

## **NSLDS Reengineering Database Vendor Selection**

### **Goal**

Select a database tool for NSLDS II that can handle its multi-terabyte database efficiently and for reduced cost. Make selection by June 28, 2002.

Expect initial 4+ TB in NSLDS II, and growing to 10+ TB, with data warehouse model.

<b>Vendors</b>	<b>Status</b>
NCR Teradata	Presented 4/23
IBM	Presented 4/25
Oracle	Presented 4/30
Microsoft	Presented 4/23
Sybase	Will not be invited*

*\*Our research shows that they don't have the credentials and market share*

### **Vendor Selection Criteria**

- Credentials for multi-terabyte (4+ terabytes) installations
  - Number of relevant installations
  - Satisfied client references
  - Independent ratings from Gartner, Giga, Meta, etc.
- Total ownership cost
  - Initial hardware, software and development costs
  - Ongoing operational costs, including upgrades, licensing and support
- Key technology areas
  - Compatibility w/ FSA's technology, including:
    - Application layer – Siebel, Oracle Financials
    - Architecture layer - Informatica, MicroStrategy, MQSI, and WebSphere
    - Hardware layer - Sun, HP, and NT
  - Very fast data loads performance
  - Very fast query performance
  - Scalability from the initial 4 terabytes to 10+ terabytes
  - Architecture
    - Cube-based (MOLAP) vs. source-database-based (ROLAP)
    - Strategic direction of the product
- Other Considerations
  - Strength of vendor business
  - Hosting, application service provider (ASP) model

## Conclusions

Teradata and DB2 EEE should both be considered seriously for NSLDS II. NCR has market leadership, higher capacity and performance than IBM, but IBM has more open standards, which can mean better integration with FSA's existing technical products.

The winning product should be selected based on overall cost, reduced risk to NSLDS Re-engineering, and long-term (5-10 years) business viability of the company.

## NCR Teradata

NCR should be a serious consideration for NSLDS II:

- **Credentials:** Over 220 multi-terabyte data warehouse installations, a number of clients referenced in presentation. We talked w/ Bank of America and Tricon (KFC, Pizza Hut, et), Sprint, Highmark (healthcare) and USPS, who each have successfully implemented Teradata. All are generally pleased with the choice of Teradata over IBM or Oracle, with great stories of high performance and low maintenance of hardware and software.
- **TCO:** Seem to have higher initial cost (new hardware), but lower overall cost (lower DBA support, disk, etc). Expect to get exact amounts through RFQ process.
- **Technology:** Advantages: load and query performance through parallelism; highly scalable through "shared nothing" architecture; can handle 3<sup>rd</sup> normal form data model. Disadvantage: Worldmark hardware; may be higher entry cost.
- **Research:** Independent ratings from Gartner, Giga and Meta show Teradata as #1 in multi-terabyte data warehouses (installations, query performance, and architecture)

## IBM DB2 EEE

The DB2 EEE product should also be a serious consideration for NSLDS II.

- **Credentials:** Many multi-terabyte data warehouse installations, with an average size of 2-3 TB, mostly running on IBM platforms (S/390 and RS/6000). Top-end example was 8 TB, running on S/390. We talked w/ Discover Financial Services, Freddie Mac, and Cabala (retail), who are happy with their choice of IBM. They reasons for picking IBM were that they already had IBM as part of their technical architecture, open standards, and/or political..
- **TCO:** IBM has CPU-based pricing model. Expect to get specifics later in evaluation process. Also, IBM has "passport advantage" pricing w/ FSA. Modules surrounding the DB are sold separately (DW Manager, DW Center, etc.)

- **Technology:** Advantages: scalability achieved through “shared nothing” architecture; works on non-IBM platforms and is compatible w/ Informatica, MQ Series, and MicroStrategy. Disadvantages: strong hardware affinity w/ S/390 and RS/6000; clustering may significantly add to overall cost (specifics TBD).
- **Research:** Independent ratings from Gartner, Giga and Meta show DB2 as one of the top large-data warehouse tools.

### **Oracle 9i**

Oracle should be taken out of the running for NSLDS II. While Oracle’s 9i product offers more data warehouse functionality, most of Oracle’s credentials are with 8x. Oracle has not produced the type and number of credentials that we are seeking to date.

- **Credentials:** Oracle’s presentation did not offer up enough multi-terabyte credentials. Their largest (32 TB) example was a test. Oracle has not been responsive in demonstrating credentials. There have been no client reference calls to date.
- **TCO:** Oracle has a special licensing agreement w/ FSA, which could give them a price advantage. However, getting Oracle to properly handle NSLDS II would require significant DBA time, both before and after deployment.
- **Technology:** Advantages: skill set availability at VDC and in marketplace; possibly better fit w/ Oracle Financials FMS (which could be a feed into NSLDS in the future). Disadvantages: Scalability has built-in limits due to “shared everything” architecture; based on research, query performance is not as good as Teradata and IBM.
- **Research:** Gartner, Giga and Meta have Oracle as being firmly in 3<sup>rd</sup> place.

### **Microsoft**

Microsoft should be out of the running. Microsoft did not produce relevant credentials. We originally thought that they may have a huge price advantage if they had the credentials.

- **Credentials:** Did not produce relevant installations (discussion centered on OLTP installations, rather than data warehousing)
- **TCO:** Did not highlight cost advantages (we expected them to openly compete in this area)
- **Technology:** Did not address very fast data loads or concurrent query performance, or scalability. Also tied to the NT/2000 platform.
- **Other:** Our research shows that Microsoft is not a leader in the multi-terabyte data warehouse area. Microsoft could not demonstrate otherwise.