ACTIAN™

Take the Next Step from Netezza to a Modern Cloud Data Warehouse

Extend your Netezza investment with a phased offload to Actian Avalanche

Actian Avalanche Cloud Data Warehouse Key Features

Hybrid cloud support for AWS, Azure, Google Cloud, private cloud, on-premise

Fully SQL-2016 compliant

Open, industry standard data access, including support for Spark, ODBC, JDBC, .NET

Extensive interoperability with legacy on-premise and native cloud apps

200+ pre-built enterprise application and SaaS connectors

Key Benefits

Industry-leading price-performance

Pay only for what you use - remove CapEx and reduce OpEx by 50%

Perform real-time updates at the same time as analytics without performance degradation

Over 95% functional parity with Netezza

Fully managed cloud service

Ease of access to Hadoop, streaming, mobile and IoT data sets

Interoperability with popular AI and ML applications at scale

When IBM announced the of end-of-life for Netezza, it marked the end of an era for the industry's first data warehouse appliance. Once respected for its performance and ease of use when it launched at the turn of the century, Netezza is no longer well-suited for the economics of today's cloud-centric, Big Data world. IBM's decision to end support for Netezza appears to be a tacit acknowledgment of these headwinds.

Businesses are increasingly turning to cloud data warehouses to modernize their enterprise data warehouse. With cloud economics, broad ecosystem support and implicit agility, these modern data warehouses appear to be the Ideal solution for insight-driven businesses who want to easily take advantage of the newest data standards and algorithms at scale without destroying their budget.

All cloud data warehouses are not created equal

As you consider your options for a new data warehouse, make sure that the solution preserves what you've long appreciated about your Netezza systems while overcoming modern challenges. Most cloud data warehouses require you to make compromises despite their ambitious claims.

- **Performance degrades at scale** – Performance often slows as the volume of users increases, resulting in users queuing up for their workloads to be executed
- **Low starting cost scales up quickly** – Cloud data warehouses are inexpensive to get started and the meter may technically run only when service is in use, but you will see a huge monthly sticker shock as you run full production workloads
- **No hybrid deployment support:** Lack of support for a hybrid deployment means you may need to use different technologies for cloud and on-premise systems. This creates additional data silos because you will likely be keeping some of your data on-premise due to regulatory compliance or security concerns.
- **Not easy to manage:** Not all cloud data warehouses are delivered as a fully managed service, with some requiring the user to design, deploy and manage the environment
- **Data integration:** While there is a plethora of data integration products, services and open standards, lack of pre-built integration drives additional costs and slows time-to-value

Data sheet

IBM IAS: Marketing Package of Old Tools

IBM is incentivizing Netezza customers to move to the IBM Integrated Analytics System (IAS) based on the Db2 Warehouse. Unfortunately, IAS is a marketing package consisting of loosely-integrated system of IBM products, bearing little resemblance to the Netezza experience. It lacks everything you appreciated about Netezza, sacrificing ease-of-use and flexibility, only to add to your TCO. IBM offers the Db2 Warehouse on Cloud as an alternative for those who want to migrate to the cloud. Netezza users will certainly be disappointed by the difference in functionality. With both the IAS and Db2 Warehouse on Cloud, you can expect to stay locked in IBM's expensive ecosystem yet again since they will require specialized knowledge and skills to operate and manage.

Actian Avalanche: Third Generation Managed Cloud Data Warehouse

Actian Avalanche is a fully-managed cloud service designed from the ground up to deliver high performance and scale across all dimensions – data volume, concurrent user volume, and query complexity – at a fraction of the cost of Netezza. It can seamlessly run in the cloud, on-premise or in a hybrid fashion across cloud and/or on-premise environments, enabling you to migrate or offload applications and data to the cloud at your own pace.

Avalanche offers everything you love about Netezza – and much more

As a Netezza customer, you've grown accustomed to the simplicity, performance and scale offered by your reliable data warehouse. With Avalanche, you can benefit even more from these same strengths while also enjoying cloud elasticity, economics and the latest advancements in analytics.

Netezza Valued Strengths	Actian Strengths
Performance	10-20X higher performance
Tuned appliance	Built on scalable commodity hardware
Deployed on-prem	Hybrid solution – on-prem and/or cloud
TCO	50% lower OpEx
Predictable migration	95% functional parity with Netezza

Avalanche highlights:

- **Hybrid cloud** – True hybrid data warehouse that operates seamlessly in multi-cloud environment with on-premise data. Only one technology stack to learn, deploy and manage.

