LAKEVIEW™ TECHNOLOGY

OMNIENTERPRISE™

Technical Overview

Get iN-SYNC with Data Sharing.

Business initiatives such as eCommerce, customer-relationship management and business intelligence intensify the need for worldwide data sharing. In addition, managing corporate information to take advantage of business opportunities demands that up-to-date data be available across line-of-business application and data servers, Internet sites, management desktops and other systems.

OmniEnterprise is the answer. It is an advanced data-replication and information-integration solution that automates the sharing, transformation and synchronization of data among the major databases and servers throughout an enterprise.

An advanced data-replication and information-integration solution.

OmniEnterprise Data Availability

Fast and Flexible Deployment

Data availability means consistent, predictable access to data throughout the enterprise to ensure that all users have the reliable data resources they need – when, where and in the format they need them – to perform their business functions. OmniEnterprise simplifies and automates the complex and time-consuming challenge of providing data availability and sharing information across different computing platforms and databases.

OmniEnterprise enables data replication and enhancement among different databases, versions and schemas without the need for expertise in all of the different systems. To assure information consistency in these complex environments, OmniEnterprise facilitates the development of an **Enterprise Information Sharing Model™ (EISM)**, a user-defined, uniform plan of enterprise-wide data sharing, including mapping, routing, scheduling and enhancement.

OmniEnterprise, which supports Oracle®, IBM DB2®, Microsoft SQL Server®, Sybase® and Informix®, operates at the database level and uses pre-existing hardware and DBMSs. It vastly reduces implementation time and costs by eliminating the need to add or modify application code or add "gateways" or intermediate hardware or databases. Companies frequently begin sharing information within hours of installation.

Powerful Software with Custom Planning

The OmniEnterprise suite is comprised of three components that enable various methods of sharing, enhancing and synchronizing information. It includes **OmniReplicator™**, a change-based data-replication tool, and **OmniCopy™**, a snapshot copy tool. OmniReplicator and OmniCopy can be combined, enabling corporations to move and manage data in ways that fully meet their diverse business requirements.

Utilization of OmniReplicator and OmniCopy throughout the enterprise is planned and managed through the **OmniDirector™** command console. Using this unique, highly intuitive graphical-user interface, technology personnel can build and manage the Enterprise Information Sharing Model, or EISM. This flexible framework of the data-sharing environment can be easily modified to specify and schedule data distribution across the enterprise. The EISM is a repository of metadata that defines what data needs to be distributed, when it should be distributed, what route it should follow, what movement method to use, and what transformations to apply.

Building the Information Sharing Plan

All of the OmniEnterprise movement methods are set up, deployed, managed and monitored through OmniDirector, providing — from a single enterprise view — cross-platform data sharing and information integration without programming.

OmniDirector & the Enterprise Information Sharing Model (EISM)

A Foundation for Integrating Information

The EISM is a sophisticated methodology that allows administrators to fully realize the empowering benefits of information integration. Using the highly intuitive graphical-management console of OmniDirector, administrators create an EISM to plan, implement and execute data-movement processes, including routing, table and column mapping, partitioning, scheduling and data enhancement. This EISM approach provides a commonality of data-movement rules across multiple systems, ensuring consistency and optimal use of computing resources.

Companies can create a single EISM to control all enterprise-wide movement processes, or they can implement separate EISMs for different functional or geographic areas.

OmniDirector allows incremental changes to be made to individual movement processes without disrupting other processes.

