Production safety in the graphic industry

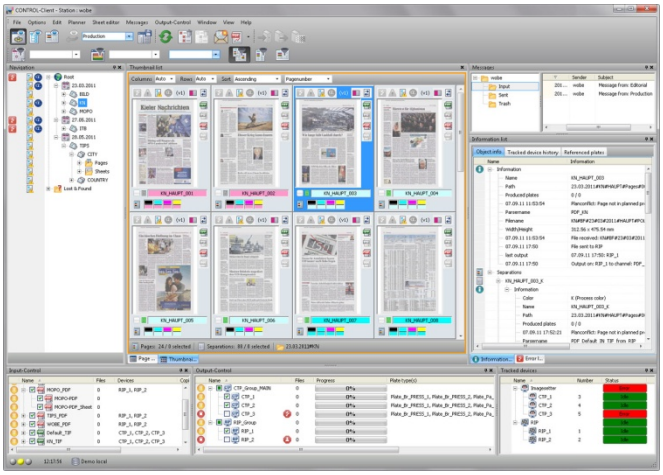
Firebird SQL case study

Company portrait

wobe-systems GmbH is a software development house for the graphics industry. In particular the special requirements of commercial newspaper production are covered by our products. Founded in 2001 wobe-systems GmbH took over development of solutions formerly produced by wobe-team GmbH (founded 1999) and has been steadily enhancing the software since then. We therefore can look back on more than a decade of successful development with FirebirdSQL database.

Our products for workflow management, quality assurance and integration with systems of various Press manufacturers, CTP platesetters and bending machines for printing plates are hosted on Microsoft Windows based servers. State of the art hardware is used on the server-side often including Microsoft Cluster technology, Direct Attached Storage (DAS), Storage Area Networks (SAN) or virtual environments.

Objectives



Newspaper production requires processing a large amount of digital image data within a short timeframe. To meet the objectives of handling for instance large TIFF files with resolutions up to 2500dpi and sizes ranging in the 1,5 square foot area in a bearable amount of time we decided upon creating an architecture that allowed us to distribute the computing processes on a scalable number of servers. As the net processing time per file was quite high we also needed a system that allowed parallel processing. In our architectural decisions we were faced with two key challenges:

- Problems storing files in the regular file system with parallel read/write access to the same file (especially writing) had to be avoided.
- Accessibility of production data and meta information throughout a LAN environment possibly having multiple segments.

Using the transaction system provided by database servers seemed a natural choice for this type of requirements. The database was intended not only to supply the storage of the meta information but also for the binary data.

Solution

Two key requirements led to choosing Interbase and subsequently Firebird SQL as our core database engine:

- With Interbase we were given the ability to process and store BLOBS (large binary objects like image data) fast and reliably. At that time storing files in the regular file system and giving access to them via network shares was the preferred method of comparable software. Databases were considered to be unsuitable for managing binary data. Our tests showed that reading files from the database was not impacted by any performance penalty compared to reading them directly from the file system. Write throughput was slowed down only slightly. Thus the requirement of network wide accessibility and transactional isolation as well as durability could be met. A production database of 100 GB and more containing BLOBs is nothing unusual at our customers sites.
- Firebird offered an event notification mechanism that allowed signaling processing operations on the server to client applications. Implementing automatic refreshes on the client side without constantly polling the database was greatly simplified by this.

Conclusion

Firebird SQL server is at the core of our system helping our customers swift and safely through their daily work. Equipped with near zero administration and ample possibilities of scalability Firebird SQL database offers an operational reliability that does meet the requirements of industrial and time critical applications.
It is well worthwhile to fund the Firebird Community instead of spending the same amount purely on licensing cost for deploying a database engine. Furthermore the organizational structure of the Firebird Foundation provides an important protection against change of licensing or even product abandonment.

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