Data warehouse infrastructure development

Elevator components manufacturer

- Performed a comprehensive evaluation of the database infrastructure, focusing on CPU, memory, and I/O utilization
- Analyzed 160+ stored procedures and optimized long-running queries
- Implemented robust monitoring & alerting systems enabling proactive detection and resolution of performance issues

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Elevator components manufacturer needs to “boost” the data warehouse performance

Picture this…

You’re looking to improve the health and performance of their data warehouse, enhancing their capability to swiftly and effectively leverage data for decision-making and operational efficiency. Currently, there is major performance issues within data warehouse environment including bottlenecks in ETL processes, slower query response times, and general inefficiencies because of increasing volume and complexity of data from multiple sources.

You turn to Accordion.

We partner with your team to conduct infrastructure assessment, data processing and query and monitoring and alerting systems, including:

1) Performing a comprehensive evaluation of the database infrastructure, focusing on CPU, memory, and I/O utilization. Enhancing disk and file configurations to boost I/O throughput and minimize contention
2) Analyzing 160+ stored procedures and optimize long-running queries, converted BLOB data types to standard types, and applied techniques like index creation on high traffic tables with >1M records and stored procedure retirement to enhance performance
3) Implementing robust monitoring and alerting systems to ensure database health, data integrity, and security, enabling proactive detection and resolution of performance issues

Your value is enhanced.

- You have cleansed, validated, and consistent data across various entities of the company in a centralized location, which eased access to perform multiple analyses (including recent acquisitions previously not reported) on a real-time basis
- You have a simplified unstructured data from multiple sources, homogenized data fields across tables, and a robust data dictionary built to help you leverage the data warehouse and easily perform any ad-hoc analytics

DATA WAREHOUSE INFRASTRUCTURE DEVELOPMENT

KEY RESULT

- Reduced ETL runtime by 22%
- Reduced database size by 150 GB

VALUE LEVERS PULLED

- DW diagnostic
- Query optimization
- Monitoring and alerts

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Data Warehouse Infrastructure for an Elevator Components Manufacturer

Data Warehouse Infrastructure Development

Situation

- Clients group consists of eight different entities spread across the US, Canada, and Europe. There was a need to streamline the BI reporting infrastructure in order to facilitate tracking of performance across different entities via a single source of truth
- Partnered with the client to set up an on-premises enterprise data warehouse and develop automated Tableau dashboards to analyze their sales, orders, and operational data. The new infrastructure enabled a seamless inclusion of data from new entities to the reporting suite

Accordion Value Add

- Analyzed the data on sales, orders, and estimates (Oracle, SQL Server, MySQL), content management data (Docuware), CPQ data (Tacton) and enterprise survey data (Survey Monkey) to identify the relevant KPIs based on the business requirements
- Built an on-premises data warehouse (based on Microsoft SQL Server) connecting different data sources through data pipelines, transforming raw data to generate the KPIs identified
- Created a tabular data model on SQL Server to create ready-to-serve data marts for analytical and reporting purposes
- Developed automated Tableau dashboards that feed off the data warehouse, providing business stakeholders with real-time access to data and analyses
- Incorporated automated data validation and reconciliation rules across the entire ETL process to ensure accuracy and consistency of data leveraged for reporting

Impact

- Enterprise data warehouse implementation enabled the availability of cleansed, validated, and consistent data across various entities of the company in a centralized location, which eased access to perform multiple analyses (including recent acquisitions previously not reported) on a real-time basis
- Enhanced reporting process enabled reliable performance reporting of existing and new entities with consistent, accurate, and current information
- Simplified unstructured data from multiple sources, homogenized data fields across tables, and built a robust data dictionary to help the business users leverage the data warehouse to easily perform any ad-hoc analytics

