

# The Netezza Data Warehouse Appliance



# The power to make better-informed decisions

Netezza Corporation has been positioned by Gartner, Inc. in the Leaders' quadrant in the 2008 Data Warehouse Database Management Systems Magic Quadrant report released on December 23, 2008 and authored by Donald Feinberg and Mark A. Beyer.

The Gartner Magic Quadrant evaluates a vendor's ability to execute and completeness of vision. According to the Gartner report, ***"The Leaders' quadrant for data warehouse DBMSs contains those vendors that demonstrate the greatest degree of support for data warehouses of all sizes, with large numbers of concurrent users and management of mixed data warehousing workloads. These vendors lead the market in data warehousing by consistently demonstrating customer satisfaction and strong support, as well as longevity in the data warehouse DBMS market, with strong hardware alliances. Because of this track record, leaders also represent the lowest risk for successful data warehouse implementations. Additionally, the maturity of this market demands that leaders maintain a strong vision regarding the key points emerging during the past year: mixed workload management for end-user service-level satisfaction and data volume management."***

Organizations today need to do more than just collect and analyze large amounts of data. To really compete, they need better, deeper insights into their customer and operational data. In today's information-intensive environment, organizations need to put the power of analytics into the hands of business users across the extended enterprise for informed, timely decision making. With the Netezza Performance Server® family of data warehouse and analytic appliances, companies are gaining real-time insights into data. Now they can understand not only past trends but also make timely decisions and predict future patterns – fundamentally changing the way they leverage information to transform their business.

For example:

- **Orange UK**, the UK's most popular mobile phone service, has reduced data latency from six to eight weeks to one to two days for more effective fraud prevention and cross-carrier billing. Leveraging Netezza's high performance and energy efficiency, Orange was also able to reduce the number of data warehouse cabinets from 26 to nine and its data warehouse is now over 70% more power-efficient.
- **Catalina Marketing**, the global leader in behavior-based marketing solutions, can now routinely perform advanced, predictive analytics on shopping basket data for its retail and CPG customers. For one customer, the faster, deeper, more complex analytics powered by Netezza allowed it to increase the efficacy of the analysis, improving the ROI of the customer's marketing campaign by over 30%.
- **CompuCredit**, a specialty finance company, has seen a significant ROI while realizing hard benefits of approximately \$2M in less than 12 months since launching its portfolio management system on Netezza. The Netezza platform has enabled unprecedented enterprise scalability and increased user adoption, satisfaction and productivity, while delivering over 130x the performance of its previous environment.

For data-intensive organizations worldwide, Netezza data warehouse and analytic appliances deliver breakthrough performance, unmatched ease of deployment and operation and innovative flexibility and scalability at a fraction of the cost of traditional solutions. With the Netezza system, customers including ***Ahold, Amazon.com, Catalina Marketing, CNET Networks, Debenhams, Department of Veterans Affairs, Epsilon, Neiman Marcus, Orange UK, Ross Stores, Inc., Ryder System, Inc., The Carphone Warehouse, The US Army, Virgin Media*** and others now have the ultimate competitive advantage — the power to question everything.

#### GARTNER DISCLAIMER:

The Gartner Magic Quadrant is copyrighted December 23, 2008 by Gartner, Inc., and is reused with permission. The Magic Quadrant is a graphical representation of a marketplace at and for a specific time period. It depicts Gartner's analysis of how certain vendors measure against criteria for that marketplace, as defined by Gartner. Gartner does not endorse any vendor, product or service depicted in the Magic Quadrant, and does not advise technology users to select only those vendors placed in the "Leaders" quadrant. The Magic Quadrant is intended solely as a research tool, and is not meant to be a specific guide to action. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

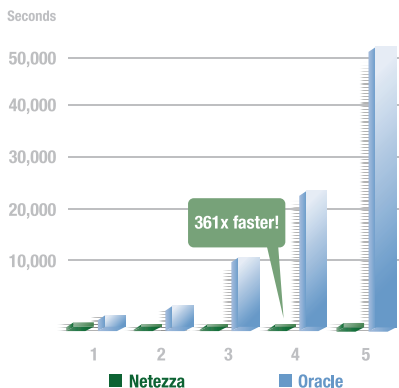


With the Netezza Performance Server appliance, companies have realized orders of magnitude improvement in their query response times, transforming the way they do business.

