Architecture Design

NBA DATA ANALYSIS

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DOCUMENT CONTROL

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VERSION	DATE	AUTHOR	COMMENTS
1.0	10/01/2025	Yash Mohan	Introduction and architecture defined
1.1	12/01/2025	Yash Mohan	Architecture and its description appended and updated.

Reviews:

VERSION	DATE	REVIEWER	COMMENTS

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Contents

1. Introduction

1.1 What is 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.

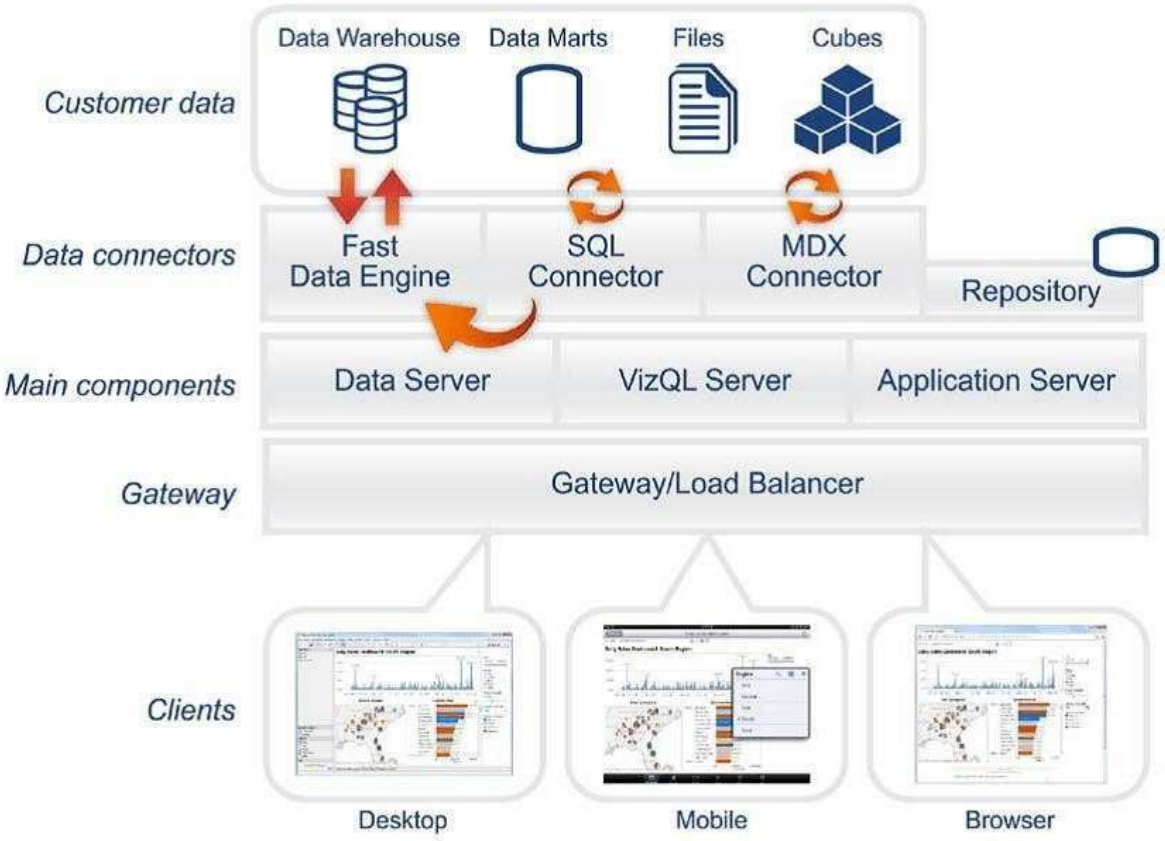
Each style will describe a system category that consists of:

- A set of components (e.g.: 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

