Chinese Taxation Authority Turns to Grid Computing to Improve Data Analysis

State Administration of Taxation
Beijing, China
www.chinatax.gov.cn

Industry:
Public Sector

Employees:
10,000

Oracle Products & Services:

Oracle Database
Oracle Partitioning
Oracle OLAP
Oracle Data Mining

Oracle Partner:
Digital China
www.digitalchina.com.cn

Key Benefits:

- Supported taxation reform by standardizing and modernizing information infrastructure
- Consolidated data held in disparate systems into a single repository
- Enabled senior officials to conduct deep analysis
- Optimized hardware utilization by migrating to grid computing
- Reduced fraudulent activities by improving auditing processes
- Enhanced service to taxpayers

"Oracle's implementation experience and deep understanding of Chinese taxation structures mean it is well placed to help us migrate to a modern information infrastructure. We have complete faith in the company's products and consultants."
– Project Team, State Administration of Taxation Bureau

The State Administration of Taxation (SAT) is responsible for regulating taxation affairs under the State Council of China. The organization oversees tax collection and the development and enforcement of tax regulations. It also works with provincial governments across China to manage local taxation activities.

In 1994, SAT began a project to improve tax collection and administration and support wide-ranging reforms proposed by the Chinese Government. The initiative, called the Golden Tax Project, involved building a database platform to run four critical systems and integrating data scattered across hundreds of systems into a central repository.

The project was divided into three phases. The first phase focused on modernizing infrastructure and automating manual processes for administering value-added tax. The second phase of the project involved developing and expanding the China Taxation Administration Information System (CTAIS), the principal taxation management system. Four new subsystems were added to the CTAIS: a forgery-proof invoice writing system, a tax authentication system, a value-added tax audit system, and an invoice checking administration system.

Oracle technology was used extensively in both phases of the project. Oracle Database underpins all of SAT's taxation systems, ensuring the organization benefits from powerful performance and high availability and scalability.

The Importance of Data Integration

Its vast territory and large population make tax administration in China an extremely complex process. The country's economic growth following its admission to the World Trade Organization also necessitated extensive taxation reforms. SAT was faced with

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the challenge of planning and implementing these reforms and streamlining the taxation regime.

The first step was to establish a standard information management infrastructure. Each provincial government manages taxes in their province, and each of them used a different system to collect and store data. The lack of a unified information management framework made data integration between the state and provincial governments impossible.

Once a standard information management infrastructure was developed, the next challenge was to integrate data held in different systems. This would enable SAT to view and analyze taxation data from across the nation. Government ministers can then use the data to inform policy making. It was also important for the information management infrastructure to be open and flexible, so that data integration could be completed seamlessly.

The integration of information systems, data centralization, and the implementation of a disaster recovery plan were key objectives of SAT's Golden Tax Project.

Grid Computing Delivers Benefits

SAT selected Oracle to design, develop, and deploy an information management infrastructure based on the vendor's experience implementing tax systems around the world and deep understanding of the Chinese taxation environment.

Oracle proposed a move to grid computing to optimize hardware utilization and resource sharing. It would also allow SAT to minimize IT costs by enabling the organization to add server nodes only when it needs additional processing power.

The Oracle team worked with SAT to integrate existing systems and databases and build a two-layered information processing system. The solution was designed to address data collection, storage, quality control, and presentation issues.

By far the most challenging task was integrating data stored in different systems into a central repository. It involved linking information systems in different cities, prefectures, and provinces with the central database in Beijing. In addition, SAT developed auditing and analysis functions so users could run reports and extract maximum value from the database.

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The Golden Tax Project enabled SAT to introduce and support reforms, ensure compliance, improve auditing processes, and significantly reduce the number of fraudulent tax submissions.

Future Plans

SAT is now moving to the third phase of the Golden Tax Project. The organization intends to build on its data integration activities to improve information access and optimize system development. The ultimate goal is to simplify tax collection and auditing and improve service to taxpayers.

Why Oracle?

According to SAT, Oracle offered more powerful functions and better performance than similar domestic and international products.

For example, Oracle's online transaction processing function ensures multiple users can access data in the same table. The row lock function 'locks' data to prevent information from being updated while it is being used. In addition, the powerful search options ensure near real-time responses to queries.

Oracle offered reliable database management tools that made it easier to allocate space, manage resources, and complete other routine tasks. SAT also singled out Oracle Partitioning, which allows tables and indexes to be split into smaller, more manageable components to ensure high database availability and performance.

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