## Virgin Media

Virgin Media can process CDR analyses on 10 million subscribers 250x faster than before, enabling revenue assurance and increased customer satisfaction.

### CDR Analysis



### CDR Analysis

After undergoing a complex merger, Virgin Media could not meet increasing business demands for more granular data analysis and retention, greater performance and faster delivery of solutions on its very large data volumes. The existing Oracle environment demanded substantial tuning to achieve adequate performance and restricted the company to certain planned queries. Netezza proved its value by processing call detail record (CDR) analyses over 250x faster on average than the current environment, with no tuning. One query was reduced from nearly seven hours to 70 seconds – 361x faster! The NPS system's performance remained just as impressive when the amount of data was increased from 1TB to 10, and concurrent queries provided linear performance scaling. Virgin's existing data marts were successfully migrated from Oracle to Netezza in less than 90 days. Virgin can now effectively analyze CDRs on approximately 10 million subscribers, allowing it to make better offerings and increase customer satisfaction. Netezza is being implemented as the company's standardized EDW and BI platform.



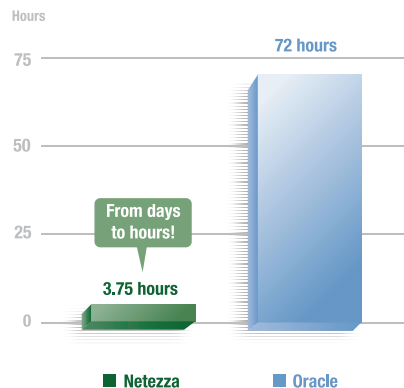
*"It's a huge step forward for our credit services and revenue assurance teams to be able to interrogate customer data in real time."*

Howard Watson  
Chief Technology and Information Officer,  
Virgin Media

## Ahold

Ahold is now running 133% as many analyst reports by nearly 20% more users, increasing productivity while lowering the TCO of its data warehouse.

### Market Basket Analysis



### Market Basket Analysis

Ahold, a division of the world's third-largest food retailer, views its data warehouse as central to the way it manages product availability and ensures the satisfaction of its customers. But Ahold's legacy data warehouse couldn't keep pace with growing data volumes and complexity of analyses. Essential reports took too long to execute, making drill down analysis impractical, and many ad hoc requests impossible to fulfill. A valuable CRM report took three days to run and could only be completed if it was broken up into nine eight-hour fragments that had to be manually administered. With the Netezza system as its Customer Data Warehouse, Ahold is fully leveraging the detailed data it collects to perform faster and more sophisticated market basket analyses to improve customer retention across nearly 650 stores. With the Netezza system, that CRM report can now be run in just four hours. Additionally, Ahold is now running 133% as many analyst reports by nearly 20% more users, has significantly increased overall productivity and has reduced the TCO of its data warehouse.

# The power to process terabytes of detailed information at the speed of thought



*“Improving query performance has increased the quality of output and business decision making. Customer intelligence and senior management teams used to make decisions based on data that was eight weeks old — which they quite rightly identified as pointless! Now they have the same report daily.”*

*Sylvia Sawkins  
Manager of Data Control,  
Orange*

The Netezza Performance Server system is an enterprise-class data warehouse and analytic appliance, designed specifically for high-performance terascale analytics. The Netezza system architecturally integrates relational database, server and storage in one compact power-efficient unit. Netezza's patented streaming architecture has placed processing power at the disk level, so data analysis occurs at the source at streaming speeds — analyses that took hours now take just seconds. This means a dramatic increase in productivity across the enterprise and faster time to value for business initiatives. Netezza appliances are changing the way organizations leverage information, creating a powerful analytic foundation for a new generation of business analytics that improve strategic decision-making and drive results.

