

**Does your organization need to process data about customers and markets quickly and frequently to respond to new and challenging business conditions? Is the amount of data generated causing bottlenecks? Have your business and end-users been demanding more information out of your Data Warehouse than you can currently support? If you answer “yes” to any of these questions, then Xtiva’s performance audit is the right solution for you.**

**The Business Intelligence & Data Warehousing Performance Audit is a carefully crafted program designed to review the effectiveness and efficiency of your data warehouse. The efficiency of the system is determined by analyzing how effectively the underlying products are being utilized. For example, the audit may reveal the following problems:**

- That performance bottlenecks could be caused by the sheer volume of the data.
- Inefficient use of ETL product suites.
- Poor architecture for your reporting and analytical applications.
- Lack of advanced solutions such as predictive or descriptive data mining.
- Lack of analytical applications utilizing multi-dimensional structures.

## Ideal System Performance

If the performance of your data warehouse and BI subsystems is an issue, then it's time to tune the system to reduce elapsed data-processing time without making major changes to the system itself. The components addressed in this audit are:

- Improving data warehouse performance
- Improving query response time with data aggregates
- Faster database and data warehouse loading
- Speeding up Business intelligence applications.
- Reducing time to analyze
- Hardware utilization and optimization
- OS and storage system configuration

Analysis of each of the above areas is critical to improving the performance of the data warehouse and application subsystems.

### What We Do

Assess the performance, stability and availability of your critical data warehouse and business intelligence systems

### What You Get

Documented recommendations relating to performance, stability and availability of your data warehouse system and also, if desired, the Xtiva expertise to apply them

### What You Save

Time, money and headaches

### What You Achieve

Increased performance, Maximized availability, boosted productivity and peace of mind

## XTIVIA

Xtiva's team of Data Warehouse specialists have helped clients of all sizes that were faced with finding qualified resources in the areas of data warehouse administration, management, performance tuning, development and maintenance services. Xtiva, an industry leader, has been successfully providing data warehouse consulting services to clients of all sizes for several years, both domestically and abroad.

## Hardware Resources:

**Databases:** The database servers rely primarily on three hardware subsystems for efficient performance - CPU, Memory, and I/O.

A well-architected system will show optimal CPU utilization without queues. A fully utilized CPU is ideal, but an additional check for the number of processes waiting for the CPU is required.

The I/O subsystem of the database server is critical to the performance of the database and applications. Ideally, the disks in the system will be responding to requests in less than 50 milliseconds and there will be no queues forming on those disks. Additionally, for large decision support queries, the controllers will be analyzed for bottlenecks and limitations.

If RAID is being used on-site, this will be analyzed for its effect on the database and applications. I/O configuration is the most flexible of the resources, since the database and system administrators can easily work together to balance the I/O load across all available resources.

A large server may contain several gigabytes of main memory. The use of that memory has to be carefully allocated among the critical functions of the server – applications, database, and operating system. The goal is to have ample free memory to meet the peak demands of the workload while maintaining good cache hit rates in the database and avoiding process swapping.

## Improving Data Warehouse Performance:

Data warehouse tuning begins by monitoring the activity and data that move through the data warehouse. Following are some of the items that Xtivia's experts would look at to assess performance improvements:

- Addition and tuning of indexes.
- Creation of data marts tailored to business needs.
- Data summarization.
- Removal of extraneous data stored in the data warehouse.
- Data partitioning.
- Application of Delta processing techniques.

## Improving Query Response Time:

Faster performance means the data needed for analysis is available to act upon quickly. Time is of the essence for business users who need answers "right now."

Performance tuning of queries is important. Some of the key aspects to look at are:

- Indexing on appropriate columns.
- Key column constraints.
- Utilization of database views.
- Horizontal and vertical data partitioning.
- Optimal design of dimensions and cubes.
- Utilization of data aggregates.
- Efficient table joins.

## Faster Database and Data Warehouse Loading:

When faster and more efficient data loads are important, pre-processing the data is critical. Xtivia experts will utilize some of the following methods to assess and recommend performance improvements:

- Verifying that the format and sequence of the data is in sync with the database.
- Improving the selection process so that it is as efficient as possible.
- Reformatting data to better suit the load process.
- Summarizing data for smaller volumes.
- Grouping and pre-sorting data for faster, more efficient loads.

## Speeding up Business Intelligence Applications:

Making the right decisions in a short amount of time is critical to most organizations. Application tuning is as critical a part of overall performance as database tuning is. Following are some of the keys to improving performance:

- Reorganization of data.
- Output record numbering.
- Pattern-matching field extraction.
- Efficient use of joins and mergers.



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# XTIVIA

For more information on how Xtivia can help your organization better manage its IT services, please contact an office near you or visit our web site at [www.Xtivia.com](http://www.Xtivia.com).

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