



Zero ETL tool for power BI

S. Mohan¹, Dr.T. Kalaikumaran², Mrs. V. Radha³

Professors of Computer Science and Engineering Department,

VSB College of Engineering Technical Campus, (An Autonomous Institution), Ealur Pirivu,
Solavampalayam PO, Kinathukadavu, Coimbatore, Tamailnadu, India.

Abstract

This paper discusses about no need for traditional ETL tool for power bi . But this essential for data lake and data warehouse and big data also. Which is all are do the same process but different characters are behaviour. Because is most important not only bi tool bigdata cloud storage all are used either ETL or ELT. These are all traditional tool for expect from the data transfer load and consistent storage. This is used for agility or AdHoc process are doing whether accessing data. In cloud using ELT process in BI using ETL process. These are all two different processes are doing. But it is traditional process now a day integrating the data weather data lake and data warehouse altogether in bigdata.so we will not use the traditional ETL tool in BI for future integrating the data in repository so this is called zero ETL tool for BI also told self-service tool in BI.

KEY WORDS: ETL, ELT, AGILITY, AdHOC.

INTRODUCTION

Power bi to extract transfer and load in consistency repository. which called traditional tool for power BI we will use data integrating with BI platforms. Except ETL or ELT. It won't to be future data storage in the BI platforms. It will use as adHoc format or cloud format which mainly avoid the traditional ETL or ELT for the storage of data lake and data warehouse and big data. Which help of BI platforms data integrator and aggregator. ETL means used to extract transfer and in the repository in device. But ELT extract load and transfer to the data lake or with the transfer of the cloud. That is view followed by adHoc then come to the agility of the data. this is also called self-services tool in BI in future without traditional to ETL tool for BI platforms for data aggregation.

Important for power BI either ETL or ELT.

Both ETL and ELT are crucial for business intelligence. But ELT is generally more important for modern BI. Because it is leveraging the speed and scalability of cloud data warehouse to grouping volume of diverse data type enabling faster near real -time analysis. ETL remains important for legacy system smaller project on premises for infrastructure and strict computer need when the data transformation before loading is necessary.

The best choice depends on your organization data infrastructure and strategic needs.

In modern BI ELT

Scalability

Immense Processing power of cloud data warehouse to handle large volume of data more efficiency then traditional method.

Speed

Raw data is loaded directly in to the data warehouse and transformation occurs in parallel allowing for faster initial data injection and need near real- time insight.

Cost effectiveness

Bhai never using the data was processing capability ELT can be more cost effective then a recognize then investing separate ETL server .

Flexibility

It's about wider ring of data type including unstructured and semi structure data which common in today data rich environment.

In modern BI.ETL

Legacy system

ETL better suitable for old system or environment that are not cloud based or lack advanced processing power.

Data governance

ETL transformation data before it ender system which can be critical for information with straighten data security in compliance requirements.

Pre-defined reporting.

For Predictable structure reporting when all data transformation can be defined EPL is more controlled approaches in offer sufficient.

Structure data

ETL Indeed for transforming structure data in to another structure format making it suitable for simpler table based data set.

Choose ELT

For cloud-based platform bigdata unstructured data and when speed and scalability and priority.

Choose ETL

For on-premises environment legacy system data security need and smaller more predictive project.

Power BI means.

Power BI is micro soft business intelligent platforms that help user analysis and visualization data to gain actionable insight even without specialized data knowledge.it is a collection of software server, apps, connector to allow you to connect the various data sources transform the data and then create interaction report and dashboard to share across an organization.

Key component of power BI.

Desktop.

After windows application for creating detailed report and data model by connecting to the multiple data sources.

Power BI service

A cloud-based services that allow you to publish share and collaborate on report and dashboard.

Power BI mobile

Mobile app for iOS and Android devices allowing user to access and indirect with report and data on to the go Power query

Data connectors

Melting tool to various data sources including Excel spreadsheet, cloud services and on premises data sets. A data Preparation tool to use to clean, transfer and shape data from different sources into a usable format for analysis.

Power pivot

Data modeling tool that helps to create relationship between different table of the data to build a comprehensive data model.

DAX. Data analysis expressions.

A formula language is used to create certain calculations mention and business logic with in power BI model.

Power BI Does

Connect to the data used can pull the data from numerous sources to create unified view of information.

Transfer data

Data can be cleaned shape and structure for analysis ensuring it's revolved and coherence.