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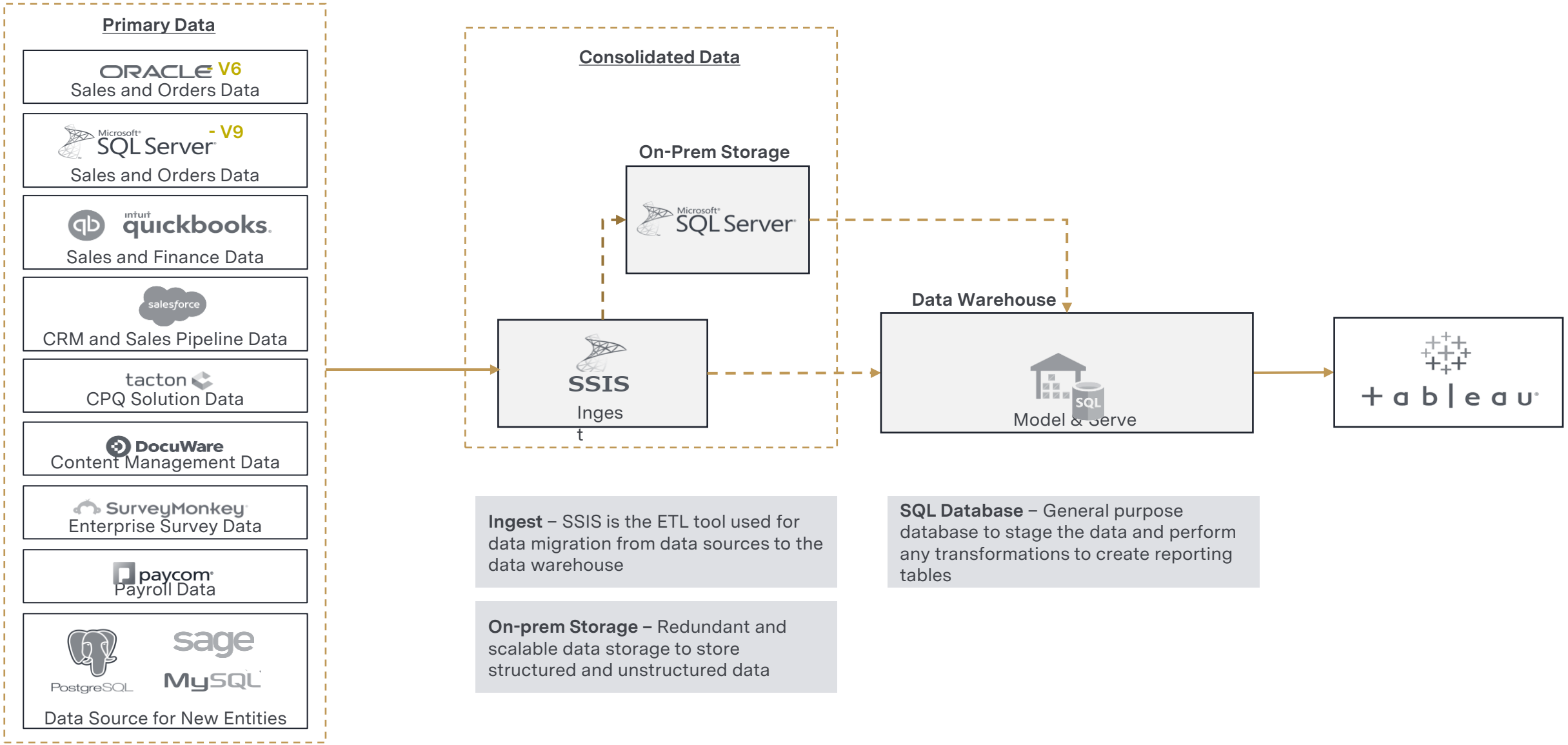
Implemented BI infrastructure



Ingest – SSIS is the ETL tool used for data migration from data sources to the data warehouse

On-prem Storage – Redundant and scalable data storage to store structured and unstructured data

SQL Database – General purpose database to stage the data and perform any transformations to create reporting tables

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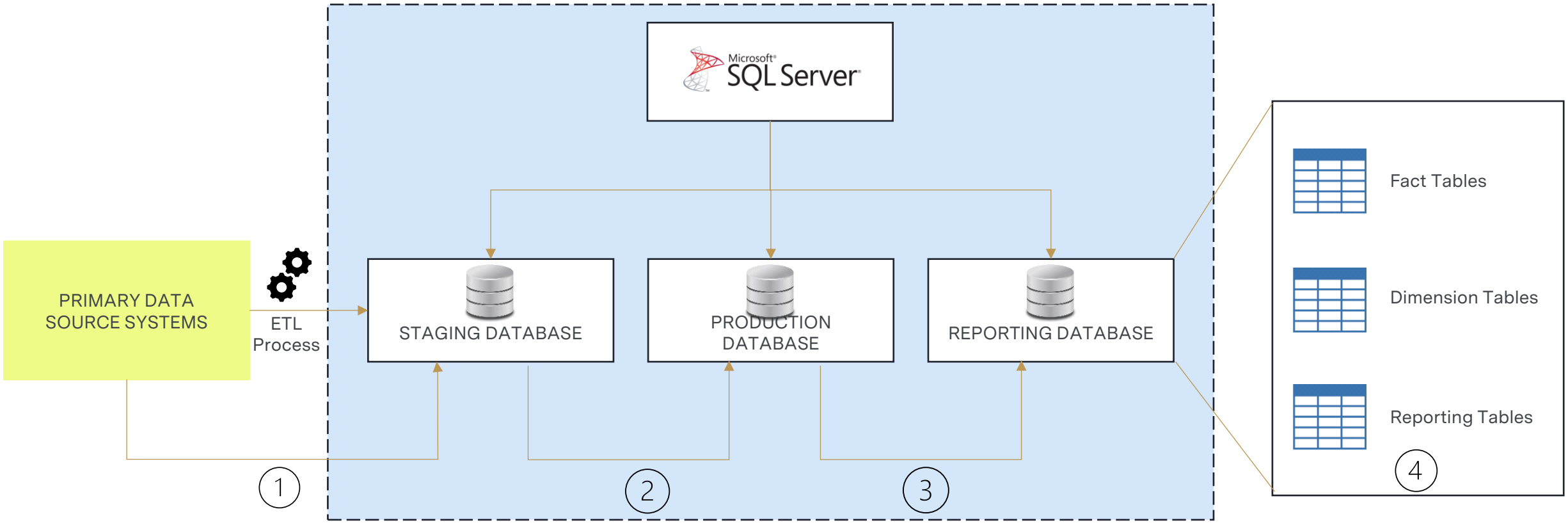
Approach for data validation and reconciliation



1. Captured data from the source systems as is, into the staging database using SSIS packages, API connections, and Python jobs

2. Assigned appropriate data types and appended the data into a production database

3. Trimmed the data to five years, cleansed the data for inconsistencies, removed duplicates, renamed columns to business intuitive names, and consolidated data across entities

4. Created reporting tables for multiple business areas using fact and dimension tables, used for building analyses or reports in Tableau

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