- **Unmatched performance** – The world's fastest analytics data warehouse provides 10 - 20x performance improvement over Netezza appliances. Performance advantage increases as the data volume, query complexity and user concurrency grow.

- **Interoperability** – Fully interoperates with all of Netezza's back-end applications and data repositories. Minimizes disruption and preserves your multi-year investment in application development and integration.

- **Lower TCO** – Removes any new CAPEX and reduces OPEX further by turning off compute resources when not in use

- **Fully managed cloud service** – Reduces administration costs and implementation time

- **No cloud vendor lock-in** – Available in Amazon Web Services (AWS), Microsoft Azure, Google Cloud, and private cloud

- **Modern analytics** – Incorporates Hadoop, Kafka, streaming, mobile and IoT data, and connects to your favorite AI/ML application
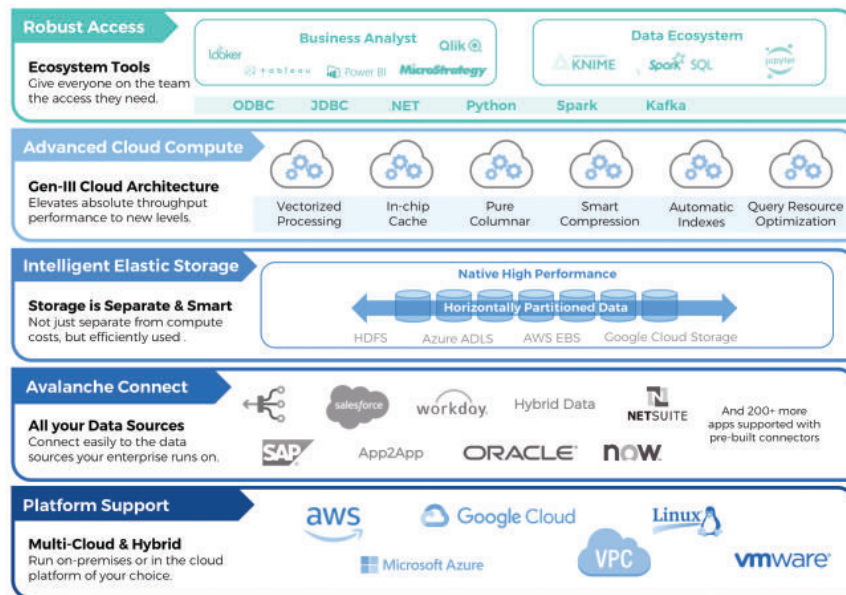
Figure 1. Actian Avalanche is a high-performance platform that is optimized for compute, memory and storage, and the only platform built from the ground up for intelligent multi-cloud hybrid environments

Modern and flexible deployment options

You don't have to trade on-premise vendor lock-in for single-cloud vendor lock-in. The Avalanche cloud data warehouse is built for multi-cloud by design. The same Avalanche platform is available on AWS, Azure, Google Cloud, and on-premise on POSIX environments as well as VMWare containers. All deployments, regardless of location, are compatible so you don't have to relearn the technology or alter your query workloads. It provides the perfect solution for on-premise datasets that cannot move to the cloud due to compliance requirements or other business restrictions.

Optimized storage for cost efficiency

Avalanche separates compute from storage so that you can increase or decrease these two components independently of each other. Pay only for what you use by switching off compute resources altogether when they are not needed.

Avalanche uses resilient, high-performant storage mechanisms such as Elastic Block Storage (EBS) in AWS, Azure Data Lake Storage (ADLS) Gen 2 in Azure, Google Cloud Storage, and HDFS/POSIX for on-premise. Avalanche's advanced compression algorithms, combined with using the most efficient algorithm for the data stored in every block, leads to the most optimized use of storage. This helps reduce your total cost of ownership.

And Avalanche's built-in external table capability enables organizations to access data residing outside of the data warehouse without moving the external data, ensuring you will always be using the freshest, most current data.

Built for performance

Avalanche is built on a scalable, elastic architecture that enables multi-cloud as well as on-premise, enterprise-grade workloads—those involving a large amount of data, high levels of concurrency, and/or complex queries.

Unlike other cloud data warehouses, Avalanche enables real-time updates to data in the data warehouse without adding latency. You can be assured of accessing the freshest data to power your analytics without paying a performance penalty. Its advanced columnar implementation enables the least I/O performed while retrieving data from disk.

Avalanche's vectorized compute leverages CPU Single Instruction, Multiple Data (SIMD) and processes data in the L1/L2 CPU cache instead of RAM, leading to significantly faster performance.

