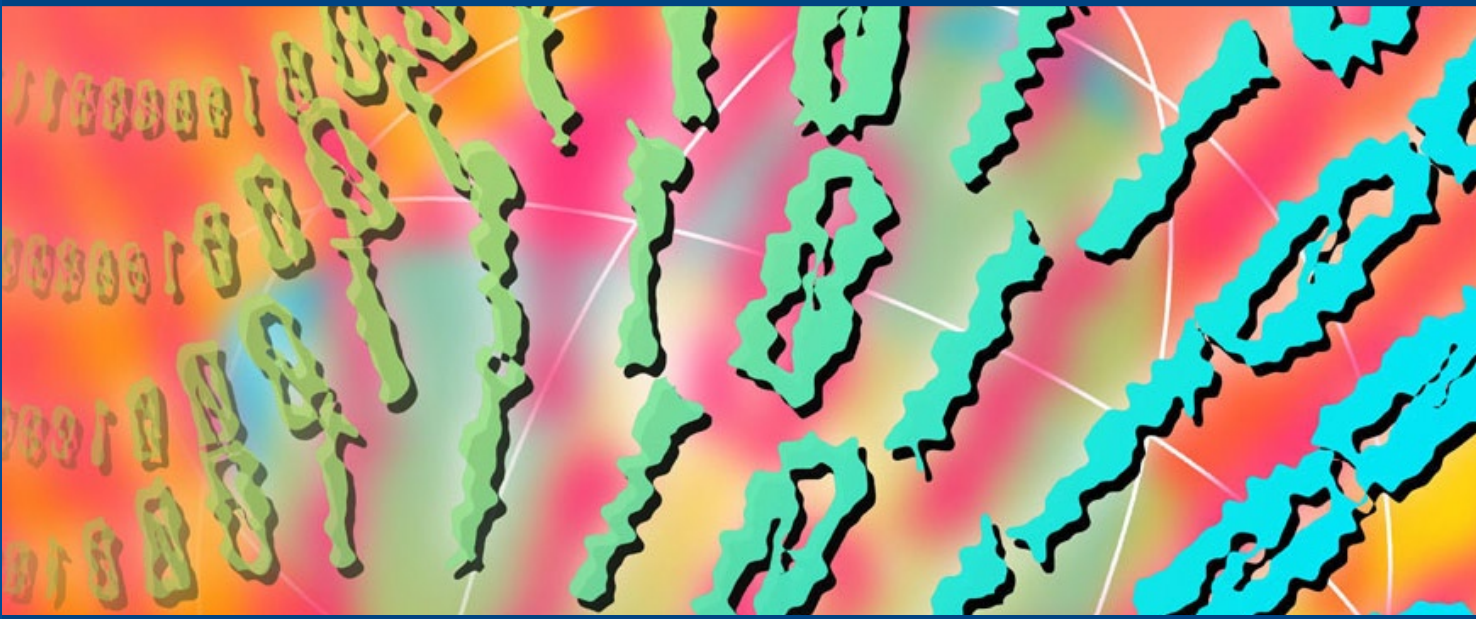


Adabas from Software AG

Philip Howard



an evaluation by

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Fast facts

This report reviews the current state of the Adabas database management system and the continued enhancements that Software AG is applying to it, as well as the company's future plans for its development. Although best known for its main-frame implementations, Adabas is available on multiple open systems platforms including UNIX, z/Linux, Linux Intel and Windows and can move/migrate with a company's changing architecture strategy, as required. The company is thus positioning Adabas as a long-term solution for a company's data management needs.

This year, with the arrival of Adabas 2006, the company is introducing new functionality and extending existing capabilities including real-time replication, multi-media data support, virtually unlimited data storage support, an SOA Gateway and browser-based management facilities.

Key findings

In the opinion of Bloor Research the following represent the key facts of which prospective users should be aware:

- Adabas always provided outstanding performance for OLTP environments (including queries) because of a number of significant architectural advantages that it has when compared to relational technology. That remains true to this day and explains why the Adabas user base is under little pressure to move to a relational environment.
- In order to preserve this state of affairs, Software AG has invested, and continues to invest, in supporting new capabilities on the Adabas platform. These provide facilities comparable to, and in some cases in excess of, those provided by relational vendors.
- With respect to the database itself, there are a number of notable new features in Adabas 2006, including support for unstructured data types such as images, fingerprints and so on; the removal of architectural limits on capacity; new browser-based management capabilities; and enhanced database kernel (nucleus) functionality to support high availability, so that buffer pools, queues and tables can be re-sized without bringing down the database.
- We especially like the SQL Gateway, though we think it is misnamed. Rather than just a way of presenting Adabas data in a relational format so that the data can be retrieved via SQL, this product is much more than that, providing a federated platform for accessing heterogeneous data sources in real-time.
- In addition to the SQL Gateway there is also the SOA Gateway. Many companies are realizing that they need to have an easy way to access data and



logic stored in legacy systems, especially if they are implementing a Service-Oriented Architecture. The Adabas SOA Gateway allows developers to bring Adabas information into an SOA through their familiar environment—including Java/Eclipse, .NET and AJAX—without any previous knowledge of Adabas or the mainframe. The Gateway installs on the same platform that is running Adabas. It requires no client-side footprint, nor does it require any coding by the client-side developer. In the current release, development is based on an Eclipse plug-in, with .NET to follow.

