



Growing Our Community

Optimizing Your Data Warehouse for OLAP Processing

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Konstantin Melamud

SQL Server Architecture & BI Manager

- Pittsburgh, PA
- Experience working with over 400 customers
- Helps customers find solutions within their SQL Server environments
- Solutions range from production support to full development support

Works at RDX (Remote DBA Experts)

- Founded in 1994
- Specializes in remote database administration, operating system, and enterprise application services



@kmelamud

What You Should Already Know

Well...you should have a cube...

Working knowledge of T-SQL and OLAP

Main Problems...

- As our data set grows, time required to process the DW increases past the allowed downtime window
- Adding HW resources is not an option
- Changes must minimally impact other processes running against DW...ETL and so on...
- Production DBAs will not like you...

Objectives

- What is our goal? Minimal downtime window...
- Some best practices consideration for OLAP
- Use of enterprise features to increase performance
- Incremental processing

Some Best Practices

- Use surrogate keys
- Parallel thread adjustment
- Avoid implicit conversions
- Physical and logical model alignment
- Hekaton- in-memory object options
- Minimize extensive calculations as part of the cube build and processing

Demo – Logical Model Misalignment

Enterprise Features to the Rescue

- Compression Settings
- Partitioning
 - Logical Model Partitioning
 - Partition alignment to physical DW
- Process add functionality

Compression Considerations

Fact Table Compression

- Page vs. Row

Dim Table Compression

- Page vs. Row

Guarantee to increase performance by at least 70%

Demo - Compression

Partitioning- Logical Model

Pretty easy to do, can be done in number of ways

- From VS solution, requires deployment
- From OLAP, either through GUI or XMLA, requires reprocess

Things to Watch for

- Proper indexing structures to support logical partitions
- Changes to indexes may affect other critical processes
- Implicit conversions

Demo – Partitioning Part 1

Partitioning- Physical Alignment

- More complex than logical partitioning to implement
- Removes the need for additional indexes to support logical partitioning
- If existing indexes were modified, removes the risk of partitioning affecting other critical processes on the server
- Can take advantage of multiple storage location for IO separation

Demo – Partitioning Part 2

Incremental Processing

- Process add functionality
- Can be done through XMLA query
- Must know your data to see if it would work for your environment
- Still recommended to do full process within a certain period

Take Away

- Configure your topology to best suit your business needs
- Best practices features
- Physical to logical model alignment