Democratized data analysis

Avalanche works with all your analytical applications to support the needs of users with a wide range of technical skills. Each persona, including business analysts, data scientists and data engineers, can interact with Avalanche using familiar tools and languages that your organization has already invested in. Hundreds of users can access the dataset and perform their own ad hoc queries at the same time without experiencing performance degradation.

For the Business Analyst, Avalanche partners with the most popular BI tools, including Cognos, Tableau, Qlik, Looker and MicroStrategy. All the functionalities are exposed with SQL as well as with their favorite authoring tool.

For the Data Scientist, Avalanche provides highly scalable atomic data analysis exposed via Python, Java or C++ library which can be plugged into tools such as Jupyter notebook. Avalanche also provides an optimized native Spark integration and KNIME plugin that helps data scientists define pipelines for advanced analytics work.

For the Data Engineer, Avalanche supports popular languages such as Python, Scala, Java, C and access via REST APIs.

Integrate with your enterprise applications with just a few simple clicks

Avalanche provides over 200 pre-built enterprise connectors to popular data sources such as ServiceNow, Salesforce and PeopleSoft. Other cloud data warehouse platforms require you to work with partners to help source and move data to the platform, resulting in extra costs and hassle. The integrated Actian FlexPath architecture enables you to source data from data sources with just a few clicks in the UI and, more importantly, the integration is fully managed by Avalanche.

Global bank saves $20M by transitioning to Actian

One of the largest financial institutions in the world needed t find a high-performing, scalable solution to replace its in-house analytics solution, Netezza, which had reached end-of-life. The bank sought one repository for all transaction data, and the ability to monitor and manage client exposure and risk.

After a thorough evaluation process, including a performance proof of concept, the bank chose Actian for its easy and cost-effective transition path. Analytics that used to take hours or days can now be done in minutes. Improved performance and lower TCO is expected to translate to over $20M in savings over five years. Click here to learn more.

Actian Avalanche Versus Netezza

		Netezza Appliances	Actian Avalanche
Data Store	Storage Technology Performance level	Row with First Gen columnar	Third Gen columnar
Deployment	Options for deployment	On-premise only	Cloud and on-premise
	Multi-Cloud	No	AWS, Azure, Google Cloud, private cloud
Integration	Pre-built connectors	No	Over 200 or Partner
Scale Architecture	ACID	Yes	Yes
	CPU usage	Non-vectorized	Vectorized
	Memory usage	Legacy	In-memory and in-cache
	Storage usage	Local storage (fast)	EBS, ADLS (fast)
	Handles updates	Yes, but struggles at scale	Yes
	Performance for complex workloads	0.1-1x	10X
	Designed for concurrency	Yes – defaults to 48	Yes – default to 64
Ease of running	APIs and access method	CLI/JDBC/ODBC/OLE DB	CLI/JDBC/ODBC
	Elasticity - Turn On/Off	No	Yes
	ANSI SQL support	Yes	Yes
Data-types and functions	Stored procedure support	Yes	Yes
	External table support	Yes	Yes

Table 1. Features comparison

Choose your own migration journey

As you consider your options for moving beyond Netezza, remember that the journey is as important as the destination. According to Gartner, historically over 60% of traditional data warehouse migrations fail. To ensure a successful migration journey, the project must be defined by your unique needs—not just of the overall organization, but at a granular fashion at the department level analyzing each individual workload for performance, deployment and SLA requirements. Therefore, be sure to select a solution that fully provides the flexibility and capabilities your organization requires both today and tomorrow.

Charting Your Evolution: Ask the Right Questions

One of the key decisions in designing your journey is whether to modernize the entire data warehouse or incrementally offload project by project to a modern data warehouse in a phased manner — gradually reducing the burden on your legacy system.

Pressure to perform migrations in one fell swoop often arises out of cost constraints and/or performance frustrations with the legacy data warehouse. But think back to how prior modernization projects have gone— whether involving mainframes or any other legacy technical debt—and you can quickly see the high risk of taking on the entire data warehouse at once. To mitigate risk, you want to choose an incremental approach that would enable you to gradually transition from Netezza while first modernizing your most mission-critical workloads.