- Software AG has introduced a real-time replication facility called the Event Replicator for Adabas. The product should be able to compete with the best in the market. The change data capture facility supported by Software AG is genuinely real-time, which is not always the case with some other vendors. While it supports heterogeneous capability, this is limited to push environments at present. However, the company intends to implement bi-directional capability in due course. In late 2006, Software AG will introduce a replication product that works with Adabas on Open Systems and, like the Event Replicator for mainframe Adabas, will replicate to any target in real time.
- The partitioning supported by Adabas through its Vista add-on is particularly good, with features that are, no doubt, the envy of many a relational database supplier. For the future, Adabas Vista is being considered as part of a robust Adabas archiving tool to address the problems brought on by the exponential growth in organizational data as well as regulations requiring the retention of data for governance purposes.
- There are a variety of other performance, scalability and availability options as well as migration tools available for users interested in moving platforms.

The bottom line

Software AG has two foci for Adabas in general and Adabas 2006 in particular: performance and scalability on the one hand, and openness and interoperability on the other, though there are other important features of this release, notably the introduction of Adabas Manager and support for unstructured data types. One point that may be worth noting is that performance and scalability enhancements typically (not always) involve improvements to the database itself while openness and interoperability tends to be more dependent on add-on options.

Software AG is clearly doing a good job both in terms of keeping Adabas up-to-date with modern requirements, and in providing new options for its users. Given the performance characteristics of Adabas this should be more than sufficient to keep Adabas users happy, and extending their environments, for the foreseeable future.



Vendor information

Background information

Software AG, founded in 1969, is headquartered in Darmstadt, Germany. While originally making its name with the Adabas database, and subsequently with the Natural 4GL, Software AG is now focused on providing a full range of products and services to deliver a Service-Oriented Architecture (SOA) IT infrastructure, based on its over thirty-five years experience in high-performance databases, application development tools and integration technologies. From this basis the company's technology offers process-driven integration through legacy modernisation and real-time single views of strategic business information.

In an ever challenging market, Software AG is focused on three core offerings:

- **Enterprise Transaction Systems:** this consists of Adabas and the Natural 4GL and associated products. While Adabas is the subject of this report, Natural provides a productive development environment and ease of use, with the ability to build and extend enterprise applications for the Web, SOA and OLTP environments. More than 3,000 large corporations and public sector organizations worldwide use solutions from the Enterprise Transaction Systems' product line.
- **Legacy Modernisation Portfolio:** Software AG provides a range of technologies that open applications to new environments such as the Web, e-business applications and Service-Oriented Architectures.
- **crossvision SOA Suite:** crossvision is a modular suite for SOA management and governance that includes six components: CentraSite (a joint development with Fujitsu), which is an SOA Repository that acts as a web services and SOA asset management platform; crossvision Information Integrator, which provides a federated view across heterogeneous environments; crossvision Legacy Integrator, which provides web service enablement of existing application assets; and crossvision Application Composer, crossvision Business Process Manager and crossvision Service Orchestrator, each of which does what its name suggests.

Software AG web address: www.softwareag.com

Product availability

Adabas runs not just on mainframe platforms (z/OS and variants) but also z/Linux, Linux, UNIX and Windows. However, the mainframe version of the product is typically on a different development cycle than the Open Systems versions. Thus, with Adabas 2006, the latter will not be available until the end of 2006 whereas the mainframe version is available from the end of June. Adabas Manager is scheduled to be generally available from August 2006. Major comple-



mentary products already available include the Adabas SQL Gateway; the Adabas SOA Gateway and Event Replicator for Adabas.

It is also worth commenting on the Natural family of development products. These are not discussed in any detail in this report. However, it is worth appreciating that although Natural and Adabas are widely used in conjunction they can also operate independently. Software AG has customers using Natural to build applications that access DB2 and Oracle databases, for example. Conversely, Adabas today supports other programming languages, like COBOL, Java and .NET and development tools working within these environments may be used to build Adabas applications.

With a commitment to SOA and agile systems infrastructure, Software AG has introduced new capabilities through the Adabas 2006 and Natural 2006 portfolios. Features for Adabas 2006 are discussed in this report. Highlights for Natural 2006 include: Natural Business Services for service-oriented development, an Eclipse-based development environment for Natural, Natural Engineer for refactoring application code to make it service-ready, and Application Designer to create rich internet application environments based on Natural business logic. A detailed review of Natural is separately available from Bloor Research.