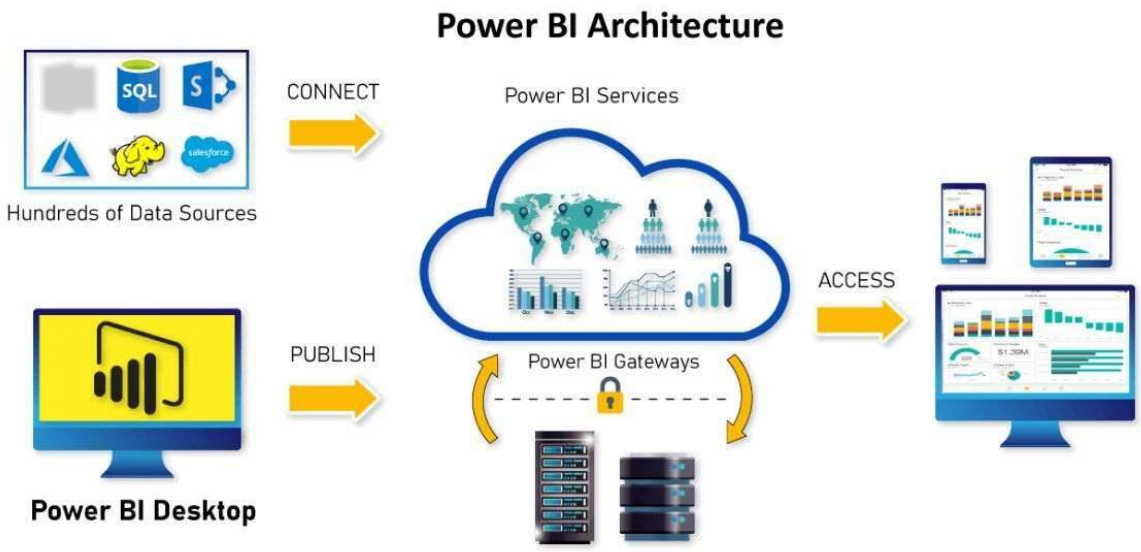
Architecture Design Document (ADD) is an architecture design process that follows a step-by step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the design principles may be defined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

2. Architecture

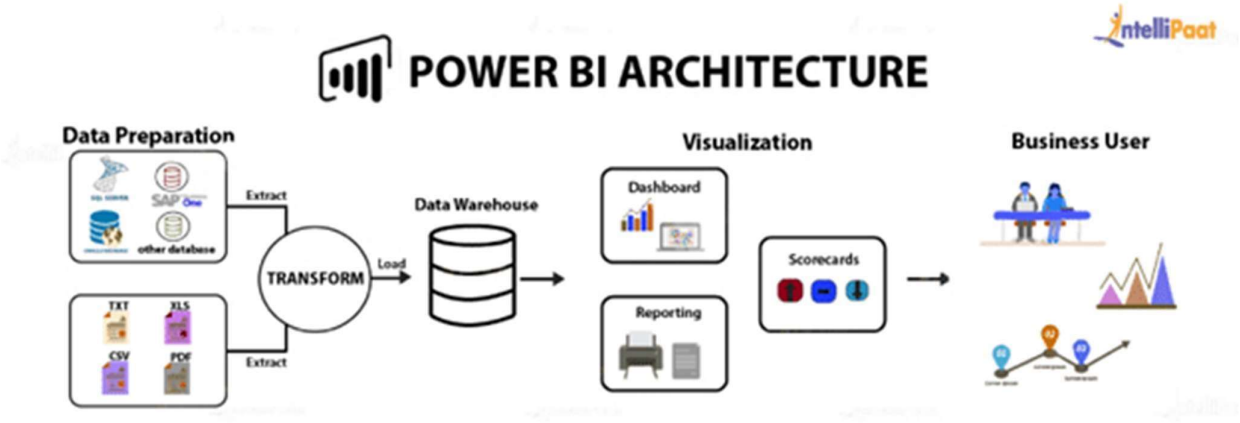


2.1 Power BI Architecture:

Power BI has a highly scalable architecture that integrates data sources, Power Query for ETL, data modelling in Power BI Desktop, interactive visualizations, the cloud-based Power BI for sharing, Power BI Gateway for secure data refresh, and Power BI Mobile for accessibility, ensuring seamless data analysis and collaboration.



Power BI architecture is a service powered by Azure, capable of connecting to various data sources. Power BI Desktop, users can create reports and visualizations based on the dataset. Power BI Gateway facilitates continuous data access from on-premises sources for reporting and analytics.

