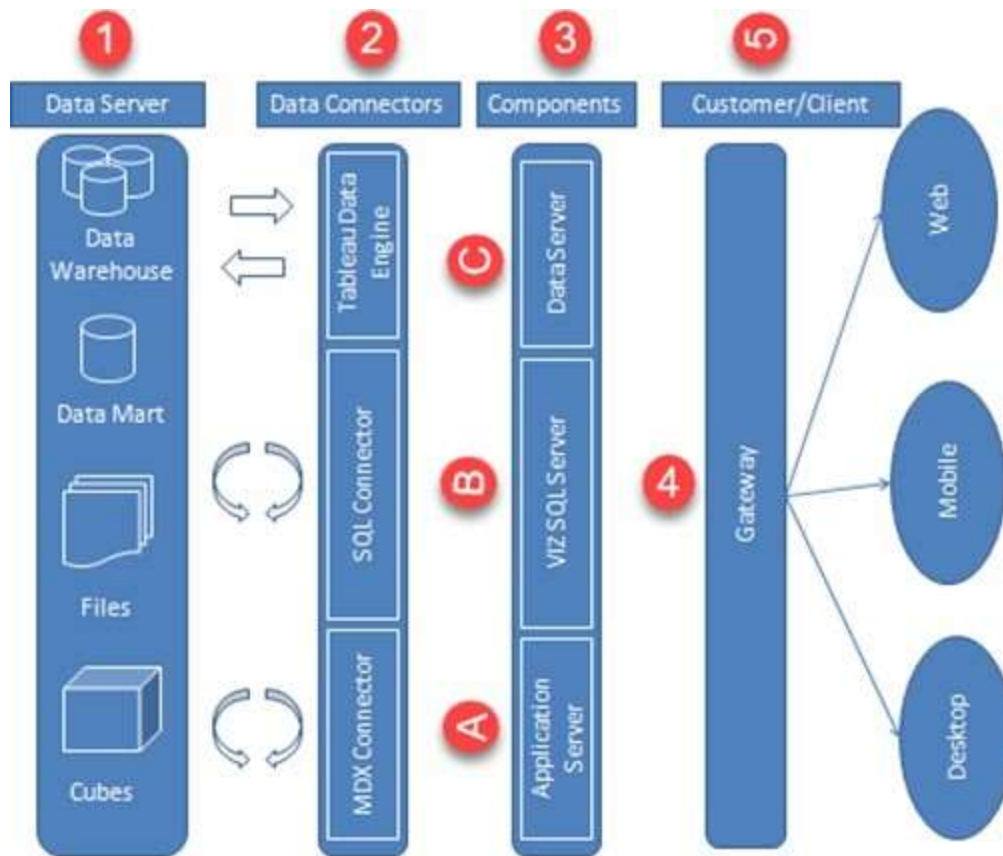


Tableau Architecture Diagram

Let's study the different components of Tableau Architecture

1. Data Server

The primary component of Tableau Architecture is the Data sources it can connect to it.

Tableau can connect to multiple data sources. These data sources can be on-premise or remotely located. It can connect to a database, excel file, and a web application all at the same time. Tableau can connect data from heterogeneous environments. It can blend the data from multiple data sources. It can also make the relationship between various types of data sources.

2. Data Connectors

The Data Connectors provide an interface to connect external data sources to Tableau Data Server.

Tableau has in-built ODBC/SQL connector. This ODBC Connector can connect to any databases without using their native connector.

Tableau has an option to select both live and extract data. Based on the usage, one can be easily switched between extracted and live data.

- **Live Connection or Real time data:** Tableau can connect to real time data by linking to the external database directly. It uses the infrastructure of existing database system by sending dynamic MDX (Multidimensional Expressions) and SQL statements. This feature can link to the live data with Tableau rather than importing the data. It makes good the investment done by an organization on a fast and optimized database system. In many enterprises, the size of the database is huge and is updated periodically. In those cases, Tableau works as a front-end visualization tool by connecting to the live data.
- **Extracted or In-memory data:** Tableau has an option to extract the data from external data sources. We can make a local copy in the form of tableau extract file. It can extract millions of records in Tableau data engine with a single click. Tableau's data engine uses storage such as RAM, ROM and cache memory to store and process data. Using filters, Tableau can extract few records from a huge dataset. This improves the performance, especially while working on massive datasets. Extracted or in- memory data allows the users to visualize the data offline, without connecting to the data source.

3. Components of Tableau Server

The different components present in a Tableau server are:

- Application Server
- VizQL Server
- Data Server

A) Application Server:

The application server is used to provide the authentications and authorizations. It handles the administration and permission for web and mobile interfaces. It assures security by recording each session id on Tableau Server. The administrator can configure the default timeout of the session in the server.

B) VizQL Server:

VizQL server is used to convert the queries from the data source into visualizations. Once the client request is forwarded to VizQL process, it sends the query directly to data source and retrieves information in the form of images. This image or visualization is presented to the user. Tableau server creates a cache of visualization to reduce the load time. The cache can be shared across many users who have the permission to view the visualization.

C) Data Server:

Data server is used to manage and store the data from external data sources. It is a central data management system. It provides metadata management, data security, data storage, data connection and driver requirements. It stores the relevant details of data set such as

metadata, calculated fields, sets, groups, and parameters. The data source could extract data as well make live connections to external data sources.

4. Gateway

The gateway channelizes the requests from users to Tableau components. When the client makes a request, it is forwarded to external load balancer for processing. The gateway works as a distributor of processes to various components. In case of absence of external load balancer, gateway also works as a load balancer. For single server configuration, one primary server or gateway manages all the processes. For multiple server configurations, one physical system works as primary server while others are used as worker servers. Only one machine can be used as a primary server in Tableau Server environment.

5. Clients

The dashboards and visualizations in Tableau server can be viewed and edited using different clients. The Clients are Tableau Desktop, web browser and mobile applications.

Clients	Environment
Tableau Desktop	Tableau Desktop is a business analytics tool. It helps to create, view and publish dashboards in Tableau Server. Users can access various data sources and build visualizations in Tableau Desktop.

Mobile	The dashboards from the server can be interactively visualized using mobile browsers and applications. The browser and application can be used to view and edit the contents in the workbook.
Web	Web browsers such as Google Chrome, Safari, Firefox and internet explorer support the Tableau server. The contents and visualizations in the dashboard can be edited through these web browsers.

Summary:

- The architecture of Tableau Server is designed to connect different data sources securely.
- Data Server is the first layer in the architecture. It helps Tableau to connect data in various heterogeneous environments.
- Data connector is the second layer. It helps to connect to various databases using its ODBC connector.
- Tableau can connect the real time live data by connecting the database directly. It can also extract a local copy of data through its in-memory data store for faster processing.
- The components such as Application Server, VizQL Server, and data server act as the third layer.
- The application server is used for authentications and authorizations.
- VizQL is used to convert the SQL query into visualizations.
- Data Server is a centralized data management system used in the architecture.
- A gateway is used to distribute the processes into different components.
- The fourth layer of the architecture are the clients such as Tableau Desktop, web and Mobile.

[Buy Now \\$9.99](#)