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**Informix Internet Foundation.2000:
The Internet Future Comes Back to Informix**

Preface

Over the last two years, the Internet world has begun to return to Informix's database strengths.

In the last two years of Internet implementations, the primary need has been for scalability to meet the rapid flood of new customers to users' Web sites. Scalability remains a key concern, but 7×24 availability and rapid application development have joined it. In addition, customers require a flexible data management system as they move their businesses to the Internet. As a result, data management requirements are changing:

- E-commerce implementations and follow-on business-to-business efforts are changing the Web workload, placing greater demands on databases and supporting infrastructure;
- More and more Web sites are linking key existing back-end databases and applications to the Web site, changing the Web architecture; and
- Competitive-advantage concerns are driving users to seek "super-rapid" online upgrade and customization of applications and information.

The database is at the core of any architecture meeting these needs. Not just any database, however. The new Web architecture needs a database that delivers:

- A combination of object-relational technology and OLTP for updates and queries to text/multimedia and relational data, as well as other dynamic data types such as geospatial and HTML;

- A flexible architecture to integrate with existing systems and legacy data, while providing broad development support for Internet component standards such as Java, COM, and data-access gateways; and
- Scalability, availability, and rapid Web-application-development support.

This *Profile* describes Informix Internet Foundation.2000™, a database solution with well-integrated, time-tested relational technology for OLTP and object-relational technology for complex data; broad support for Internet standards and extensibility built into the database engine; and a proven track record in delivering exceptional scalability, availability, and complex-data-based application support. These strengths mean that Informix is in an excellent position to meet users' Internet database needs over the next few years.

Executive Summary

Informix Internet Foundation.2000 includes the relational OLTP and decision support capabilities of Informix Dynamic Server™ 7.3, as well as the object-relational technology of Informix Dynamic Server 9.14's Universal Data Option™ (UDO), fully integrated. Internet Foundation.2000 includes features such as improved performance; smaller memory footprint; shared statement cache to reduce memory usage (and thereby improve performance); added replication and aggregation features (especially useful for decision support); and User-Defined Routine (UDR) parallelization and Smart Large Object enhancements to improve object-relational performance. By integrating these two data engines, Informix can offer flexible support for OLTP relational data and multiple complex data types, scalability in a distributed environment, integration of structured and unstructured data, and performance on an unparalleled scale. As a result, Informix Internet Foundation.2000 delivers a complete Internet solution foundation aimed at providing a common platform for Web-application development, deployment, management, and integration — one that hides Web development and infrastructure complexities.

Informix Internet Foundation.2000 stands out from other database solutions for the “fit” between its strengths and users' upcoming Internet-database needs.

Informix's past prowess in TPC-C benchmarking shows its ability to perform well and scale the update/random-access transactions typical of e-commerce. Its time-tested object-relational technology translates to improved performance when users deal with typical Web-site text and graphics data, as well as the complex business logic that accompanies new links to existing enterprise applications.

The Informix Smart Data Foundation initiative combines partnerships, technology, and an architectural blueprint that points the way toward effective use of components with data, coordination of business processes across the enterprise, and creation of multi-tier distributed applications. Informix complements the Smart Data Foundation initiative with its own and third-party support and services, as well as ISV partnerships that add effective complex-business-logic-supporting DataBlade® components to the solution. Informix has a strong VAR channel as well as a significant presence in the very-large-database market. Informix Internet Foundation.2000 is a core component of Informix's Smart Data Founda-

tion. (See the July 1999 Aberdeen Profile, *Informix Smart Data Foundation*, for a closer look at the Smart Data initiative.)

Aberdeen concludes that it is time for users to take another look at Informix in general and at Informix Internet Foundation.2000 in particular.

Optimized Web Support: Informix Internet Foundation.2000

Informix Internet Foundation.2000 represents a database solution packaged specifically for Internet uses. It provides exceptional support for software components in the database server, with an open Java architecture that supports “best-in-class” Java Virtual Machines (JVMs), and the ability to deploy COM/ActiveX inside the core database engine. Informix Internet Foundation.2000 includes support for Java DataBlades and stored procedures, enabling Java developers to take full advantage of Informix Internet Foundation.2000’s object-relational functionality.

In addition to component integration, Informix Internet Foundation.2000 includes content integration (Web, text, video, C-ISAM, image, and audio); heterogeneous-data integration (gateways); and server-side application support (User-Defined Functions/Routines, or UDFs/UDRs, and User-Defined Data Types, or UDTs).

Informix users can create dynamic HTML pages that are stored and deployed from within the Informix server, simplifying Web application development.

Key to Web application development is the integration of legacy data. Informix Internet Foundation.2000 can pull in non-Informix data, such as external Java objects, CORBA objects, Enterprise JavaBeans, Web pages, or a COBOL report, and invoke the Virtual Table Interface (VTI) capability to display it in table fashion as the data originated in the database. This feature allows users to employ Informix’s database not only as a back-end database but also as a powerful “cache” database server, bringing DBMS power closer to the end-user, simplifying the process of Web application development and protecting customer investment in existing technology.

Meeting Web Users’ Needs: Handling the Web Workload

Aberdeen finds that typical Web sites’ workload is shifting steadily — from frequent access to a relatively small number of large Web pages to an e-commerce (and soon, an ERP) type of workload, with updates and random accesses (similar to updates) across a large database. The resulting workload is OLTP-like, except that some of the applications may involve complex business logic and some of the data is nonrelational (text), large (image and graphics), and complex (Web pages).