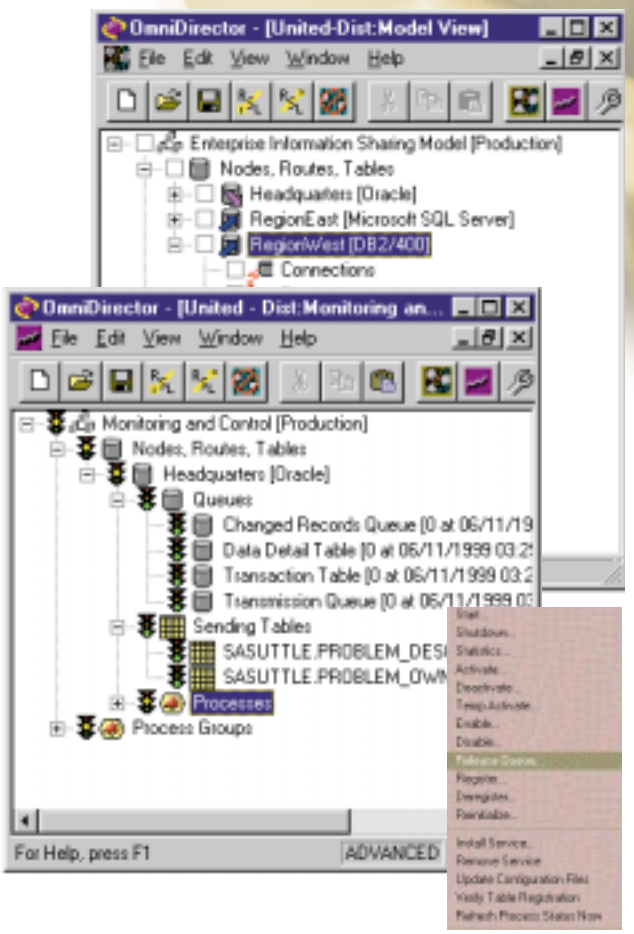
To minimize the chance of human error, OmniDirector's Model Validation Process™ (MVP) checks for completeness and accuracy prior to deploying the EISM.

OmniDirector is a uniform console that provides a single point of control and a consistent look-and-feel to implement, monitor and control all OmniEnterprise processes, regardless of the underlying hardware, operating system and database technologies.

The OmniDirector point-and-click, drag-and-drop interface does not require programming, which makes it simple to map tables with different schemas and apply data-enhancement methods. Some users prefer a command approach rather than a point-and-click interface, particularly when the replication schema becomes complex. For them, OmniEnterprise provides a Replication Schema Language (RSL) scripting alternative.

OmniDirector also features a powerful monitoring and control capability. It continually monitors nodes and movement processes and displays their status in an intuitive graphical format. If action is required, OmniDirector automatically alerts remote administrators via e-mail and provides a direct link to the appropriate nodes and databases.

Data-movement processes on all supported platforms can be controlled through OmniDirector, making it an invaluable tool for remote administrators.



OmniDirector at a Glance

- **Intuitive point-and-click, drag-and-drop graphical user interface.**
- **Single point of enterprise control to define, monitor and manage all enterprise data-sharing and synchronization requirements.**
- **Consistent look-and-feel regardless of the source and target technologies.**
- **A Model Validation Process checks for completeness and accuracy prior to deploying data movement.**
- **No programming required.**

OmniReplicator

Near Real-Time Database Synchronization

OmniReplicator provides near real-time, change-based replication, transformation and enhancement with full data-integrity protection and transaction consistency. OmniReplicator's versatility and rich functionality facilitate replication in any distributed topology, from simple source-and-target configurations to complex cascade and multi-directional, update-anywhere solutions.

OmniReplicator captures data inserts, updates and deletes as they occur in a single table, a set of tables or a subset of rows and/or columns, and replicates those changes to one or more targets in near real-time or on a scheduled basis. By distributing only changes, OmniReplicator minimizes the amount of data transmitted and reduces the database and network overhead. This makes continuous replication and near real-time synchronization of replica databases a practical option for many applications.

OmniReplicator includes full data-collision detection and resolution capability, enabling data to be modified at any location without jeopardizing data integrity. If the same data is modified simultaneously at more than one location, OmniEnterprise will detect the contention and either resolve it automatically via predefined rules, or flag the transaction for manual resolution.

These capabilities allow OmniReplicator to completely automate the process of near real-time synchronization of front-end intranet and Internet eCommerce databases with back-end corporate databases, while maintaining the integrity of the data.