Financial results

Software AG has some 2,700 employees world-wide, with subsidiaries and distributors in more than 60 countries. Company revenue in the last reported year, 2005, was €438 million compared to €411.4 million in 2004. Similarly, operating income increased to €96.4 million from €83.9 million over the same period. The most recent quarter (Q1 2006) demonstrates a similar story with both revenues and income continuing to increase, in the former case to €113.8 million compared to €100.3 million in the same period in 2005, and in the latter with an improvement from €18 million to €21.5 million. The Enterprise Transaction Systems (ETS) business line (Adabas/Natural) increased license revenue by 14.5% in this quarter. This improvement in Adabas and Natural license revenue suggests that Software AG has benefited from its focus and delivery on enhanced capabilities and roadmap for these product lines.

Product description

Introduction

This review is not about Adabas per se but of Adabas 2006. Please refer to Figure 1 for an overview of the Adabas 2006 Product Portfolio. That is to say, it is not about providing the details that you might want to see if you were

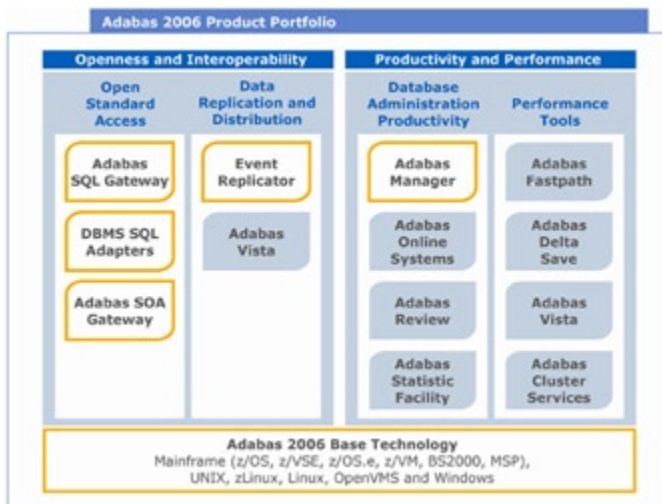


Figure 1: Adabas 2006 product portfolio

considering adopting Adabas for the first time. The truth is that, while we might wish otherwise, Software AG is not going to start selling large numbers of new Adabas licenses as a stand alone database; it does have sales strategies for data management solutions based on Adabas as well as new sales to less developed markets such as the Middle East and Latin America. This review therefore concentrates, not upon the raw capabilities of the database (which we will briefly outline but are otherwise assumed), but on those features that support Adabas within the context of today's modern IT world. In particular, it focuses on why existing users of Adabas should stay with the database and why they might consider upgrading their installation with one or more of the many add-on products that Software AG has introduced or will introduce.

Adabas 2006 is Software AG's database management system, which delivers high transaction throughput (for example, more than 300,000 transactions per second). Adabas 2006 provides:

- A scalable database architecture to support any data type and any data volume;
- A family of data sharing tools to enable interoperability with any other application, DBMS or middleware;
- A single, Web-based interface for the entire Software AG data management environment.

Adabas 2006 offers cross-platform support from the latest mainframe environments to Linux, UNIX and Windows. Adabas 2006 lifts many of the data management and volume limits of previous versions of the product by expanding Adabas storage capabilities, supported data types and enhanced 24x7 availability.

Throughout 2006, new products are planned for introduction as part of Adabas 2006, for example, the Adabas SOA Gateway, Adabas Event Replicator, Adabas SQL Gateway, and Adabas Manager. Again, please refer to Figure 1 where new products are highlighted in orange.



Architecture

Before we discuss the new(er) capabilities of Adabas 2006, it will serve us well to recapitulate on the advantages that Adabas natively offers, such as flexible data structures, data compression and scalability to meet the heaviest transaction loads:

1. **Data design**—Adabas supports repeating fields and (in relational terms) embedded tables. This has two major advantages: first, it performs better because an order is directly linked to its order lines and they can all be retrieved from disk in a single I/O rather than having to be accessed separately. In addition, the database schema is much simpler (thereby making the environment easier to administer and, as a consequence, improving total cost of ownership) when repeating fields are used and you do not get the proliferation of tables that is commonly the case with relational environments. Consequently, you need less hard hardware to store the data
2. **Indexing**—Adabas uses inverted lists for indexing, which are sorted lists of key values. This approach generates less disk I/O than Btrees, for both update and retrieval and is a very flexible structure that caters for both OLTP and query transactions. It is extremely fast for queries that only access index data and is ideal for use with an optimiser. A little bit of I/O to the indexes to find the right set of records saves you lots of unnecessary I/O to the Data Storage records.
3. **Queries**—added to the capabilities of inverted lists is the fact that, unlike the relational model, where access has to be based on a full key, with Adabas you can access data based on a partial field, multiple-fields or, indeed, hyper-fields. This is particularly useful for such things as text retrieval where you only need a specific piece of information. It also saves you unnecessary CPU cycles and I/O for information you don't need.
4. **Compression**—because data is stored in fields rather than tables, in Adabas you can compress data at the field level. This means that you can optimise compression algorithms according to the data type in each field. This is much more difficult to do in conventional relational databases where it is easier to compress at the row level, often resulting in a lowest common denominator approach. The result of these different approaches is that an Adabas database is typically half the size of comparable relational databases, though some of the vendors in this market are starting to address this issue. In Adabas, you can compress the data and the indexes saving an incredible amount of space compared to an RDBMS with the same data.