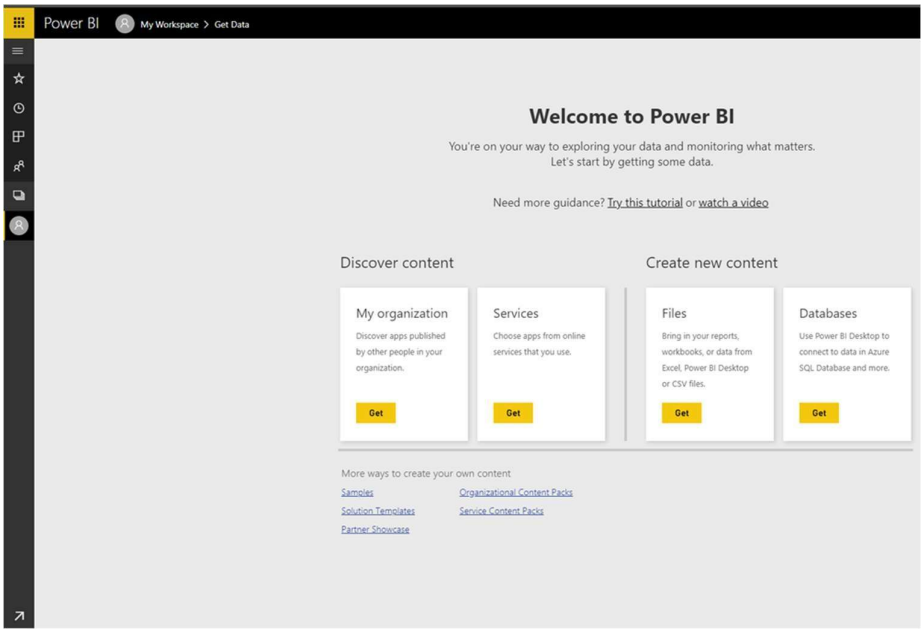


2.2 Power BI Architecture Design:

Power BI architectures is a service built on top of Azure. There are multiple data sources that Power BI can connect to. Power BI Desktop allows you to create reports and data visualizations on the dataset. Power BI gateway is connected to on-premises data sources to get continuous data for reporting and analytics. Power BI services refer to the cloud services that are used to publish Power BI reports and data visualizations. Using Power BI mobile apps, you can stay connected to their data from anywhere. Power BI apps are available for Windows, iOS, and Android platforms.

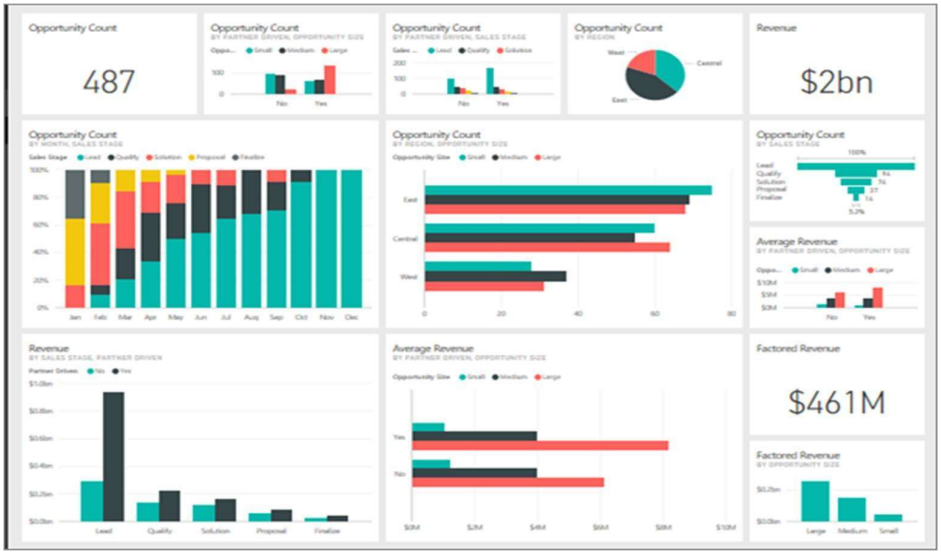
2.3 Power BI Service

Power BI Service is a Software as a Service (SAAS) also known as Power BI online. It allows you to connect data, create reports and dashboards, and ask questions about your data. Once we log in, the page looks like:



2.4 Power BI Dashboard:

Power BI Dashboard is a single page visualization to tell a story. The visualizations on a dashboard are generated from reports, and each report is based on one dataset.



3. Deployment Description

In Power BI, we can directly publish the report online to our workstation. If we do not have the work email, then we can save the file in '.pbix' version. This helps another viewer see our work and understand the story or insights we are communicating.