



### Key Benefits

- Freedom to choose the storage technology that best meets the needs of the business
- Migrate data without service disruption or reconfiguration
- Tier storage automatically, reducing storage costs and backup windows
- Replicate data efficiently and cost effectively, ensuring data protection and availability
- Load balance demand dynamically, optimizing application performance
- Improve aggregate storage utilization
- Provision and decommission storage without disruption

## FreedomFabric™ Network Operating System

### A powerful, multi-service intelligent file virtualization operating system

#### The Challenge: Managing Unstructured File Data

Today's storage environments are complex, inflexible, inefficient, and expanding... fast. As the volume of unstructured data continues to skyrocket, enterprises are actively searching for new solutions that will help them efficiently manage file data while still keeping storage costs in check.

F5 FreedomFabric network operating system software, a vital component behind F5's award-winning intelligent file virtualization solutions, enables enterprises to break free from the constraints of today's file storage infrastructures. This innovative technology simplifies the way file data is accessed, moved and managed by automating storage management tasks and eliminating the disruptions associated with those tasks.

In addition, FreedomFabric software removes many inherent barriers to infrastructure change by eliminating vendor lock-in and giving businesses the freedom of choose file storage technologies that best meet their business and IT requirements.

#### Freedom from File Storage Constraints

F5 FreedomFabric network operating system software simplifies file storage management by:

- Decoupling the logical access to data from the physical location of that data through file virtualization;
- Enabling the enforcement of powerful, easy-to-use intelligent storage management policies.

This reliable, scalable software makes it easier than ever to migrate, tier, balance and replicate file data by automating tasks and eliminating the service outages and reconfiguration associated with them. You'll have the freedom to move data at your convenience, the freedom to place data at your discretion and the freedom to choose the technology that best meets your business needs.

#### Simplifying File Access with File Virtualization

File virtualization creates a logical abstraction of the physical storage environment. This presentation layer, also referred to as a Global Namespace, enables simple logical access to physical file systems, and hides storage changes from clients.

F5 FreedomFabric network operating system software does not introduce a new file system into the storage environment, but acts as a proxy to federate file systems that are already in place on the underlying storage layer. It uses industry-standard file access protocols, NFS and CIFS, to communicate with both clients accessing files and storage servers providing them.





### Simplifying Storage Management with Automated Storage Management Policies

FreedomFabric network operating system software enables IT organizations to automate and enforce data management policies in realtime. Operations that were once done manually can now be performed automatically, without visibility or disruption to users and applications. This significantly extends the value of existing storage investments and enhances business workflow in four key areas:

#### Non-disruptive Data Migration

Administrators can use powerful policies for a range of data migration tasks - from moving entire file systems to individual files. Data migration can take place between heterogeneous storage devices, for both NFS- and CIFS-oriented data, and migrations can be scheduled to avoid peak traffic times or backup windows. Outages and business disruption previously associated with data migrations are eliminated.

#### Automated Storage Tiering

F5 FreedomFabric software automates the placement and movement of data between different tiers (or classes) of storage, with each tier potentially comprising devices from multiple vendors. F5's storage tiering capability operates at the file level, enabling organizations to move just files or projects based on certain criteria

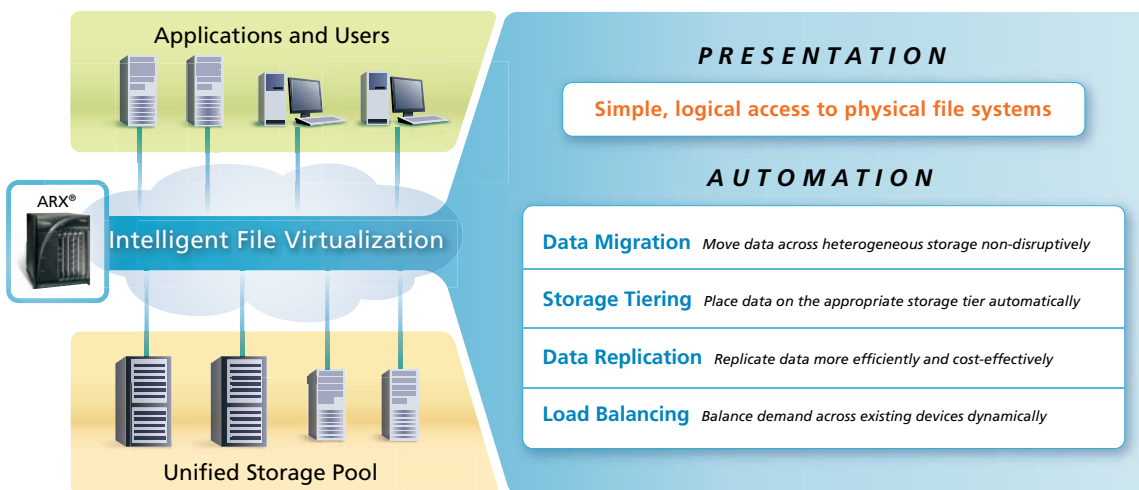
(age, type, etc.) rather than entire file systems. No stubs or pointers are left behind, eliminating risks and complicated backup and recovery procedures. Real-time policy enforcement capabilities enable files to be placed on appropriate devices automatically.

#### Efficient Data Protection and Replication

Disk-based replicas of file data can be created and used for disaster recovery applications. Storage managers can define groups of files to be replicated either locally or remotely, across an IP network. Replication can occur at regularly scheduled intervals, and only file changes are transmitted to preserve WAN bandwidth. Off-site replicas can be presented and accessed by the user in a read-only fashion to ensure the availability of data. These replicas can be quickly promoted to a read/write state in the event of a data center failure.

#### Dynamic Load Balancing

Real-time load balancing policies allow enterprises to create larger "virtual file servers" from existing file storage devices, aggregating the resources (capacity, throughput, processing power) of these physical devices and optimizing application performance. The F5 Acopia ARX® device acts in real time to avoid the bottlenecks and ensure optimal data traffic flow.



F5 FreedomFabric software includes a presentation layer, which leverages file virtualization to provide simple, logical access to physical file systems, and a policy layer, which automates many management tasks such as migration, tiering, replication, and load balancing, making them transparent to users and applications.



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