The upshot of these features is that Adabas has always been a market leader in terms of its performance. That was true historically and it remains true today. Where it lost out was to the concept, rather than necessarily the actuality, of the relational approach; and to the marketing of some of its competition.

The architecture of the Adabas environment is illustrated in Figure 2. However, this shows little that we have not already discussed or what you would expect,

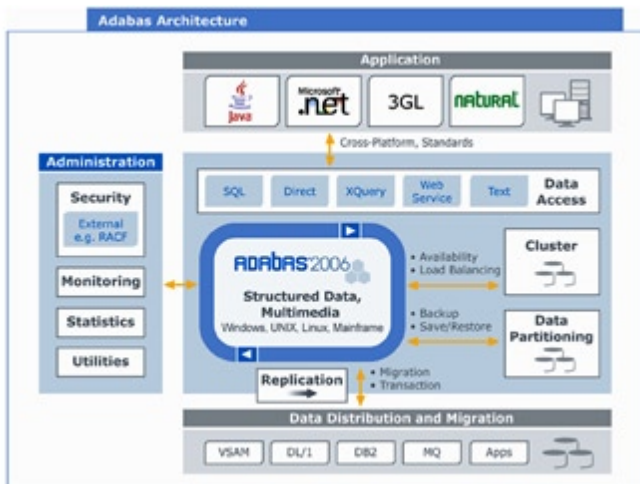


Figure 2: Adabas architecture

except the data access support provided. Note however the support for unstructured multi-media data, which has been introduced in the Adabas 2006 release. Previously, the only way that you could associate Excel spreadsheets, PowerPoint presentations, images, AVI files and so on with the database was to either store these as BLOBs (binary large objects) or as external objects with relevant pointers being held within the database. Now, with Adabas 2006, the database supports data types for this multi-media data, with the database being capable of storing objects of these types up to 2 Gb.

As far as data access is concerned, those not familiar with Adabas might be surprised to learn that it has supported SQL for more than a decade. On the other hand, support

for Web services and, particularly, XQuery are much more modern; in the case of XQuery (which reuses technology built for Software AG's Tamino XML Server) being in advance of most of the leading relational databases, though this is perhaps not surprising from a company that has such a detailed knowledge of XML.

It is also worth commenting on the security provided by Adabas. This provides the ability not only to secure data at the file and field levels, as you would expect, but also down to individual values, which is not something that is common, even in the most advanced relational databases. As can be seen in Figure 2, external security systems such as RACF, ACF and Top Secret are also supported.

However, the Adabas 2006 environment is not just about the database itself, but also about the add-on products that extend the database environment. These fall into two categories, which emphasise:

- Openness and interoperability—open standard access and data replication and distribution.
- Productivity and performance—performance tools, availability and scalability, system management and platform migration.

We will discuss each of these in turn.



Openness and interoperability

Open standard access

The major data access products are the Adabas SQL Gateway and the Adabas SOA Gateway. However, before discussing these, it is worth noting the efforts that Software AG has made with respect to its standard access technologies. Arguably, the main reason why relational technology won out over prior database types was that it guaranteed a separation between the application on the one hand and the database on the other (meaning that the former did not need to know about the latter), which was not the case with navigational and hierarchical databases. Thus, the fact that Adabas supports XQuery, SQL and Web services access independently of the database effectively levels the playing field. Moreover, these access mechanisms are supported without any programming requirement.

Adabas SQL Gateway—this product is not very well named. Yes, it provides a gateway into the Adabas environment and presents Adabas data to outside environments as if it existed in relational tables, so that you can use that information in business intelligence tools, for example. However, it also does a great deal more than this.

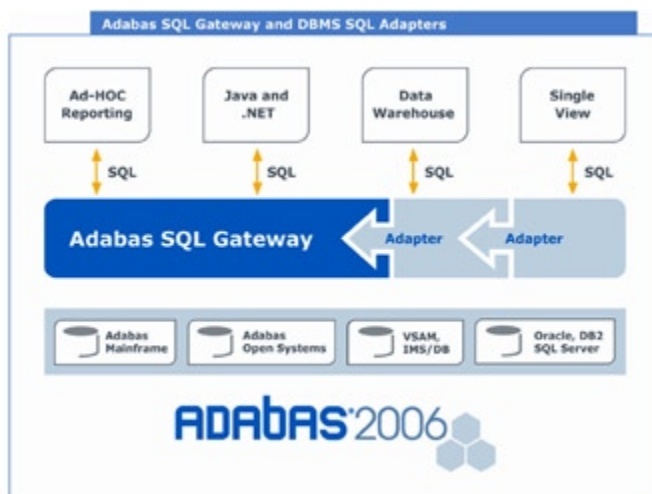


Figure 3: SQL Gateway architecture

The relevant architecture is shown in Figure 3. As can be seen, what this family of SQL Gateways for RDBMS, VSAM and Adabas allows you to do is to define queries against heterogeneous data sources. Updates are not supported to third party databases at present though this is planned for the future.

