



Fluid Data Architecture

Transforming Government Data into a Strategic Asset

What is Fluid Data Architecture?

Fluid Data is a unifying storage architecture designed to automatically and intelligently optimize data throughout your agency. The result: a shift in focus from daily administration and firefighting, to innovation and enhanced citizen services.

Intelligent technologies actively and automatically manage data throughout its lifecycle based on type of content and value of the content to the organization. Ideal data management solutions optimize resources and ensure data is available when and where it is needed.

Why is Fluid Data Architecture Needed?

State and local government agencies have not been immune to changing consumption models or the dramatic increase in the volume and types of data that must be efficiently and securely managed. For maximum benefit, data should be managed differently depending on its value to the organization. The current economic crisis has challenged government IT to look for new approaches to data management that enable them to meet constituent needs while conserving IT resources and containing expansion costs.

Increase in data volume. The data collected by enterprise information systems is a critical asset to enable citizen services and other programs to run smoothly. Agencies collect, archive and manage unprecedented volumes of digital information, including local government websites, surveillance video, DMV records, medical records, digital forensic evidence and GIS mapping data, just to name a few.

Government IT must provide quick, secure access to data while preserving it for business continuity. They must also satisfy regulatory requirements for managing and archiving public data and official records. Adding to the challenge, some records must be securely retained for many years or in perpetuity and still be easily accessible when needed.

The value of data. State and local government agencies leverage the value of their collected business intelligence to inform and support their decisions. Effective data management drives efficiencies, improving productivity as well as service to the public.

But all data is not accessed the same way, and therefore should not be stored the same way. Fluid Data architecture actively classifies and migrates data, automatically moving it between tiers based on actual usage. This dynamic process



ensures data management remains aligned with evolving organizational needs on an ongoing basis.

Budget and resource constraints. IT staff must meet these data challenges in an unforgiving economic environment. Organizations face ongoing pressure to control costs by reducing expenses and staffing.

Benefits of Fluid Data Architecture

Fluid Data architecture addresses many of the problems associated with ever-growing government storage infrastructures by:

- **Automating data management** tasks, such as virtualized storage provisioning and policy-based data migration among storage tiers
- **Optimizing storage resources**, storing more data with less hardware and aligning with application requirements
- **Scaling seamlessly** when capacity needs increase
- **Incorporating data protection** at the core of the storage infrastructure

Automating data management. By automating data management, storage performance improves, disk utilization is maximized and archived data is quickly accessible. This increases IT efficiency and reduces management costs, enabling IT staff to focus on strategic initiatives, not rote data management tasks.

For example, automated tiered storage moves data to the optimal tier based on actual use. The most active data

migrates to high-performance drives (such as SSD, 6Gb SAS or Fibre Channel), while infrequently accessed data resides on lower-cost, high-capacity drives (such as SATA and NLSAS). The result is network storage that aligns with application needs.

Optimizing storage resources. Technologies such as deduplication and compression save storage space and optimize storage resources across tiers, and application-aware solutions coordinate integration among applications, operating systems, hypervisors and the storage layer.

Optimizing infrastructure enables government agencies to reduce hardware acquisition costs, as well as power, cooling, real estate and data management expenses.

Seamless scalability. Many traditional storage technologies force users to guess at data capacity and performance requirements for the expected life of the solution. Over-estimating leads to unnecessary purchasing costs and operating expenses; under-estimating results in expensive future “forklift” upgrades.

The best strategy for scaling storage infrastructures is to buy what you need now. The Fluid Data architecture scales seamlessly when more capacity is needed, preserves existing infrastructure investments and eliminates disruptive data migrations.

Data protection. Storage problems that disrupt business operations cause lost revenue and dissatisfied citizens. To eliminate this risk, intelligent technologies incorporate simple, cost-effective data protection at their core. This allows the IT organization to define the appropriate levels of security, business continuity and disaster recovery.

Who’s Doing It?

South Carolina Office of the Attorney General. The four-person IT department at the South Carolina Office of the Attorney General (OAG) supports 180 staff. The OAG has nearly 8,600 cases open at any given time, and criminal case data retention regulations require retention of case-related information for 25 years. Data storage capacity was running low, hindering productivity. For example, IT staff periodically asked users to clean out their email inboxes. Inevitably, a deleted email was needed again, forcing the team to perform a time-consuming tape recovery.

The OAG implemented storage that automatically retains and manages electronic case data — including voicemail, email, faxes and documents — by identifying and moving data between tiers of storage based on frequency of access. High-demand data relevant to active cases is the most readily available, stored on high-performance drives. As cases expire, they are moved to more cost-effective drives.

Results:

- \$40,000 annual savings with automated tiered storage
- Up to 50 percent faster performance for frequently accessed data
- 92 percent reduction in storage management time for IT staff

Gaston County, N.C. Gaston County’s direct-attached storage solution was no longer providing efficient support of critical applications and services. IT staff spent 95 percent of its time on management and maintenance issues, trying to keep 1,000 users connected at 25 different sites. More than half of its 40 Windows-based servers were obsolete and disk failures were commonplace. Gaston County replaced its storage system with storage based on a Fluid Data architecture; implemented a reliable disaster recovery plan and consolidated 85 applications.

The new system automatically reacts to changing data requirements and is application-aware, allocating storage volumes without consuming physical capacity until data is written by the application. This allows staff to respond to space needs without over-purchasing storage capacity — especially important for a newly-upgraded geographical information system that grows and shrinks rapidly.

The county also uses automated data tiering to move the most active data to the fastest drives, delivering the highest performance to the applications in highest demand.

Results:

- IT staff is about 40 percent more productive
- Reduced administration saves more than \$50,000 annually
- Enterprise capabilities lead to \$512,000 in user productivity gains
- \$65,000 saved in hardware costs and downtime
- Cost-effective disaster recovery ensures compliance with legislation

Resources

White Paper: Dell Intelligent Data Management, <http://i.dell.com/sites/content/shared-content/solutions/en/Documents/intelligent-data-management-dell.pdf>

Case Study: South Carolina Office of the Attorney General, <http://www.compellent.com/Resources/Customer-Stories/By-Industry/Government/South-Carolina-OAG.aspx>

Case Study: Gaston County, N.C., http://www.compellent.com/~media/www/Files/Case_Studies/GastonCounty.ashx



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