The databases best able to support this workload will be good at OLTP, complex-logic support, and complex-data-type access. Informix Internet Foundation.2000 not only qualifies on all three counts, but it also has spent at least the last three years proving its abilities in the field — a record unmatched by any other database supplier. Now that Informix Internet Foundation.2000 effectively integrates relational and object-relational technology, Informix

can deliver a common interface to this functionality that simplifies the developer's and ISV's task of applying the technology to a Web architecture.

Meeting Web Users' Needs: Open Standards Support

Informix Internet Foundation.2000 can make an exceptional claim: the ability to "support any Java and any data on any tier." That is, the Informix Internet Foundation.2000 can incorporate any "best-of-breed" Java Virtual Machines (JVMs) inside any client (e.g., desktop and mobile), Web or application server, or back-end database, and it can allow access to Informix and non-Informix data on each tier.

Informix also provides a native JDBC driver and full support for JDBC 2.0 and SQLJ.

Informix Internet Foundation.2000's support for Microsoft's COM architecture ensures that organizations can fully leverage their development investments in Microsoft technologies. Users can run ActiveX controls inside the database server through SQL queries without requiring an application server. In addition, Informix Office Connect provides the ability to extract data from Informix Internet Foundation.2000 to populate Microsoft Excel documents.

Flexibility and standards support often come at a performance cost. Informix Internet Foundation.2000's ability to place Java or COM logic inside the database engine process, including Java stored procedures, more than compensates for any performance overhead.

Meeting Web User Needs: Scalability and Availability

Informix Internet Foundation.2000 scales successfully in Web deployments because it can combine experience-hardened relational and object-relational technology. In OLTP, Informix's prowess comes especially from its long experience with SMP and multi-threading support. In object-relational technology, Informix's ability to place complex business logic and complex data type handling inside the database engine delivers added performance in applications involving e-business and Web workloads, as noted above. One key performance advantage in Web architectures is that Informix Internet Foundation.2000's object-relational features allow users to run queries that manipulate complex data inside the Informix server, eliminating unnecessary data-passing between the server and client. As any Internet user knows, eliminating unnecessary graphics transmissions can have a massive impact on performance.

Information Technology buyers should also note the additional scalability from Informix Internet Foundation.2000's component-development support. UDRs and UDTs incorporated within the server allow users to encapsulate business processes and rules as objects that can be distributed across second- and third-tier servers for highly parallel processing. In addition, Informix's core parallel architecture guarantees optimized performance when objects are run in the server.

Informix has had extensive experience supporting mission-critical applications. For example, Informix was among the first database suppliers to parallelize its backup and restore capabilities. In addition to providing core high-availability features, the Informix Internet

Foundation.2000 integrates with leading third-party Transaction Processing monitor and Application Server technologies to ensure optimal load balancing and availability across the enterprise.

Where Informix Internet Foundation.2000 Can Be Especially Effective

Informix Internet Foundation.2000 can be most useful for Internet Service Providers (ISPs) and IS buyers seeking to get the last ounce of performance and scalability out of their Internet architectures. Informix Internet Foundation.2000's support for any-tier Java or COM applications inside the database engine means that users have an extraordinary range of options for architecture design, including the ability to deploy components on any tier with optimized load balancing and parallelization — across tiers and/or within Informix Internet Foundation.2000.

Informix Internet Foundation.2000 is also a smart choice where users need to support Web-based Supply Chain Management (SCM) or Enterprise Resource Planning (ERP) applications. Informix Internet Foundation.2000's strengths in business-logic and complex-data support are particularly appropriate for SCM and ERP, and its legacy-data integration capabilities allow for simplified integration of existing applications with newly developed Internet applications.

Informix Internet Foundation.2000 is especially effective where Web-site users seek to move the database closer to the end-user for optimal access to information on the Web site. Informix Internet Foundation.2000's scalability and ability to integrate OLTP with object-relational technology allows Web-site managers to store current data at the Web site itself — and to incorporate it in Web pages more rapidly.

Aberdeen Conclusions

In “Internet time,” if an IS buyer or ISP thinks that last week’s stress was unprecedented, wait until next week. The demands on a Web site will not only increase in scale over the next one to two years, but will also add new dimensions. First on the list will be scalability needs, followed by robustness requirements, flexibility demands, rapid development, new workloads, new links to back-end systems, and new mutations of the architecture. Due credit should go to Informix for anticipating these needs with Informix Internet Foundation.2000’s object-relational technology that supports the new OLTP-like workload; ability to integrate back-end applications and data; and flexibility, scalability, availability, and rapid-development support that meet today’s Web-user requirements.

IS buyers should bear in mind, as well, that Informix Internet Foundation.2000 is especially well suited for the Web because it remains strong in traditional areas outside the Internet — for example, OLTP, very-large-database and decision support, and small to medium-sized business (SMB) support through its VAR channels.

Informix Internet Foundation.2000 leverages Informix’s heritage of supporting high-end, mission-critical user databases, extending this heritage to the Web.

Aberdeen believes, in essence, that the Internet’s future is coming back to Informix Internet Foundation.2000’s strengths. We recommend that IS buyers consider doing likewise.

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Based on a comprehensive analytical framework, Aberdeen provides fresh insights into the future of computing and networking and the implications for users and the industry.

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