In other words, the SQL Gateways actually provide a data federation platform that would be suitable for use, together with an appropriate BI tool, for building EII (enterprise information integration) applications that provide real-time query capabilities against live data sources, optionally with the inclusion of data from back-end data warehouses as well. In this capacity, the SQL Gateway is view-based (that is, you create something that is analogous

to a database view) and cross-platform joins are supported as shown. Note that some users of EII products prefer a more metadata-oriented approach in which the user constructs a virtual schema upon which views are based. Software AG's crossvision SOA Suite provides the solution to support this approach through its crossvision Information Integrator offering. crossvision Information Integrator's approach to information integration is that it provides users with a real-time, single view of information from disparate data sources across and beyond the enterprise. This offering dynamically aggregates disparate data, which is accessed by users through a standardised business information model.

The other, complementary use of the SQL Gateway product is to create a single view of, say, a customer or supplier. For example, you want to be able to provide consistent information about customers to salespeople, call centre staff, support

personnel and so on; and this view can be created using this technology. However, it should be noted that in order to minimise the load on front-end systems (which you do not want to be forever querying) it will be useful to employ this functionality together with one of the Adabas caching options (see later), so that you can serve queries from the cache rather than having to go back to the source. Event Replicator for Adabas provides an alternate solution to allow for a replicated database, potentially on a lower cost platform, to offload queries from the production database.

In addition to the Adabas SQL Gateway, Software AG also sells SQL adapters for other DBMS', such as VSAM, Oracle, DB2, Sybase and others. These adapters can be used in a heterogeneous DBMS environment and enable a query to do a federated read or update across multiple disparate data sources.

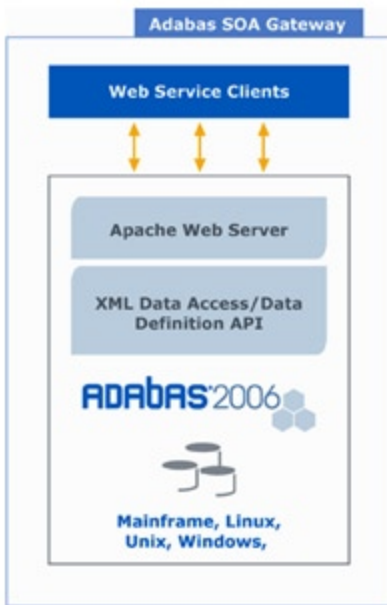


Figure 4: Adabas SOA Gateway

Adabas SOA Gateway—this gateway is designed to allow Adabas to act as a Web service provider or consumer. The most important point to note about this product is that the database is completely hidden from the developer and requires no knowledge of Adabas. That said, the database administrator will need to set up appropriate database views that the Gateway can access. Please refer to Figure 4 for an overview of the Adabas SOA Gateway.

The environment provided is Eclipse-based (a .NET version is planned for release in 2H 2006) and what you do consists of four steps: first, you define your data source—which is simply a question of making a selection with a single click: next, you build your service, for which an Adabas browser is provided that supports the mapping of Adabas file definitions and other metadata to XML via a wizard, which generates Adabas operations (create, read, update and delete) as web services. This is automated and requires no programming. The following step involves the deployment (registering your service in a relevant directory such as CentraSite) and testing of your service, with testing being done within the Eclipse environment. Finally, there are facilities provided to browse UDDI repositories

and view the web service methods and parameters, and you can call the web service via HTTP from any appropriate platform.

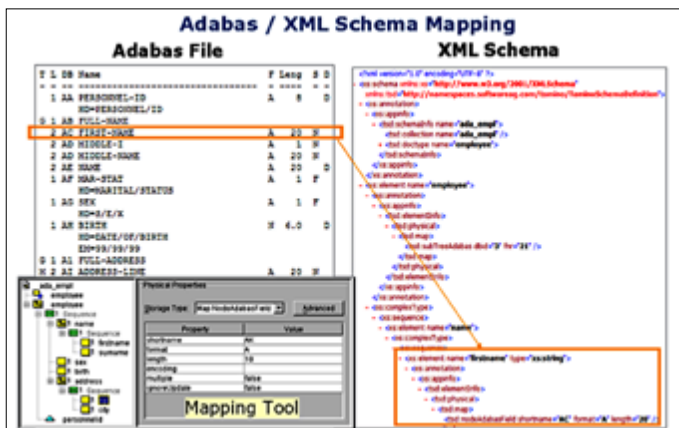


Figure 5: Adabas / XML schema mapping

The SOA Gateway runs in a J2EE application server (JBoss, WebSphere or WebLogic) and there are browser-based administration, deployment and monitoring tools provided. Primarily, the function of this product is to support XQuery access into an Adabas database, so that any application that knows XML and HTTP can access an Adabas database. To do this you need to map from Adabas files into an XML schema, and Software AG provides a mapping tool for this purpose, as illustrated in Figure 5. Again, no programming is needed.