OMNI Agents

Powerful Intelligence in Data Sharing

Introducing OMNI Agents:

NEVER BEFORE HAVE THE COMPLEXITIES OF DATA SHARING AND MANAGEMENT BEEN STREAMLINED SO EFFECTIVELY; NEVER BEFORE HAS FUNCTIONALITY BEEN SO EMPOWERED. OMNI AGENTS ARE UNDERLYING "INTELLIGENT AGENTS" THAT MONITOR THE SYSTEM, AUTOMATE TASKS AND PERFORM COMPLEX FUNCTIONS THAT HELP MANAGE THE DATA-SHARING ENVIRONMENT.

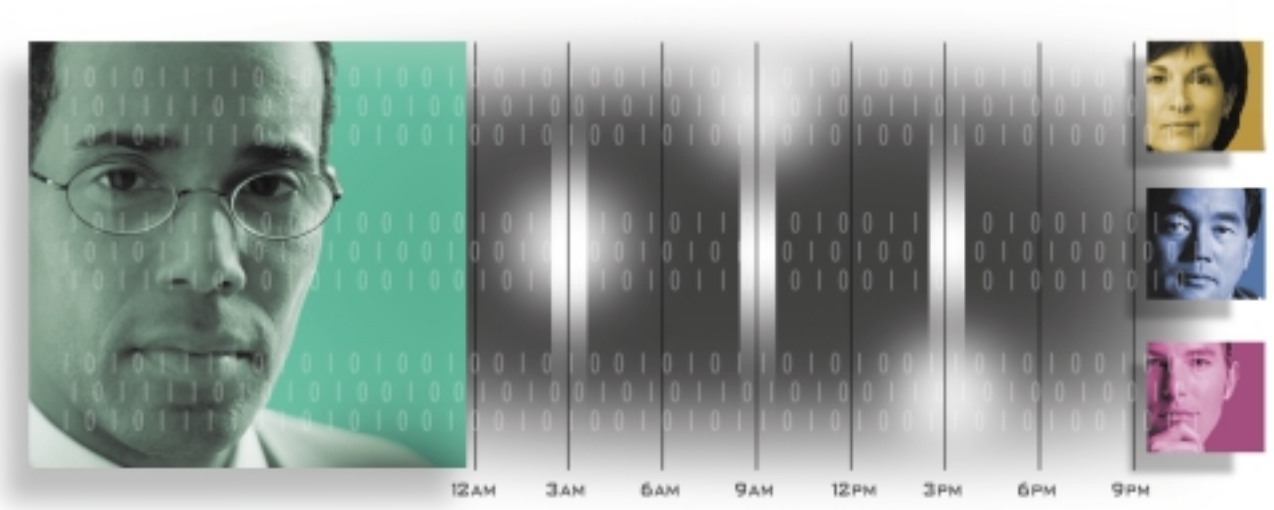
SmartCache™ *Intelligent, Efficient, Fast*

Minimize data latency, conserve valuable bandwidth and achieve superior performance. OmniEnterprise SmartCache utilizes new OMNI Agent technology to actively search for small transactions in the replication process and bundle them into a single unit. The OMNI Agent then invokes the powerful SmartCache Commit Engine™ to replicate the transactions as a single unit. SmartCache manages only complete transactions in the SmartCache Commit, resulting in exceptional performance without compromising data integrity. The overhead of source and target synchronization normally required at the end of every transaction, however small, is minimized to a single unit.

SmartLogs™ *Intelligent Diagnostics*

User and system errors once meant disruption of business, system downtime, overhead impact and considerable frustration. Minimize the impact with OmniEnterprise SmartLogs, which utilizes new OMNI Agent technology to constantly monitor the replication process. In the unlikely event that a process should abnormally terminate, the OMNI Agent will automatically invoke SmartLogs to pinpoint relevant transaction logs, gather them up, and compress them into a single file that can be transmitted quickly and easily over the Internet to a support team. Fortified with complete information, the operators and support team can immediately begin the resolution process and dramatically reduce the support time involved.