## Features

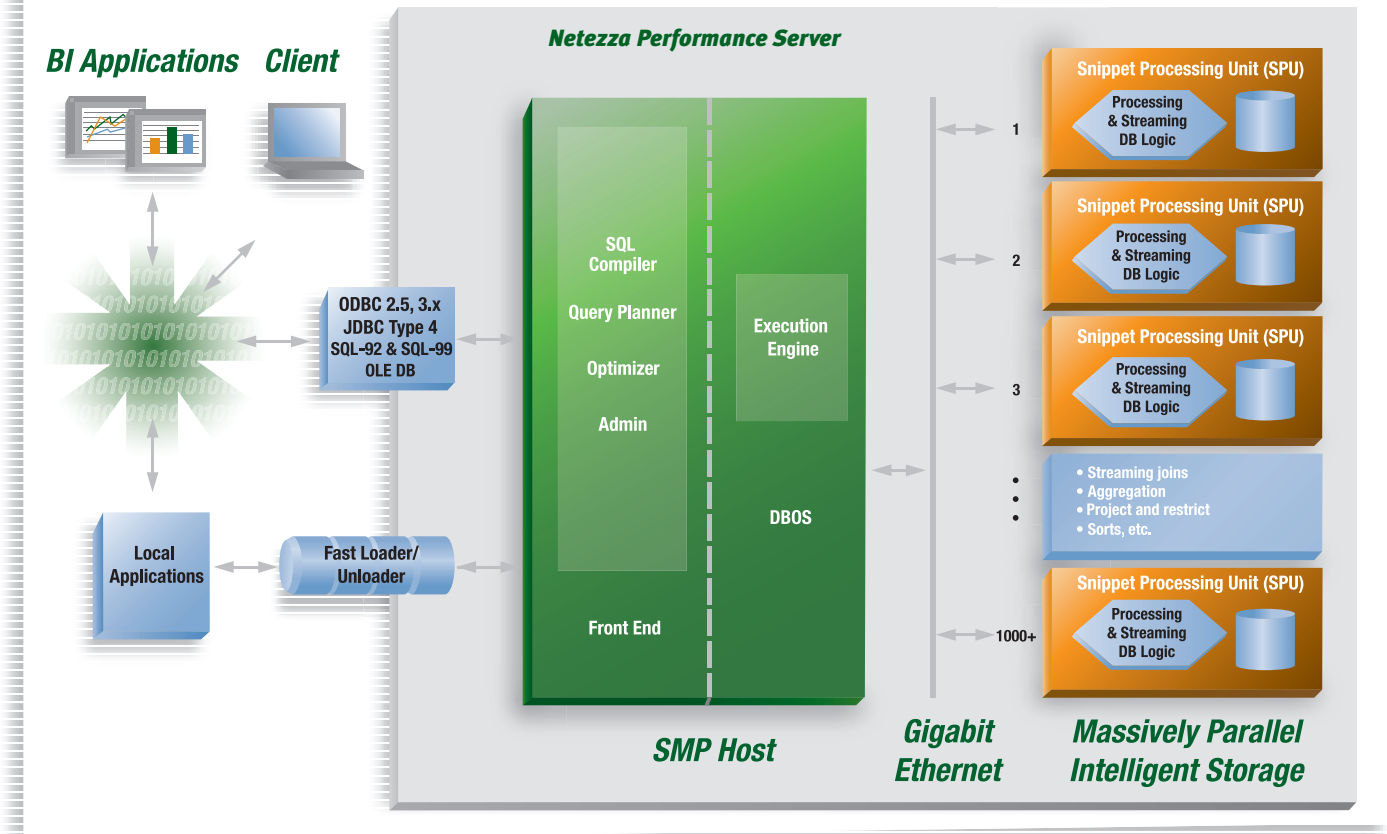
- Terascale data warehouse and analytic appliance — DBMS software, system hardware, high-speed storage
- Asymmetric Massively Parallel Processing™ (AMPP™) architecture — Best combination of SMP and MPP for terascale, complex query processing
- Patented streaming design — Query functions and management implemented in silicon, data streaming at the disk level
- Integrated (appliance) package
- Industry-standard interfaces (SQL, ODBC, JDBC, OLE DB)
- Full compatibility with market-leading BI tools, applications and infrastructure
- Open platform for advanced algorithmic development

## Benefits

- Performance — 10-100x the performance of existing data warehouse solutions
- Iterative, real-time analytics — Ad hoc queries and complex analytics on TB of data
- Affordability — Low acquisition and ongoing administration and maintenance costs
- Manageability/ease-of-use — Appliance packaging and pre-tuning limit systems and database administration needs (less than one DBA for ongoing administration)
- Linear scalability — From less than 1 TB to hundreds of TB of user data
- Flexibility/agility — Easy addition of modular processing units for scalability and reconfiguration
- Low power, cooling & space consumption — High performance in a compact footprint
- Structural reliability — Fully redundant; active data mirroring; fully ACID transaction management



## High-Performance Streaming Architecture: Asymmetric Massively Parallel Processing



# The power to simplify your data center

The Netezza data warehouse appliance is a fully integrated appliance, consisting of a host computer and arrays of hot-swappable mirrored storage, commodity chips and network switches that act as a powerful unit to manage data flows and process queries at the disk level.