Data replication and distribution

There are two products in this category, which we will discuss in turn.

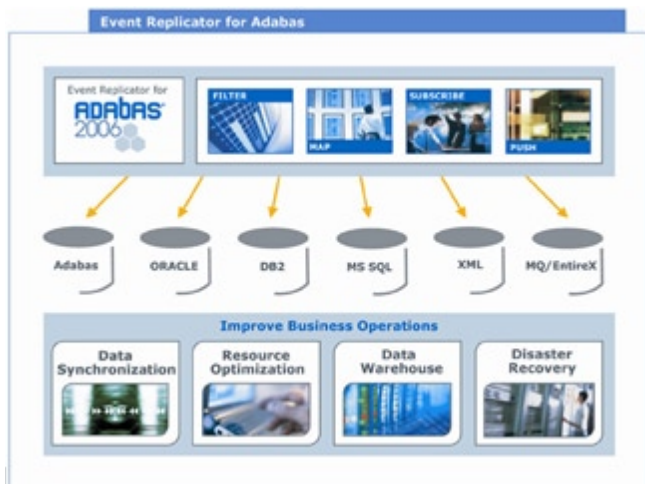


Figure 6: Event Replicator for Adabas

Event Replicator for Adabas—of course, Adabas has supported replication for a number of years but Event Replicator for Adabas does significantly more than the database's native capabilities. In particular, the Event Replicator provides real-time capabilities, using change data capture, to support business requirements for data synchronization from Adabas to other business systems, data warehousing and business reporting, disaster recovery and resource optimization by replicating data for heavy query requirements to a lower cost hardware platform. See Figure 6.

As can be seen in Figure 6, there are four core aspects to this product; the ability to filter, map, subscribe and push. A GUI tool allows the administrator to define subscriptions, which can be customized according to your business

needs with multiple subscriptions, filters and destinations. The Event Replicator can publish data to one or multiple target destinations, from Oracle and DB2 to MS SQL server and message queues.

Like most other replication technologies, this works on the basis of committed data; however, with Adabas, only the fields that the user has subscribed to are captured and transmitted, rather than the whole record—as may be imagined, this can have a significant impact on performance.

Two further major points about Software AG's replication is that it plans to support publication to XML as a target (as opposed to a mechanism to support message queuing) in a subsequent release. Secondly, the company's plan is to implement two-way replication with third party databases in due course, so that this will become a general-purpose product.

The ability to quickly replicate data in real-time is very important to today's real-time services industries—hotels, airlines, telecommunications and parcel delivery companies, for example. More or less every critical analytic application, reporting function, web service, back-up and disaster recovery system and client application of these companies relies on accurate and fast availability of data. If a database performs poorly, every aspect of IT—and therefore every aspect of their business performance and customer service—is negatively impacted. Because most of these operations today are time-sensitive, they require the availability of data as soon as any change is made. These real-time services industries cannot operate in batch mode—batching and uploading operational data at some specified time of day is simply not an optimal way to handle operational data. Rather, these kinds of real-time organizations require around-the-clock uptime and real-time data availability to run their organizations effectively. They must have the ability to track, store, update and rapidly deliver information. They must have systems that can handle huge volumes of data, hundreds of thousands of real-time transactions and thousands of concurrent users.

Adabas Vista—this is a tool to manage partitioning, which is a feature that is a particular strength of Adabas. What it allows you to do is to partition by a variety of different logical criteria. For example, you might want to partition by geography

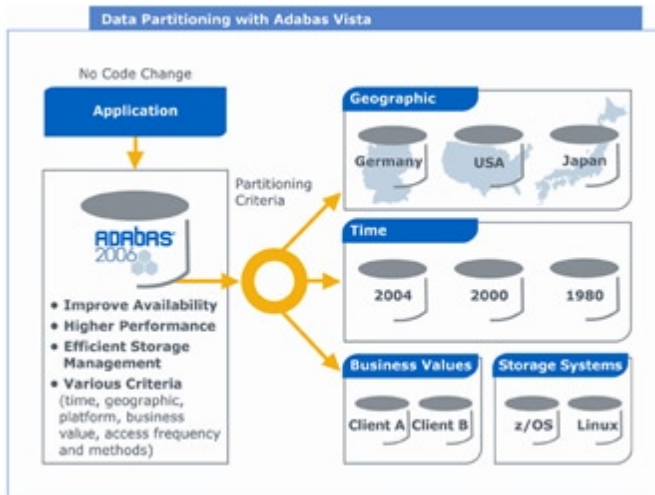


Figure 7: Adabas Vista data partitioning

with data for different countries stored separately. Or you might want to do so by year, according to business values (name of customer, size of customer and so on) or by storage system (for example, different partitions under z/OS or Linux). In addition, you can combine these criteria, nesting one inside another. In practice, Adabas supports both physical and logical partitioning as shown in Figure 7. Moreover, you can nest criteria if you wish so that you could have geographic data nested by storage system, for example.