Improved functionality through system vigilance and task automation.



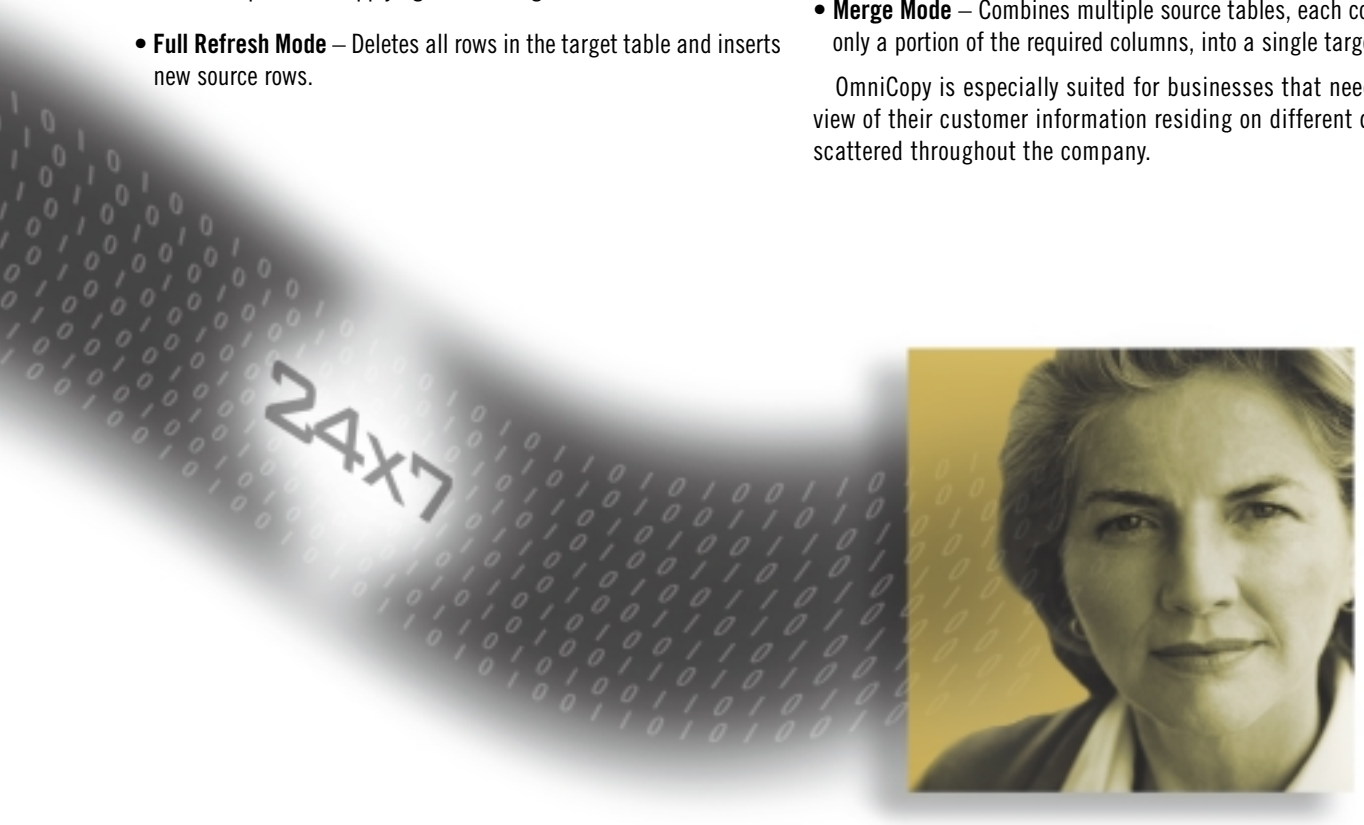
OMNICOPY

Update Periodically, at Set Intervals or On Demand

OmniCopy provides efficient, automated, periodic snapshot-copy distribution of partial or full tables, along designated network routes to one or more targets. Copy requests may be scheduled to initialize and/or periodically synchronize replica database tables. OmniCopy offers four options for applying data to target tables:

- **Full Refresh Mode** – Deletes all rows in the target table and inserts new source rows.
- **Append Mode** – Inserts a source row if it has a key that does not exist in the target table.
- **Row Refresh Mode** – Assumes the source rows are correct and replaces any duplicate rows in the target table with the row from the source.
- **Merge Mode** – Combines multiple source tables, each containing only a portion of the required columns, into a single target table.