Visualize data

User Can create compiling and structure for analysis instructions dashboard and report with client and group to tell data stories.

Share insight

Report and dashboard can be organize fostering collaboration and provide a real time view of business performance.

BI Users

Business analysis

To identify the trend and track performance uncovered with hidden pattern in the data.

Business users

To monitor key motion, get instead alert on data anomalous and make better improved decision without needing technical data exploration.

Developer

To indeed analytical capabilities directly in to customs application for the own customer.

Self-service vs zero ETL power tool

Self-service and ETL are complementary concept the describe a user empowering approach to data

analysis describe method of data integration. Power BI can be used in a self-service contexts by business user and support both traditional ETL(through it is power query feature) and zero ETL approaches by integrating directly. Zero ETL aim to reduce the complexity and time associated with data transform making it faster and more efficient for user who need quick insight.

Self-service BI

Allow business user to access analysis and data without significant IT involvement. Power BI is a platform that enables self-service BI by providing institution tool for data exploration report created and sharing insight directly to the business user.

Zero ETL

User to data integration approach that moving or eliminate the need for traditional ETL pipeline, leverage direct connect and query capabilities instead of moving and transforming data through the dedicated ETL process. A zero ETL approach all are process BI to directly

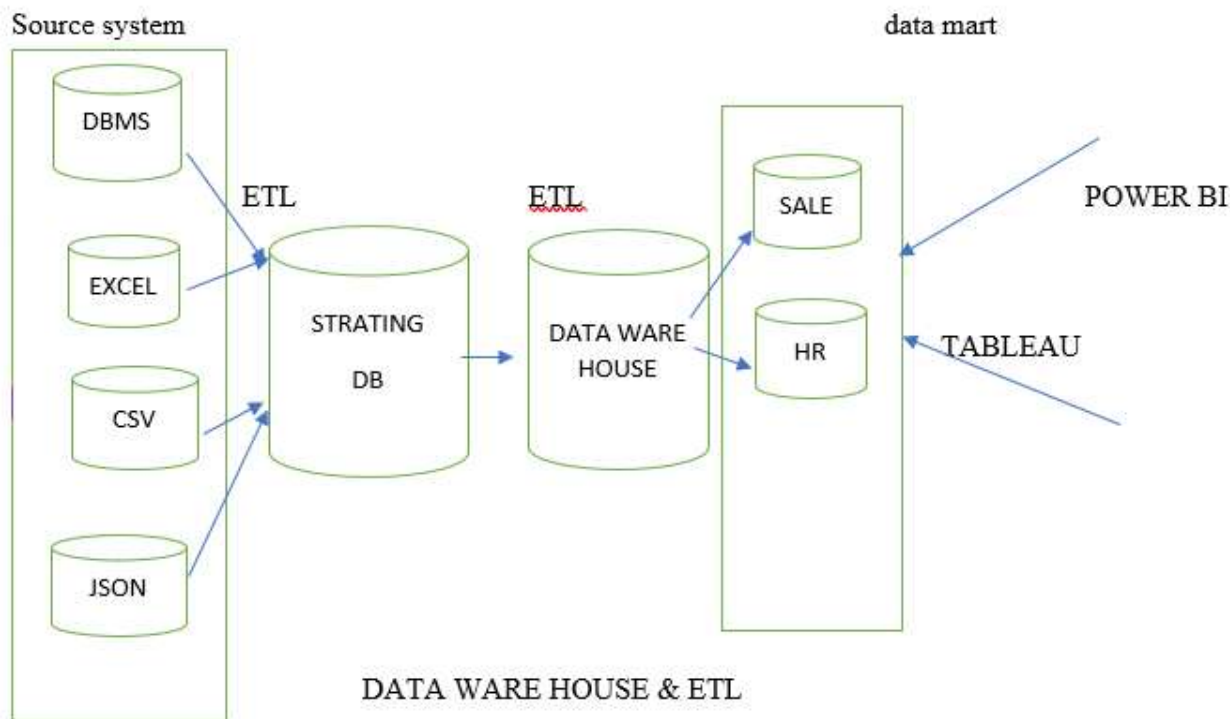
Query and analysis data from various sources.