Vista is a tool specifically designed to support data partitioning, providing the necessary facilities to map this logical structure to the physical data structures in use. Note that whatever the partitioning scheme in place there is no impact (no coding is required) on the application program at the front-end.



Productivity and performance

Performance tools

While the standard Adabas 2006 offers all the necessary components to run an efficient and successful environment, there may be specific requirements where one or more of the Adabas add-ons can provide a significant enhancement. For example, caching comes as a standard feature of Adabas. However, there are two additional and optional caching products provided by Software AG, **Adabas Fastpath** and the **Adabas Caching Facility**, where the former is about speeding up application performance and the latter is about improving database performance. Thus Fastpath implements a cache close to the application while the Caching Facility implements a cache on top of the database's buffer pool. Both products reduce the number of I/Os necessary to read from disk and therefore improve performance and, once again, neither has any impact on application programs. Typically you choose to use Fastpath when you are trying to reduce CPU usage on the database related to application calls and the Caching Facility if you want to reduce I/O against the database index and storage components by caching frequently read indexes and data.

The remaining performance option is **Adabas Delta Save**. This is used to speed up the process of taking back-ups and any subsequent recovery. It allows you to save just the changes (deltas) that are made to the database rather than requiring the whole database to be backed-up. In addition, it lets you maintain a back-up database copy of your production database by applying the Delta Save back-ups from the production database to a 'shadow' database. There is also a facility to take interim back-ups and merge these to form a complete back-up.

Availability and scalability

There are two major enhancements that Software AG has made in this release that pertain to availability and scalability. In the case of the latter, the company has removed the architecture limits on Adabas: you can now have a virtually unlimited number of extents for both logical files and physical databases. In previous versions of Adabas, the limit on both of these was a maximum of 5. The removal of these limits also obviates the need to re-organise the extents during production hours. In the case of repeating fields, the limit on occurrences has been increased from 191 to 65,000 and records may now span multiple physical data storage blocks to support the expanded limits on repeating fields.

With respect to high availability, new database kernel (nucleus) functionality provides the ability to re-size buffer pools, queues and tables without bringing down the database. In the future, the company plans to extend this capability to user queues: so that if the queue is not big enough then extra memory will be automatically allocated on a temporary basis, with a notification sent to the DBA so that the standard size can be changed next time the system is down for maintenance, if appropriate.

Both the availability and scalability options involve the use of parallelism with **Adabas Parallel Services** providing support for SMP architectures, enabling execution on Adabas servers on each processor within an SMP system, with servers sharing memory and accessing the same physical files, and with automatic load balancing across the environment. **Adabas Cluster Services**, on the other hand, has been designed to take advantage of IBM's Parallel Sysplex architecture, running under z/OS for full 24X7 database operation. It allows up to 32 Adabas servers to be executed within a cluster so that there is no single point of failure.

System management

Shortly after the release of Adabas 2006, Software AG will be making Adabas Manager available. Figure 8 is a screenshot illustrating the product. For anyone familiar with the previous (antiquated) 3270 administration screen there is no comparison. Moreover, the browser-based Adabas Manager will offer a single point of administration (as opposed to the current multiple points) for all Adabas instances regardless of the platforms on which they are running.

In the future, this will also act as the central management console for add-on products such as Event Replicator and others. Adabas Manager will reduce total cost of ownership as it makes the administration of multiple environments simpler and more convenient. It will no longer be necessary to start up a different tool for each and every add-on. From this interface, Software AG customers will be able to access not only various products but also different operating system platforms. Adabas Manager will enable DBAs to administer Adabas remotely—via the Internet or, later, via any other emerging communication technology, such as WAP. In its final stage of development, Adabas Manager will provide a single point of administration for both mainframe and open systems environments.

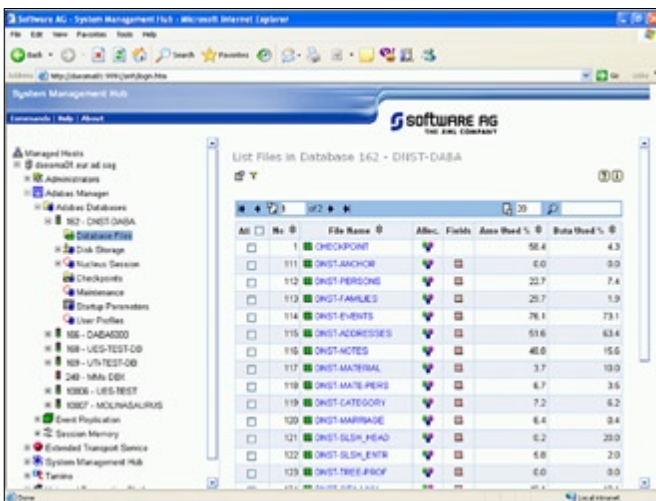


Figure 8: Adabas Manager

Platform migration

This area represents an opportunity for Software AG. While in most cases, Software AG will recommend that customers keep Adabas on the mainframe for the highest performance and scalability, low total cost of ownership and overall value, there are cases where platform migration makes business sense. Solid reasons for customers to migrate fall into the following categories:

- Costs of operation escalating
- Lack of skills
- Platform and application consolidation
- Platform vendors forced to move to a new operating system.