Similarly, you can choose to move all your data warehouse to the cloud as part of a cloud-first strategy or conduct your migration in stages. Businesses with rigorous compliance demands often prefer to store some of their critical data on-premise. Actian Avalanche offers a hybrid deployment option to give you the flexibility of moving to the cloud at your own pace.
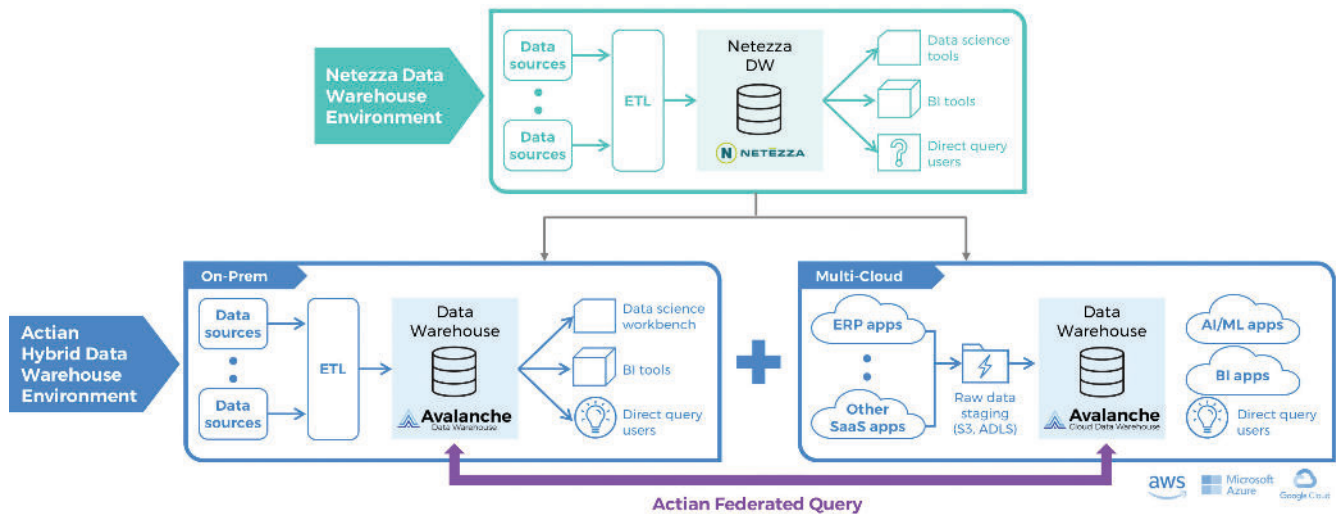

Figure 2. Actian's hybrid cloud migration enables you to incrementally offload your projects to the cloud according to your business needs. You can treat all Avalanche deployments in the cloud and on-premise as a single entity that can be seamlessly accessed.

Migrate with confidence: Actian's low risk approach to cloud adoption

Actian Avalanche can help you incrementally migrate or offload from Netezza until it can be retired in a managed fashion—according to your timeframe and your terms. Choose the path that is best for you – cloud, on-premise, or a combination of both, with a seamlessly architected hybrid solution.

With over 200 pre-built direct connections to source enterprise applications, Avalanche can migrate your existing business data along with new data sources. Your users are empowered to operationalize combinations of these datasets in near-real time.

Migrations of terabytes of data, thousands of tables and views, specialized code and data types, and other proprietary impediments to change do not happen overnight. Avalanche adheres to SQL, Spark, JDBC/ODBC, and other open industry standards and has a wealth of partners capable of automatically identifying and converting proprietary elements of Netezza to standards-based views, code, data, etc. Prior studies from our customers and prospects have shown typical gap analysis to resolve to over 95% on average for migrations.

Actian minimizes the disruption and risk of your Netezza migration across multiple dimensions:

- Incrementally offload your data and applications to the cloud at your own pace. Continue to keep some data on-premise as necessary.
- Reuse your existing data ETL connections such as DataStage and Informatica
- Reuse your existing interfaces for your BI applications and tools, e.g. Cognos, PowerBI, MicroStrategy, Looker, Tableau
- Automatically convert procedures, macros and scripts using a simple migration utility tool
- Minimize staff retraining by using ANSI standard SQL for direct queries
- Preserve your existing data retention window with expanded storage

Some of the underlying choices that made Netezza successful – the extension of the Postgres database engine into an MPP, shared-nothing design – are also included in Actian Avalanche. These shared elements make it practical to migrate even the most complex application eco-systems to Avalanche. Also similar between the two systems are the SQL syntax, the set of available data types, the underlying SQL execution semantics, and the stored procedure and user-defined function capabilities.

This compatibility enables unmatched simplicity and speed of migration of the most complex workloads from Netezza. The similarity of architecture also extends to some of the workload management capabilities, where Avalanche has sophisticated abilities for governing users, query queues, and providing in-depth reporting and usage information – all features that Netezza users have become accustomed to.

Next steps

Visit www.actian.com/avalanche to learn more about Actian Avalanche. Contact us at info@actian.com to see if you qualify for a complimentary consultative engagement to evaluate your data warehouse modernization journey.