

Accelerated Business Analytics

Maximize the Business Value from your Investment

The **IBM PureData System for Analytics powered by Netezza technology (Netezza)** is a best-in-class platform for performing advanced analytics, but for maximum business value from your investment, some best practices will optimize its performance.



Simple



Smart



Fast



Secure

WHAT ARE YOUR ORGANIZATION'S NEEDS?

Have you invested in a new Netezza appliance and want to ensure you get things right from the start? Or have you been up and running for years, with minimal maintenance needs, but want to perform a health check to ensure continued optimum performance? Or perhaps due to Netezza's minimal administrative requirements, you wonder if it's efficient to train internal staff for part-time specialized administration?

Leveraging Technology's staff has a decade of experience with setup, running and tuning Netezza platforms for optimal performance and maximum business value. Below are some best practices that can be tailored to your needs, whether a new or existing Netezza user:

New to Netezza:	Running Existing Netezza:
<ul style="list-style-type: none"> Enterprise Analytics Workload Analysis Roadmap Development Setup and Data Migration Load Methodology Integration with Other Analytic Environments Embed Algorithms for Accelerated Analytics 	<ul style="list-style-type: none"> Health Check Workload Analysis Query Performance Tuning Replication Capacity Planning Managed Services

BEST PRACTICES TO OPTIMIZE PERFORMANCE:

GET IT UP AND RUNNING

Simplicity and speed are two of the top reasons for investing in a Netezza appliance, along with capabilities and security. Compared to other data warehouse solutions, getting up and running is relatively simple, but still requires careful planning. To get up and running quickly, we help organizations transfer existing data models, re-direct ETL jobs, and change connections for reporting tools, to realize a 10x-100x performance gain out of the gate. Things to consider:

- Data Migration: Moving data off the existing (Oracle, SQL Server, etc.) onto the new Netezza appliance.
- Data Flow Integration: Performing transformations using the massively parallel Netezza architecture, to minimize file transfers, read and writes.

- Replication: Making it efficient, stageless, with single-read multi-write abilities.
- Integration Points: SAS, SPSS, Hadoop, Cognos, Tableau, RDBMS, OleDb, ODBC, JDBC clients.

Once you're up and running with Netezza, how do you maximize the business value from that investment? Netezza's unique architecture requires unique programming skills – compared to traditional RDBMS or other DW appliance. Additional benefits can be gained by applying tailored best practices for each organization's usage.

LOAD METHODOLOGY

To minimize load windows and move closer to a real-time data warehouse, we recommend thinking beyond traditional ETL (extract-**transform**-load) methodology. Put the performance capabilities of Netezza to work on data transformation, and shift to an ELT (extract-load-**transform**) methodology. This can be done in multiple ways, depending on your goals. For example:

- To get up and running quickly, use existing ETL tools to do initial loads, convert the slowest running or highest priority jobs to an ELT pattern, implement new data loads via ELT, and eventually phase out the need for expensive ETL tools.
- To reduce load windows drastically out of the gate, we can explain alternatives and tradeoffs, train your staff in the ELT methodology.

DATA REPLICATION

In most data warehouse environments, data needs to move within and between environments, such as:

- Replication of production data to a test environment
- Replication of core data, such as customer or product, to multiple data marts.

We recommend implementing a replication utility that makes optimal use of the Netezza architecture: a utility that is efficient, stageless, with single-read multi-write abilities, thus reducing the window for replication.

WORKLOAD ANALYSIS

Structuring workload may be one of the greatest challenges for organizations. There are two workloads to consider: the enterprise analytics workload and the portion that is running on Netezza. Because it excels at performing analytics, taking vast quantities of data out of Netezza and moving it into SAS, SPSS, Excel, or other tools to perform analytics detracts from the value of your Netezza investment.

We can help identify analytic workloads that are best suited for Netezza, and those suited for other technologies, considering these practices:

- Analyze and monitor workloads applied to Netezza on a periodic basis to ensure optimal performance.
- Since Netezza performance is higher than users experience with other platforms, it can hide inefficiencies that could be further optimized for even more speed and performance.

For example, Leveraging Technology developed a workload analysis utility that we use within our Managed Services Program to monitor on-going workload performance, identify outliers, and take corrective action.

QUERY PERFORMANCE TUNING

A typical query run on a Netezza platform will out-perform that same query run on other platforms by 10x-100x. However, poorly written queries still under-perform optimally written ones. This is particularly true for more complex queries. Best practices for other environments do not directly translate to Netezza's massively parallel processing (MPP) architecture. To take full advantage of running complex queries, transformations and analytics --Netezza's sweet spot -- users must utilize machine-level user defined functions (UDX) such as:

- Convert complex SQL transformations/calculations into MPP-aware UDX code
- Apply custom algorithms such as risk scoring formulas
- Utilize SQL Extension and Netezza In-Database Analytics (INZA)Tools
- Implement efficient distribution keys, materialized views and other Netezza-specific optimizations.

ADMINISTRATION

Although Netezza requires less hands-on administration than other data warehouses, skilled, specialized administration is critical. Netezza's architecture handles workloads differently than other popular DW technologies. While the average organization only needs ½ FTE to administer Netezza, specialized training and experience is needed to perform proper administration. Leveraging Technology offers multiple administrative Managed Services for Netezza options, including:

Administration Support Types:	Administration Tasks Performed:
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Dedicated staff augmentation <input checked="" type="checkbox"/> Training internal staff <input checked="" type="checkbox"/> On-going workload analysis monitoring <input checked="" type="checkbox"/> Periodic health checks <input checked="" type="checkbox"/> 24/7 on-call support. <input checked="" type="checkbox"/> IBM – Client Interface 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Grooming <input checked="" type="checkbox"/> Reclaiming <input checked="" type="checkbox"/> Backups <input checked="" type="checkbox"/> Replication <input checked="" type="checkbox"/> Permissions <input checked="" type="checkbox"/> Patching/Updates

SUPPORT AVAILABLE FROM LEVERAGING TECHNOLOGY

Whether your organization is new to Netezza or has been using it longer, there are support services such as a health check to help you determine if the appliance is running optimally for your needs and environment.

Leveraging Technology's staff has a decade of experience with setup, running and tuning Netezza platforms for optimal performance and maximum business value. Do you need support in any of these areas? Give us a call.

Accelerated Business Analytics Services:	
<u>If You Are New to Netezza:</u> <ul style="list-style-type: none"> • Enterprise Analytics Workload Analysis • Roadmap Development (Plan Initiatives) • Getting Up and Running – (Migration) • Load Methodology – (Transform from ETL to ELT) • Analytic Integration – Develop Customized Best Practices for Your Analytic Environment (SAS, SPSS, etc.) • Accelerated Analytics – Embedding Your Algorithms 	<u>Running Existing Netezza:</u> <ul style="list-style-type: none"> • Health Check • Workload Analysis • Query Performance Tuning • Replication • Capacity Planning - prediction and optimization • Administration (Managed) Services

CONTACT

For more information contact Info@Leveraging.com or call 585.454.4250 x100.

ABOUT LEVERAGING TECHNOLOGY

We help customers maximize the business value from their investments in information technology. We are accomplished middleware integrators and architects, founded in 1998, with over 130 certifications. We couple our enterprise and information architecture expertise with a deep understanding of complex systems environments to improve agility, flexibility and time to market with practical solutions.