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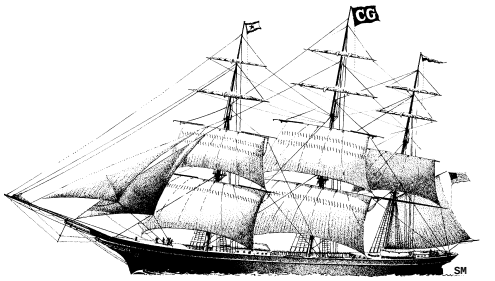

Navigating Information Technology Horizons℠

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Availl's WAFS — Long-Distance File Access, Sharing, and Protection

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Management Summary

When the American revolutionary John Adams was in Europe promoting the cause of independence, the reports he sent to Congress in Philadelphia and the letters to his wife in Boston took up six months to cross the Atlantic Ocean. There was no such thing as *real time* in the 18th century. Unless people were sitting in the same room, communication and collaboration happened more slowly. It took an especially long time for information to flow over great distances. Imagine what a round-trip delay of one year did for John Adams' ability to collaborate with Congress on foreign policy decisions!

Today, global communication networks operating at light speed seem to make the world very small, as if we are all in the same room. You can call a person in China or Sweden and hold a real-time conversation. You can send an e-mail with an attached document to a recipient in New York or Bangkok, and it will arrive in seconds or minutes. It is astonishing in light of history.

Yet for all this speed, enterprises with remote sites still face challenges in accessing information over distance:

- **Data distribution** – Workers in different locations need to access the same information,
- **Data consistency/coherency** – Workers everywhere need to see the most current information instantly, even as it continually changes, and
- **Latency** – The speed of light is finite and causes delays in data transfer. It takes about 43 ms (not counting hardware latency) for data to travel round-trip across the continental U.S., which can slow user access to unacceptable levels, since computer transactions and communication protocols involve a lot of "chatter" or back-and-forth communication.

In other words, how can everyone access and modify the same information as changes happen in real time from anywhere? **Software vendor Availl has a 100% software product called *WAFS* or *Wide Area File Service* to do just that. It effectively creates a Windows file system that spans any number of sites and replicates changes among them in real time.** In this way, each site always has a current copy of data and users access it at local speeds. Moreover, WAFS protects any amount of data by continuously replicating changes to a central site, where it can be copied and backed up, and prior versions stored.

The world has made astonishing advances in communication and collaboration in the last 200 years, but it is not yet perfect. Availl WAFS takes it another step forward. Read on for the details.

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Availl WAFS

Availl of Andover, Massachusetts, has developed software technologies for overcoming distance, latency, and coherency in data access. Its primary product is Avail *WAFS* or *Wide Area File Service*, a term now commonly used to describe solutions for remote file access and sharing. This product effectively creates a file system that spans any number of sites and over any distance. It keeps a full copy of data at each site and continually mirrors changes among them in real time. In this way, all users experience local access performance. WAFS sends only changes and minimizes traffic between sites. It also manages security, coherency, and file locking.

Availl WAFS is a solution for *Windows* file servers. It consists of software on a central server and agents that run on each distributed file server. Additional details follow.

Transparency

Upon installation, WAFS runs as a service in the background and is transparent to both users and IT administrators. Users access files as they normally would on a local Windows file server – nothing changes. Performance is equivalent. Administrators set access permissions and security in the normal way.

Fast Access

Availl WAFS employs several technologies to deliver fast access to data.

- Since it keeps a full copy of data at each site, users do not experience delays associated with wide-area connections when they need access,
- As users create or modify files, even complex files like CAD, WAFS automatically updates other sites in real-time to keep data current, and
- It sends metadata first and streams file content behind, so new files appear at all sites immediately. A user can open and use a file before it has fully arrived.

Storing a full copy of data at each site is different from other technologies in this category, which store data centrally and send it to remote sites upon access or by caching a portion of it locally. Availl's approach provides the best performance – nothing beats local access. The tradeoff is a greater consumption of storage capacity, though ATA drive prices are so low that many enterprises would consider it insignificant compared to the performance benefits.

File Locking and Coherence

WAFS manages file locking and coherence in the central server. When a user opens a file, it is guaranteed to be the latest version everywhere. Only one user can modify a file at a time; all others are limited to read-only access during that period. Again, any changes are streamed to the other sites, even while the file is open.

Bandwidth Efficiency

Availl WAFS employs several technologies to speed file transfers and use bandwidth on wide-area links more efficiently.

- It only sends file differences at the byte level, not whole files,
- It then compresses the data, and
- It accelerates the communication protocol acceleration and minimizes "chatter" or back-and-forth acknowledgements.

Availl claims this combination of techniques cuts bandwidth consumption by 95% or more. In addition, WAFS runs over any communication link, whether virtual private networks (VPN) or standard Internet connections. It does not require a special firewall configuration since it operates over http and https.

Security

Availl WAFS also encrypts data before transfer, to keep it from falling into the wrong hands.

Consolidated Data Protection

Data protection in a distributed environment is a challenge because backup processes at branch offices are often inadequate. These sites may lack skilled administrators, procedural discipline, and/or the best technologies, thereby exposing valuable enterprise data to loss. However, WAFS can consolidate files to a central location where IT staff may properly protect and back it up. Since it continuously streams changes and can keep prior versions of files available according to policy, it provides continuous data protection. It can create point-in-time copies too.

The list price is $1,495 per file server. Availl claims hundreds of customer deployments, including 12 of the Fortune 100, suggesting it is field-proven.

Benefits to the Business

Many enterprises are distributed regionally, nationally, or globally. The ability to access, share, and protect files over distance offers real business benefits:

- **Enhanced productivity** – Business operations depend on information access, especially for enterprises whose primary production factor or product is knowledge (e.g., financial services, engineering, law, medical research, etc.). Fast access to up-to-date data worldwide boosts productivity and collaboration. It makes the wheels turn faster, so to speak.
- **Lower communication costs** – Wide-area communication is a costly item in the IT budget. WAFS' ability to cut traffic by as much as 95% means enterprises can use smaller, less-costly connections.

Conclusion

As absurd as it may sound, we are stuck with the limitation of the speed of light in remote communications. However, **Availl WAFS is a good solution for overcoming the challenges of distance and latency.** The software is easy to install and relatively inexpensive. If your distributed enterprise is challenged by file access, sharing, and protection over distance, consider it.

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Michael Fisch **is Director of Storage and Networking for The Clipper Group.** He brings over ten years of experience in the computer industry working in sales, market analysis and positioning, and engineering. Mr. Fisch worked at EMC Corporation as a marketing program manager focused on service providers and as a competitive market analyst. Before that, he worked in international channel development, manufacturing, and technical support at Extended Systems, Inc. Mr. Fisch earned an MBA from Babson College and a Bachelor's degree in electrical engineering from the University of Idaho.

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