## Software Functionality

### **High-performance Analytic Engine** —

Optimizes SQL on the NPS system's massively parallel streaming architecture, with support for "on stream" analytic functions

### **Database Operating System** —

Executes highly efficient SQL through intelligent distribution across host and storage-side processing

**Fast Loading/Unloading** — Allows new data to be added rapidly (up to 1 TB/hour) so that ongoing processing can work with real-time data. Integrates externally with leading ETL and EAI tools. Supports "trickle feed" real-time data loading concurrent with query processing.

**Fast Backup and Restore** — Provides high-speed backup and restore at data rates as high as 4 TB/hour. Shortens backup windows and enables rapid recovery, even for large data warehouses. Interoperable with leading backup products.

**Administration Tools** — Includes DBA and Systems Management tools that provide easy-to-use GUIs & CLIs for permissions, monitoring, diagnostics, trouble-shooting and other administrative functions

## Industry Compatibility

- Supports full ANSI transactions
- ANSI SQL-92 compatibility and SQL-99 analytics extensions
- Support for non-SQL programming
- Support for standard and unstructured data types
- OLE DB, ODBC and JDBC Type 4 API compliant
- AIX, HP-UX, Linux, Solaris and Windows clients
- Integrates with leading BI, ETL and data protection platforms

## Hardware Components

**Host** — The host is a high-performance Linux SMP server that maintains database catalogs, generates optimized query plans, coordinates execution on the SPUs and aggregates the query results generated by the SPUs. Applications and end users access the data stored on SPU disks indirectly, by communicating with the Netezza host. A second host is available for fully redundant, dual-host configurations.

### **Snippet Processing Unit (SPU)** —

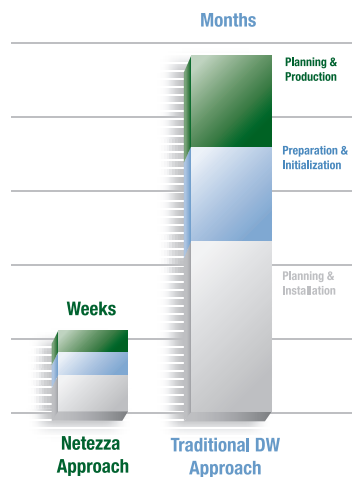
The SPU is a query processing node that consists of a disk drive and a special-purpose computer for accelerating record management and analysis. Information stored in a Netezza system is distributed across many SPUs, so that queries can be processed faster in a Massively Parallel Processing (MPP) environment. The SPU is the smallest replaceable unit of storage and computation.

**Communication Network** — Host-to-SPU and SPU-to-SPU communication is provided by an internal high-bandwidth network of industry-standard gigabit Ethernet switches.

**Storage Pad™** — High-performance EMC CLARiiON disk arrays embedded in the Netezza appliance for data management and business continuity tasks

## Lower Time to Deployment and Cost of Ownership

**Time to Deployment Comparison**



	Other Data Warehouse Systems	Netezza Data Warehouse Appliance
<b>Upfront cost</b>	Several \$M	Less than \$1M
<b>Performance tuning</b>	Required	None
<b>Data modeling</b>	Required	Minimal
<b>DBMS &amp; OS upgrade</b>	Complex — additional cost	None — part of maintenance contract
<b>DBA &amp; admin time</b>	Numerous full-time staff	As little as three hours/week
<b>Server/DBMS/disk integration</b>	Requires multi-vendor integration and optimization	Fully integrated appliance
<b>BI application integration</b>	Some modifications required	No modification required
<b>Data reconstructor</b>	Required	Unnecessary
<b>Support</b>	Several vendors, various plans	One vendor, one plan

*The Netezza appliance's unique appliance architecture and industry-standard compatibility make it easy and cost-effective to install, implement, deploy and operate a data warehouse environment. And the ease-of-use of the appliance approach translates immediately to the bottom line, with low acquisition and ongoing maintenance costs, leading to a much lower total cost of ownership.*

## The power to question everything

With its innovative appliance simplicity and proven high performance and affordability, the Netezza family of data warehouse and analytic appliances is enabling organizations to leverage the power of business analytics across the extended enterprise. From power users doing advanced, deep analytics to

business users running a broad range of operational analytics to users distributed physically or functionally at the "edges" of the organization, all now have the power to question everything.

