Case Study
Healthcare Business

SQLMax

No interruption on a data warehouse of 1025 hospitals

Service Type: SQL Consultation | Data Type Change

Duration: 12 Days

Summary

Regarding the huge number of rows, the size of ID field must have increased quickly. Partitioning, concurrent SSIS package execution and partition switch in and out technics are applied.

Requirements

1025 hospitals had a central data warehouse to store data of all transactions on critical drugs.

Because some drugs can be taken out of the hospitals for

illegal purposes, to track drug information is so important. According to FDA rules, to have critical drug usage reports is a must.

Drug usage data was exported from hospitals pharmacy to a central data warehouse. In the data warehouse, on the drug table, for any transaction on drugs a row existed.

The number of rows on the table was more 4 billion rows and it's was seriously required to increase the size of ID field on the table from INTEGER to BIGINTEGER.

Since other tables referred to the ID field, there was no way other than creating all of those tables including the drug table and copy data over.

The only time frame can be dedicated to the process was from Fridays at 7 pm to the following Monday at 7 am (60 hours)

Situations

+4 billion rows in the drug table from one side and the short existing time frame from the other side put us on in a situation.

Approaches

- During a weekend, made the drug table partitioned based on Hospital ID
- Provided a complicated SSIS package to switch out partitions from the source to an stage table and switch it in from the stage table to the destination
- A control table was created to monitor and control the whole process

Test Environment

On the test environment, the SSIS package was executed and after some try-error and tuning, we were confident that it will go properly on production.

Production

Within the next timeframe, on production we ran the SSIS package through 20 SQL jobs concurrently. The 1025 partitions are divided among the SQL jobs and the whole task was finished in just 28 hours. During the transfer, monitoring the process was

very sensitive yet exciting!

Results

- Data type increased within a short time frame
- Drug reports were quicker due to table partitioning

Benefits

- No interruption on data warehouse operations
- FDA drug rules are followed w/o concern
- ~25% save on drug reports creation time

Database Manager

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