OmniCopy is especially suited for businesses that need a single view of their customer information residing on different databases scattered throughout the company.



Powerful, Flexible Performance

The OmniEnterprise suite is ideal for information sharing across the enterprise, including:

- **Distributing data to a data warehouse.**
- **Synchronizing regional data marts for business intelligence.**
- **Exchanging near real-time results between an eCommerce server and an operations server.**
- **Selecting data for a customer/partner relationship-management extranet.**

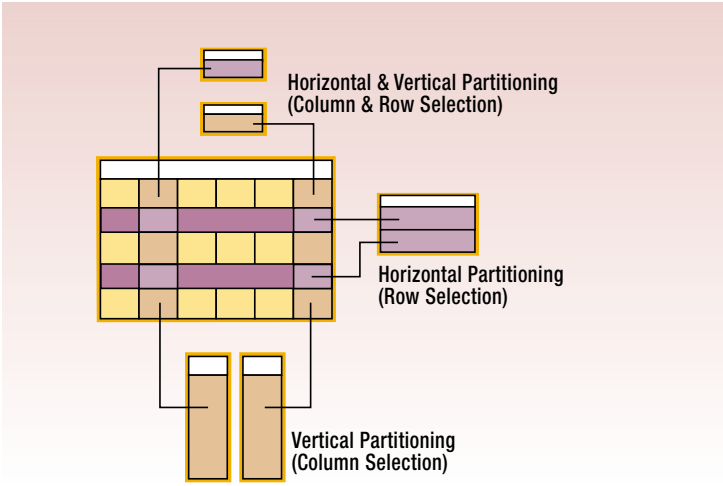
All OmniEnterprise movement methods share the same powerful set of features:

Database Partitioning

With OmniEnterprise database partitioning, users move only pertinent data by selecting subsets of tables for distribution.

Horizontal partitioning distributes only certain table rows based on a value within the row. For example, you might send only the northeastern region customer data to the northeastern region database.

Vertical partitioning restricts distribution to a selection of table columns. For example, you might send only non-confidential employee data from a human resources database to departmental databases.



Data partitioning minimizes processing and network loads by transmitting only relevant data.

Flexible Data Movement Topologies

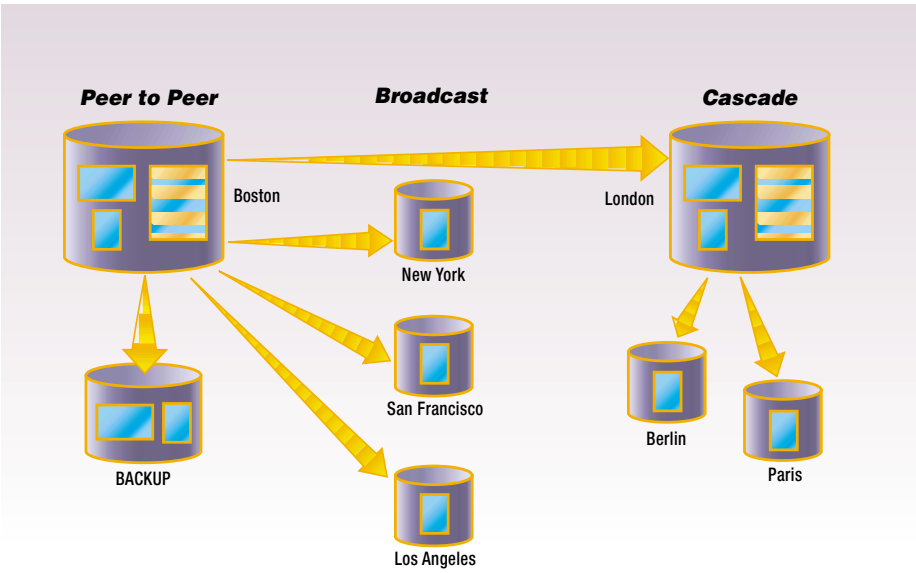
OmniEnterprise supports any data-movement topology to optimize data sharing:

