Actian X

Transaction Processing and Operational Analytics Within a Single Database

Operational Analytics

Actian X is a hybrid transactional/analytics processing database with record-breaking performance. Its architecture supports both row-based and columnar storage formats using Ingres, an ultra-reliable enterprise transactional database, and Vector's X100 analytics engine as shown in Figure 1. This combination allows organizations to perform transaction processing and operational analytics easily and efficiently within a single database.

Operational analytics provides real-time insights into business operations, enabling decision makers to quickly identify trends, patterns, and anomalies. By having access to up-to-date information, organizations can make more informed decisions that are based on current data, to proactively identify and address issues before they escalate into larger problems.

Features and Benefits

- Integrates Ingres transactions with X100 operational analytics
- Executes complex queries in just seconds
- Handles thousands of users, nodes, and petabytes of data
- Makes it simple to analyze Ingres data using the same access methods and queries
- Requires virtually no tuning for performance
- Flexible schema management with zero copy cloning

Exceptional Performance and Workload Automation

Vector powers analytics with superior performance using column-based data storage, x86 vector processing with in-cache direct decompression, and intelligent query optimization on a highly scalable SMP OR MPP architecture. The result is incredibly fast and efficient reporting analytics with complex query execution in just seconds. A recent GigaOm TCP-H Benchmark Test reveals that that the X100 engine is 9x faster than alternate solutions (see Figure 2).

Per-query parallelism lets developers easily test and tune queries for application performance. Automated workload management prioritizes workloads to further optimize query performance and to efficiently use resources. Query result caching with automatic overflow to disk storage eliminates workloads having to wait for memory to free up before they can complete execution. Additionally, communication services optimization improves performance for queries running on heterogenous networks.

"The turnaround for analytical queries is simply amazing. Instead of taking days to satisfy users' very complex queries, Actian X returns results in just minutes, meaning that information can get out to users who need it to run their discovery projects very quickly indeed."

Marin Bowes
Database Administrator, Clinical Trial Service Unit and Epidemiological Studies Unit, University of Oxford
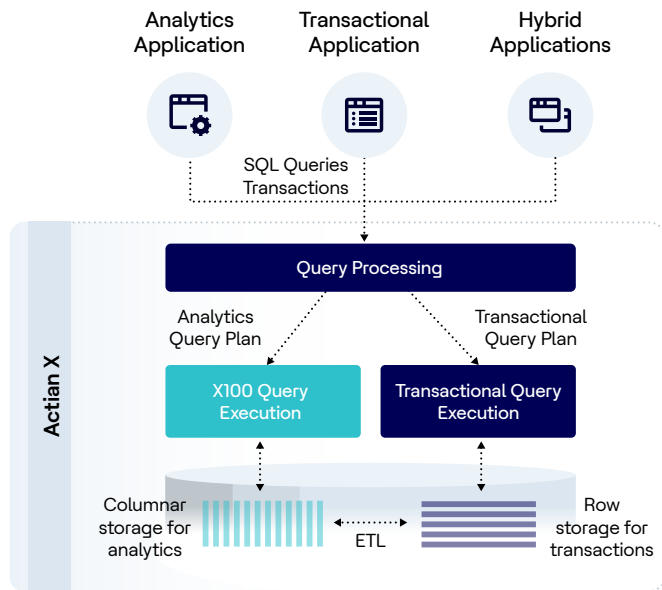
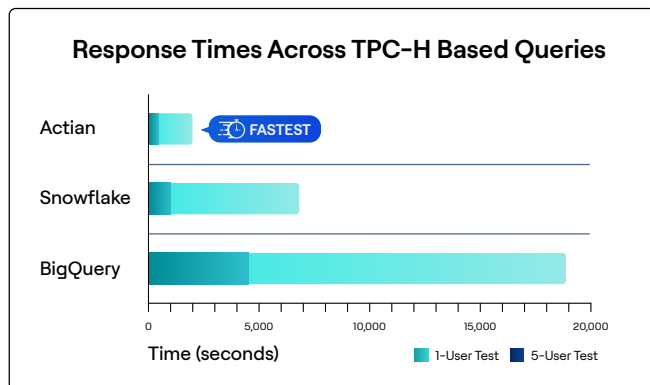Figure 1. Hybrid Transactional/Analytics Processing

Figure 2. X100 is 9x Faster Than Alternate Solutions

Empowering Your Growth, Seamlessly Scalable

Actian X is designed to scale both vertically and horizontally to accommodate growing data volumes and user loads. It can handle thousands of users, nodes, and petabytes of data. Features such as sharding, replication, and clustering can distribute data and workload across multiple nodes or servers, thereby ensuring scalability and fault tolerance.

Actian X with X100 Makes Operational Analytics Easy

- Single vendor, same support contract, same database administrator (DBA) skills
- Standard syntax for analytics
- Virtually no tuning is required for performance
  - No special data model
  - No indexing or constraints
  - No materialized views
  - No pre-aggregated cubes
  - No compression configuration
  - No complex block size configuration
  - No complex table structures
- Zero copy cloning allows schema changes without data duplication

Creating Hybrid Analytical/Ingres Transactional Applications is Amazingly Simple

Harnessing the X100 capability in Actian X takes just a few steps:

1. Create X100 tables for analytics
2. Populate the X100 tables with just the transactional data from Ingres needed for reporting and analytics
3. Create an external process to periodically update the tables
4. Use the same Ingres queries and access methods. Actian X automatically directs the queries (via the table structure) to send to the X100 engine for processing.
5. Reporting and visualization tools connect to the database instance as they normally do

About Actian

Actian makes data easy. We deliver cloud, hybrid cloud, and on-premises data solutions that simplify how people connect, manage, and analyze data. We transform business by enabling customers to make confident, data-driven decisions that accelerate their organization's growth. Our data platform integrates seamlessly, performs reliably, and delivers at industry-leading speeds. Learn more about Actian, a division of HCLSoftware: **www.actian.com**.