Zero ETL means ELT

Zero ETL means data integration strategy that minimize or eliminate the need for traditional complex ETL pipeline by enabling directly query of data from sources system without moving or transforming it in advance. Which not equal to ELT when data is located and then transformed. Zero ETL take it further by aiming to perform transfer on-the-fly or even allow for direct query across data silos providing the further real-time analysis without over head of manual data pipeline.

Zero ETL tool and platforms

- Cloud platform
- Data lake house
- Data connectivity provider
- Open source platforms



Conclusion

For BI (business intelligence) zero ETL is generally better because it is provided real time data access reduce the complexity and cost and increase the agility enabling quicker, data driven decision. In traditional ETL is better for scenario requiring external complex data transform before loading large source batch operation in when data quality issues are control and need through upfront handling. Power BI using and ETL tool is essential for creating accurate consistent and timely data for analysis by exacting transferring and loading the data of various sources in the central model for decision making. Streamline data preparation automated and enhanced accuracy providing robust federation for data driven strategy and growing comparative edge process and loaded reporting ages provide a robot dressing strategy and growing competitive edge. ETL proven is pre-cursor to power BI. Analytical and visualization capabilities ensuring that insight derived based a sound, connecting and fast worthy data. There is not a single zero ETL tool for power BI. It approaches and technology that enable direct real- time data integration from service system like power BI. Zero ETL capabilities include AWS (with integration like Amazon redshift) data bricks (lake floor connector) and vendor such as CDATA and a byte the benefit of these approaches for power BI user further time to insight, enhanced data quality, reduced cost and creating agility and adapting new data sources.

REFERENCES:

- 1.Louis T. Becker, 29 Jul 2019. *Microsoft Power BI: Extending Excel to Manipulate, Analyze, and Visualize Diverse Data*. p. 188.
- 2.Bhargava, M.G., Kiran, K.T.P.S. and Rao, D.R., 2018. Analysis and design of visualization of educational institution database using power bi tool. *Global Journal of Computer Science and Technology*.
- 3.Becker, L.T. and Gould, E.M., 2019. Microsoft power BI: extending excel to manipulate, analyze, and visualize diverse data. *Serials Review*, 45 (3), pp. 184–188.
- 4 iya, G. Singh, J. Singh and P. K. Singh, “Preliminary Analysis of Data Visualization based Uber Technology using R: A Review,” *2022 International Conference on Augmented Intelligence and Sustainable Systems (ICAISS)*, Trichy, India, 2022, pp. 721 - 725, doi: 10.1109/ICAISS55157.2022.10010574.
- 5..J. Singh, G. Singh and A. Verma, “The Anatomy of Big Data: Concepts, Principles and Challenges,” *2022 8th International Conference on Advanced Computing and Communication Systems (ICACCS)*, 2022, pp. 986–990, doi: 10.1109/ICACCS54159.2022.978
- 6.D. Toppenberg-Pejcic, J. Noyes, T. Allen, N. Alexander, M. Vander-ford and G. Gamhewage, “Emergency Risk Communication: Lessons Learned from a Rapid Review of Recent Gray Literature on Ebola, Zika, and Yellow Fever,” *Health Communication*, vol. 34, no. 4, pp. 437–455, 2018.
- 7.Singh, J., Bajaj, R., & Kumar, A. (2021, October). Scaling Down Power Utilization with Optimal Virtual Machine Placement Scheme for Cloud Data Center Resources: A Performance Evaluation. In *2021 2nd Global Conference for Advancement in Technology (GCAT)* (pp. 1–6). IEEE.
- 8.Pandey, P., *n.d.* *Data Visualization with power Bi*. [Online] Available at: <https://www.datacamp.com/community/tutorials/data-visualisationpowerbi> [Accessed 1 8 april 2019].
- 9.Dcruz, J., *n.d.* *How to visualize data using Power BI..* [On-line] Available at: <https://towardsdatascience.com/how-to-visualize-data-using-power-bivec1413e976e> [Accessed 2 august 2020].
- 10.Sparkman, M., Saxton, A., Blythe, M., Hamilton, B., Clem, E., Duncan, O., & Ghanayem, M. (2018, November 19). *What is Power BI Re-port Server?* [web page]. Retrieved from <https://docs.microsoft.com/en-us/power-bi/report-server/get-started> [Google Scholar].
- 11.Michael Hart, 2017, “*Quick Insights with Power BI*”, Accessed online at <https://powerbi.microsoft.com/en-us/documentation/powerbi-service-auto-insights/>