Peer-to-Peer mapping allows two databases to exchange data, bi-directionally or uni-directionally.

A broadcast topology (also referred to as "hub and spoke") allows one database to exchange data with multiple databases. Regardless of the number of targets, OmniEnterprise captures the changed data only once to minimize the processing load on the source.

In the reverse of a broadcast topology, data from multiple sources can be consolidated to one target for such uses as data warehousing and business reporting.

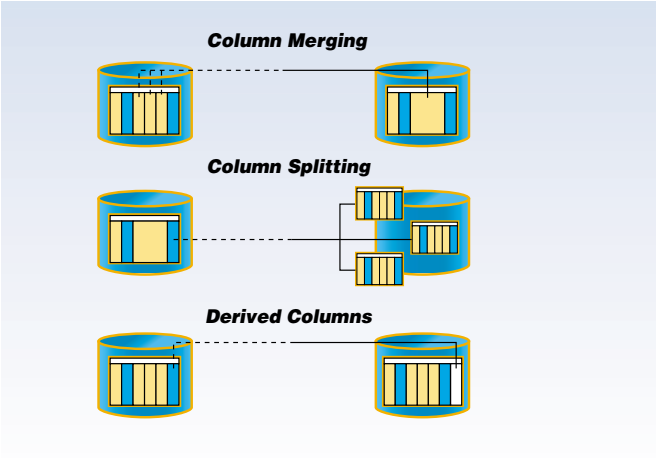
A cascade topology (also referred to as "store and forward") moves data to one or more intermediate databases that, in turn, forward the data to one or more additional databases. This is the topology of choice for data synchronization across environments with a large number of sources and targets.



Flexible distribution topologies meet the most demanding of data-sharing requirements.

Column Mapping

OmniEnterprise can perform automatic data-type conversions for different systems with different column names such as a DB2® "Date-of-Birth" field that needs to be changed to "Birth Date" in the company's Oracle® database.



Dynamic column creation, merging and splitting capabilities help meet critical data-warehousing and business-intelligence needs.

Data Transformation and Enhancement

In many data-movement applications, transmitted data needs to be modified to fit the requirements at the target location.

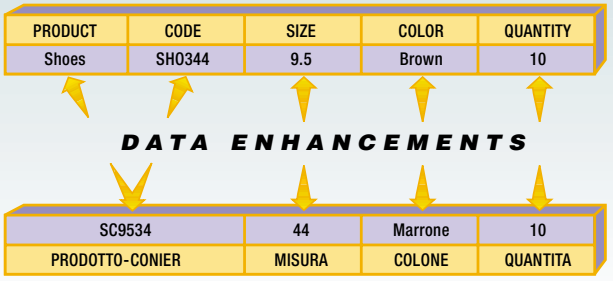
For example, you might need to:

- Convert your product codes to customer and supplier codes when you share data with them.
- Translate product names to different languages.
- Reconcile differences among data sources feeding a data warehouse.

OmniEnterprise supports several integrated data-enhancement methods. It can also incorporate custom-transformation routines written in any language callable by "C."

Enhancement can be:

- One-to-one processes, such as text justification.
- One-to-one table lookups, such as converting product codes to product names. OmniEnterprise provides an easy mechanism to create lookup tables.
- One-to-many, such as a single date field that is translated into year, month and day fields.
- Many-to-one, such as combining first and last names into a single-name field.
- Zero to many, such as adding a time-stamp.



