

SoftBank Mobile Improves Database Query Performance by up to Eight Times



SoftBank Mobile Corporation
Tokyo, Japan
mb.softbank.jp

Industry:

Communications

Annual Revenue:

US\$19.4 billion

Employees:

6,300

Oracle Products & Services:

Oracle Exadata Database Machine
Oracle Database

“Oracle Exadata Database Machine has enabled SoftBank Mobile to create a data warehouse with up to eight times the processing capacity of our previous data warehouse while reducing our overall database running costs by 50%.”

– Keiichiro Shimizu, Senior General Manager, Planning Management Department, Information Systems Division, SoftBank Mobile Corporation

Established in 1986, SoftBank Mobile Corporation is a leading mobile telecommunications service provider based in Tokyo, Japan. It offers a range of mobile services that run on Wideband Code Division Multiple Access (W-CDMA) and Universal Mobile Telecommunications System (UMTS) 3G networks.

Driven by the popularity of smart phones, SoftBank Mobile has achieved the highest growth in Japan’s mobile phone market over the past two years, attracting more than 200,000 subscribers per month.

This increase in subscribers from a previous average of 50,000 per month strained the company’s data warehouse.

“We quickly realized that with this expected increase, we would run out of storage capacity by the end of March 2010,” said Keiichiro Shimizu, senior general manager, planning management department, information systems division, SoftBank Mobile Corp. “Performance problems started to occur; it was taking us 25 hours to analyze the data log each day.”

Database Performance Increased Up to Eight Times

In January 2009, SoftBank Mobile conducted an Oracle Exadata Database Machine proof-of-concept test with a data volume based on an expected future increase in transactions.

During this test, the company’s data warehouse performance improved by up to eight times.

As a result, SoftBank Mobile determined it was able to replace 36 Teradata racks with just three Oracle Exadata racks.

Key Benefits:

- Replaced 36 Teradata data racks with three Oracle Exadata racks
- Increased storage capacity for data warehouses to 150TB, an increase of 150% on the previous capacity
- Improved database query performance by up to eight times
- Reduced database running costs by 50% and operational costs by more than half
- Analyzed call detail records and customer logs from each day in seven hours rather than 25 hours

The new data warehouse, running on Oracle Exadata, is connected to the customer care and billing system, which runs on Oracle Database. It can store up to 150TB of data, an increase in capacity of 150% on the previous Teradata solution.

Faster Performance at a Lower Cost

The intelligent storage software in every Oracle Exadata Database Machine enables the company to offload processing from its database server to the storage servers. This provides significant database performance improvements by reducing database server CPU consumption while eliminating network bottlenecks.

For example, it now takes only seven hours to analyze call records and customer logs each day, compared to 25 hours previously.

This enables SoftBank Mobile to serve customers faster based on common call details records and customer logs, which has strengthened the company's marketing power.

Operational Costs Reduced

SoftBank Mobile's operational costs have been significantly reduced since the introduction of Oracle Exadata Database Machine.

"Oracle Exadata Database Machine has enabled us to create a data warehouse with up to eight times the processing capacity of our previous data warehouse, while reducing our overall database running costs by 50%," Shimizu said.

The introduction of Oracle Exadata Database Machine has also helped increase staff skills by eliminating proprietary technology and utilizing over 100 Oracle master engineers.

"It's also much easier to get access to engineers that have the relevant experience working with this system, and our operational costs are less than half what they were previously," said Shimizu.

Why Oracle?

SoftBank Mobile initially considered updating its existing data warehouse but decided it would be too costly. The company then compared five solutions before selecting Oracle Exadata Database Machine.

According to Yuji Watanabe, deputy manager, operations department, business base management department, information systems division, SoftBank Mobile Corp, Oracle Exadata Database Machine is an open and high performing system.

“The technology is also based on Oracle Database, a simple architecture that we understand, so we knew we would succeed implementing the system,” he said.

Masaki Matsuoka, project manager, information systems division, business base management department, project promotion department, SoftBank Mobile Corp, travelled to the United States in March 2009 to observe the system at one of Oracle’s test centers.

“The system processed a data volume exceeding one trillion items within a few seconds,” said Matsuoka.

Implementation Process

The implementation took just three months after system analysis and base design phase, and was completed in May 2010. The Oracle Development and Oracle field teams fully supported this project.

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