# 10000 Series Specifications

<b>Hardware</b>	<b>10050</b>	<b>10100</b>	<b>10200</b>	<b>10400</b>	<b>10600</b>	<b>10800</b>
<b>Racks</b> (Standard 19")	1 (50% populated)	1	2	4	6	8
<b>Total SPUs</b> (Query Processing Nodes)	56	112	224	448	672	896
<b>User Data</b> (max.)	6.25 TB	12.5 TB	25 TB	50 TB	75 TB	100 TB
<b>With Compress Engine</b>	12 TB	25 TB	50 TB	100 TB	150 TB	200 TB
<b>Physical Cabinet Specifications (per rack)</b>						
<b>Height</b>	80.5" / 2050 mm					
<b>Width</b>	24" / 610 mm					
<b>Depth</b>	38" / 970 mm					
<b>Weight</b>	1,100 lbs / 520 kg (max.)					
<b>Operating Temperature</b>	50F to 95F / 10C to 35C					
<b>Cooling Requirements</b>	12,000 BTU/hour					
<b>Power Requirements</b>	Survivable A/B dual power feed, 30A fusing					
<b>Safety</b>	UL/CSA/EN60950					
<b>Emissions</b>	FCC Part 15, ICES-003, AUS/NZ C-Tick, VCCI and EN55022 Class A; European Immunity: EN55024					

<b>Software</b>		<b>Third-Party Applications</b>	<b>Host-Based Hardware</b>
<b>Operating System</b>	Red Hat Linux Advanced Server 4.0	<b>Data Integration Platforms</b> — Ab Initio, Business Objects, Informatica, Information Server, Oracle  <b>Business Intelligence Platforms</b> — Actuate, Business Objects, Cognos, Hyperion, IBI, MicroStrategy, Oracle, SAS, SPSS  <b>Packaged Solutions</b> — 10e Solutions, QuantiSense, SAP, Unica  <b>Data Protection Platforms</b> — Symantec Veritas NetBackup	Supports Ethernet and SAN connectivity
<b>Supported APIs</b>	SQL, OLE DB, ODBC 2.5/3.0/3.5, Type 4 JDBC V 2.0/3.0		
<b>SQL Standards</b>	SQL-92 compliant, with SQL-99 extensions		
<b>High-Speed Load/Unload</b>	High-speed interoperability with ETL and EAI tools at rates as high as 1 TB/hour		
<b>Backup &amp; Restore</b>	Interoperable with Legato (EMC <sup>2</sup> ), Tivoli (IBM) and Veritas, at rates as high as 4 TB/hour		
<b>Database Portability</b>	Portability from IBM DB2, Informix, Microsoft SQL Server, MySQL, Oracle, Red Brick, Sybase IQ, Teradata		
<b>Additional Tools</b>	Windows and web-based DBAdmin GUI; CLI and high-speed loading/unloading for AIX, HP-UX, Linux, Solaris and Windows		

<b>Services</b>	
Site preparation guidelines	Software patches and maintenance releases
System installation	Global Netezza/HP support ( <i>Available 7x24 4hr response</i> )
7x24 web-based services ( <i>Knowledge base, FAQ, call logging</i> )	On-site critical spares
Major software feature upgrades	Service Level Agreement Options ( <i>Standard, Business Critical and Partner Support</i> )

## About Netezza

Netezza (NYSE Arca: NZ) is the global leader in data warehouse and analytic appliances that dramatically simplify high-performance analytics for business users across the extended enterprise, delivering significant competitive and operational advantage in today's information-intensive marketplaces. The Netezza Performance Server® (NPS®) family of systems brings appliance simplicity to a broad range of complex data warehouse and analytic challenges. Customers who are realizing the benefits of Netezza appliances include Ahold, Amazon.com, CNET Networks, Debenhams, Department of Veterans Affairs, Epsilon, Neiman Marcus, Orange UK, Premier, Inc., Ross Stores, Ryder System, Inc., The Carphone Warehouse, and Virgin Media. Based in Marlborough, Mass., Netezza has offices in Washington, DC, the United Kingdom and Asia Pacific. **For more information about Netezza, please visit [www.netezza.com](http://www.netezza.com).**

Netezza Corporation : 26 Forest St : Marlborough, MA 01752  
 +1 508 382 8200 tel : +1 508 382 8300 fax : [www.netezza.com](http://www.netezza.com)