Comprehensive data-enhancement facilities fulfill diverse, enterprise-wide data-formatting requirements.

Scheduling

Many applications do not need completely up-to-date data. In some cases, data accurate by the end of the previous business day is adequate. OmniEnterprise supports almost any required scheduling pattern, including continuous (OmniReplicator only), periodic, one-time or manually initiated scheduling.

With OmniDirector, administrators can easily set up custom scheduling or choose from many predefined schedules. Scheduling can also be coordinated with other system-management tools. This can be useful when initiating a new replica, recovering a replica after failure, creating "one-off" snapshots of a database or when network loads dictate when an operator should schedule data distribution.

System Requirements

OmniDirector is a client application that runs on Microsoft Windows NT® 4.0 and Windows® 2000 platforms. To accomplish its modeling and monitoring tasks, connectivity must be established between the OmniDirector platform and each participating source and target node platform. The minimum requirements for OmniDirector are: Microsoft Windows NT® 4.0 or Windows® 2000 with TCP/IP.

OmniEnterprise Platform Support

DATABASES
IBM DB2® for MVS
IBM OS for 390®
IBM DB2® for AS/400®
Microsoft SQL Server®
Oracle® Enterprise Server
Sybase® SQL Server
Informix® Online Dynamic Server™

OPERATING SYSTEMS
IBM MVS/ESA
IBM OS/390®
IBM OS/400®
IBM AIX®
SUN® Solaris™
HP®-UX
Microsoft Windows NT®
Microsoft Windows® 2000

HARDWARE
IBM Mainframe
IBM RS/6000®
IBM AS/400®
Hewlett-Packard®
SUN®
Intel®-based systems

Solution Services

Research and Development

The foundation of all Lakeview solutions is an extensive investment in customer-focused research and development. At semi-annual Product Advisory Council meetings, Lakeview technical staff spends several intensive days with customers and prospects who take a leading role in identifying and prioritizing requirements and enhancements to Lakeview solutions. This process ensures that Lakeview solutions satisfy real-world business problems.

In terms of quality, Lakeview Technology has no equal. Lakeview products do not leave the labs until they have undergone stringent testing and verification as a complete solution, which includes software, services and support. The complete solution goes through a rigorous, three-phase testing process and is released to customers in General Availability only after the Solution Management Team is satisfied that the deliverables meet or exceed expectations.

Consulting

Cross-platform, enterprise-wide data sharing and synchronization is not a core competency for most companies. It is for Lakeview Technology. Lakeview offers a full range of data-sharing consulting, training and certification services. These services include:

- **Planning** – ensures that the solution fits your environment and the implementation proceeds smoothly with no business disruption.
- **Integration Services** – deliver the actual implementation of the solution.
- **Training Services** – help your staff quickly become productive in the new techniques and technologies.
- **Post-implementation Audit Services** – ensure that your data-sharing solution functions optimally.

Lakeview's team of certified consultants provides solutions through a global network of partners in more than 200 business centers and 70 countries around the world, supported by solution services and support offices in Europe, Asia Pacific and the United States.

Technical Support

Lakeview offers global support from offices in the United States, Belgium and Hong Kong. Its support team can handle questions in English, German, Spanish, French, Dutch, Mandarin and Cantonese. In addition, customers who license software from one of more than 100 authorized Lakeview business partners around the world can receive support in their native language. Lakeview technical-support services are available 24 hours a day, seven days a week.

The Lakeview support team is fully trained and experienced to help you select, install and implement the optimal data-sharing and synchronization solution for your enterprise.

Visit our website at www.lakeviewtech.com

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LAKEVIEW™ TECHNOLOGY

Worldwide Headquarters
2301 West 22nd Street Suite 206
Oak Brook, IL 60523 USA
Tel: 630-573-0440

Lakeview Technology Asia-Pacific
Hong Kong, CHINA
Tel: +852-2970-3280

Lakeview Technology Europe
Brussels (Leuven) BELGIUM
Tel: +32-16-39-55-55

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