For one or several of these reasons, some customers require help in moving their legacy applications to UNIX, Linux or Windows platforms. Software AG's migration offering includes services and products tailored to customers' needs. Based on fifteen plus years of migration experience, Software AG takes a full lifecycle approach when designing a solution for a customer. Each migration stage includes multiple, detailed steps, from developing solution blueprints and a project roadmap to testing, training, knowledge transfer and ongoing support. A complete assessment, including identified dependencies and project milestones, is provided to the customer, evaluating their business and IT needs. Software AG also helps its customers determine their best platform option, making recommendations on capacity planning, feasibility prototyping and test and approval procedures built on a customer's specific needs and requirements. Once the assessment is complete, Software AG provides implementation services—detailed technical interviews are conducted, data migration is designed, the solution interface developed and products installed or replaced. Deployment includes training, mentoring and measuring results.

Software AG products used during migration services may be Natural Engineer, Adabas Analyser, and two products, Adabas Bridge for DL/I (for IMS/DB migration) and Adabas Bridge for VSAM (for VSAM migration). In the case of IMS/DB the Bridge converts a DL/I request into an Adabas call, while there are also tools available to help the user move the data from the IMS environment to Adabas. One of the significant advantages of such a migration is that you can now use Adabas' SQL and XML capabilities to access the data that was previously in the IMS database.

The situation is slightly different in the case of VSAM, because Adabas supports native calls into the VSAM environment anyway, so there is no need to convert from VSAM requests to Adabas calls. However, what the bridge allows you to do in this situation is to combine Adabas and VSAM data into a single environment, so that a single request can access data in both environments.



Product futures

While we have considered a number of Software AG's plans for the immediate future, the following list details some further areas that the company expects to be focusing on:

- For 2007, Software AG is developing an Adabas archiving tool that will allow customers to archive mainframe data quickly and easily to other platforms and in other formats for governance and auditing purposes, and to reduce costs and improve performance on the production database.
- The company is also evaluating a package that includes Adabas on Open Systems platforms, the Adabas SOA Gateway and a new search engine for Adabas as an offering for a web database; capable of storing any type and volume of data along with easy search and retrieval methods.
- Software AG continues to focus on customer-driven innovation based on direct customer feedback. Ideas and requirements for product changes and enhancements from customers continue to be critically important to Software AG. For example, the company recently re-designed its whole Change and Enhancement (CE) Process from the customer's viewpoint. Two major aspects that underwent improvement were the Submission Process and the Follow-Up Process. These processes are now coordinated through Software AG user group organizations: customers submit an Enhancement Request (ER) online through Software AG's support system, ServLine24. It is assigned to Software AG Support where it is reviewed for clarification and duplicate entries. Once an ER is accepted an Enhancement Proposal is created. All customers are able to view Enhancement Proposals through ServLine24. Other customers can add their own remarks and comments. At this point, user groups take over responsibility for Enhancement Proposals from the perspective of voting. User group leaders identify Proposals belonging to their group and make presentations to the group for voting. If a Proposal is voted to move forward, the online Change Enhancement system is updated accordingly. If an ER is rejected by the user group it is given the status 'User Group Rejected'. Once an Enhancement Proposal is voted forward, Software AG Product Management and Development reviews it and either rejects or accepts the enhancement. Updates all occur online and customers can access information for all ERs and Proposals via ServLine24.



Summary

The strategy that Software AG has embarked on is a sensible one. The development of extended facilities for the database keeps users happy by providing the sort of facilities that a modern data centre requires. With the functionality that Software AG is providing, both now and in the future, we see no good technical reason why an Adabas user should consider moving to another database. On the contrary, investing in an existing Adabas environment makes much more sense for existing customers. Indeed, with Software AG's emphasis on opening Adabas to any environment through XQuery, Web Services and SQL, together with its ability to push data from Adabas to any environment in real-time, Adabas provides comparable, if not better, capabilities to other modern and progressive databases.

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- Communicate our visionary perspective of the future of IT.

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Suite 4, Town Hall, 86 Watling Street East
TOWCESTER, Northamptonshire, NN12 6BS, United Kingdom

Tel: +44 (0)870 345 9911 – Fax: +44 (0)870 345 9922
Web: www.bloor-research.com – email: info@bloor-research.com

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