HP StorageWorks Enterprise File Services
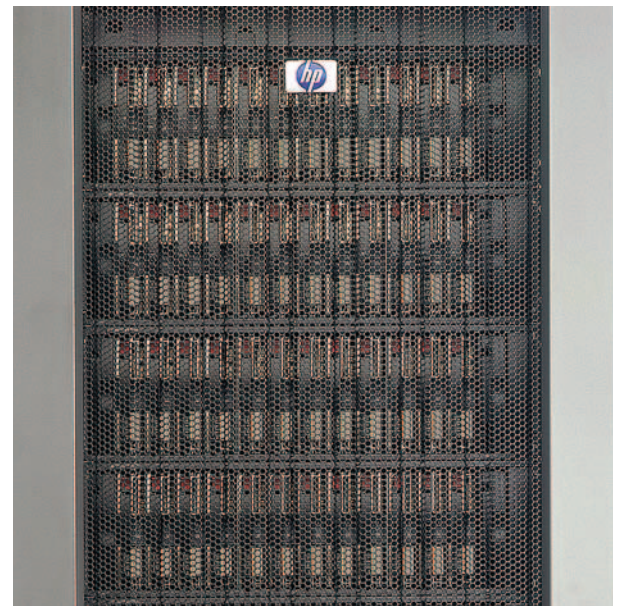
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Solutions for the adaptive enterprise.

hp invent

With more and more organizations growing to meet demands from customers across the country and around the world, the ability to provide file access and efficient wide area network capabilities to users is becoming more and more critical to a company's success. The simple fact is that storage is growing while the resources to manage the data are staying the same or even shrinking.

Introduction

The HP StorageWorks family of Enterprise File Services products can provide solutions to these issues. The focus of these products is to meet the needs of enterprise customers—whether at the datacenter or remote office.

HP StorageWorks Enterprise File Services Family Architecture

If your organization is looking to consolidate file serving in your datacenter or you are looking for a way to effectively manage remote offices, you know that you face challenges. The solutions you implement must drive efficiency and productivity, simplify your infrastructure, fit your ever-challenged budget and resource pool, and help you run your IT department like a business—where IT can drive growth and be a competitive advantage in your marketplace.

From a file serving perspective, you need the solution to be scalable so that you can buy what you need now and grow at your own pace, providing you with a flexible system that is highly available to support your mission-critical environment and can provide high performance NFS file serving.
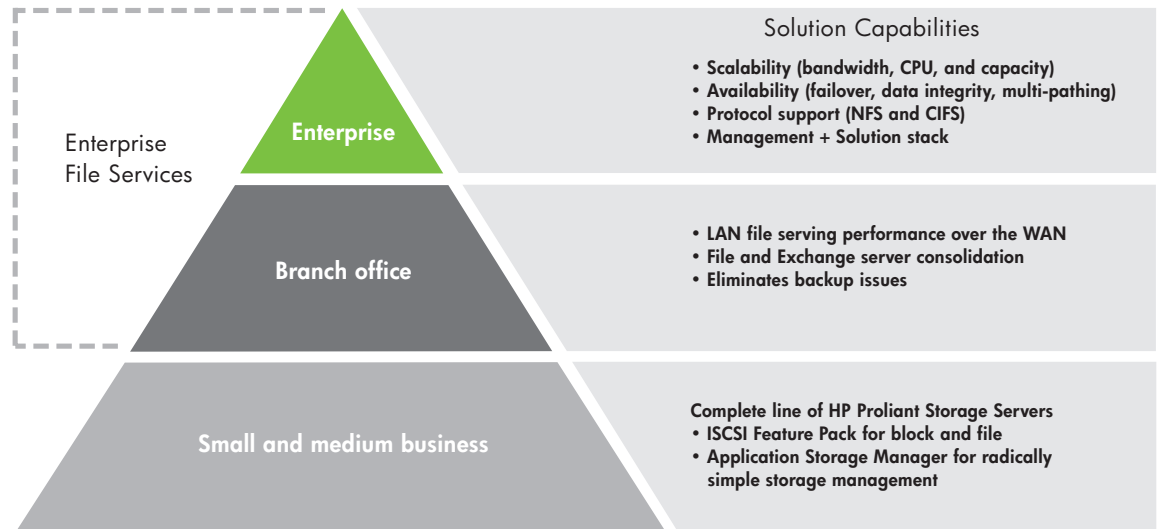
For your remote office, you need a solution that allows you to consolidate and centralize data back in the datacenter where it can be more efficiently managed and protected, by centralized IT resources that are trained and knowledgeable. At the same time, you need to provide high-performance access to centralized information for the remote offices without having to pay for more expensive "pipes." Wouldn't it be ideal to utilize your existing WAN to provide high performance to remote sites while centralizing critical data and eliminating local backup?

The family of HP StorageWorks Enterprise File Services (EFS) products helps you to push the boundaries of scalability and efficiency to new levels, enabling you to better manage central and remote office data. The HP StorageWorks Enterprise File Services Clustered Gateway facilitates the consolidation of your file serving by leveraging your existing SAN infrastructure and the HP StorageWorks portfolio of SAN storage arrays, including the MSA, EVA and XP products. The value of the EFS Clustered Gateway is that it allows you to centrally manage, backup and archive your data in one place with the scalability and availability that your environment demands.

For organizations with remote sites, HP StorageWorks Enterprise File Services WAN Accelerators provide outstanding WAN optimization solutions, allowing users in remote offices to link seamlessly into the main office. Data transfer acceleration between the two locations gives the appearance of local storage performance— it's that fast! In reality, you are maintaining only one copy of your critical data as it is centrally managed and administered in the datacenter.

Solution Capabilities

Enterprise

- **Scalability (bandwidth, CPU, and capacity)**
- **Availability (failover, data integrity, multi-pathing)**
- **Protocol support (NFS and CIFS)**
- **Management + Solution stack**

Enterprise File Services

Branch office

- **LAN file serving performance over the WAN**
- **File and Exchange server consolidation**
- **Eliminates backup issues**

Small and medium business

Complete line of HP Proliant Storage Servers
- **ISCSI Feature Pack for block and file**
- **Application Storage Manager for radically simple storage management**

HP StorageWorks Enterprise File Services Clustered Gateway

The HP StorageWorks Enterprise File Services Clustered Gateway delivers superior NFS file serving performance and scalability for enterprise customers on an industry standard platform. The fully symmetrical cluster architecture helps assure high availability with complete data and cache coherency and transparent client failover. With scalability up to a 16 TB file system, this solution can meet the most demanding NFS needs. The HP StorageWorks EFS Clustered Gateway delivers industry leading price and performance.

This complete solution is built with industry standard components—HP ProLiant hardware and a standard Linux operating system. By building with industry standard components, this solution can easily be integrated into a datacenter—leveraging both existing SAN infrastructure and the complete portfolio of HP StorageWorks SAN storage products.

How a clustered gateway can assist your organization
The HP StorageWorks EFS Clustered Gateway solution can help you address key challenges within your organization. You will be able to increase your file service capacity without a complete replacement of your hardware. You will be able to support large file systems while maintaining data integrity regardless of hardware failures. The HP StorageWorks EFS Clustered Gateway solution allows you to do all of this for a lower total cost investment.

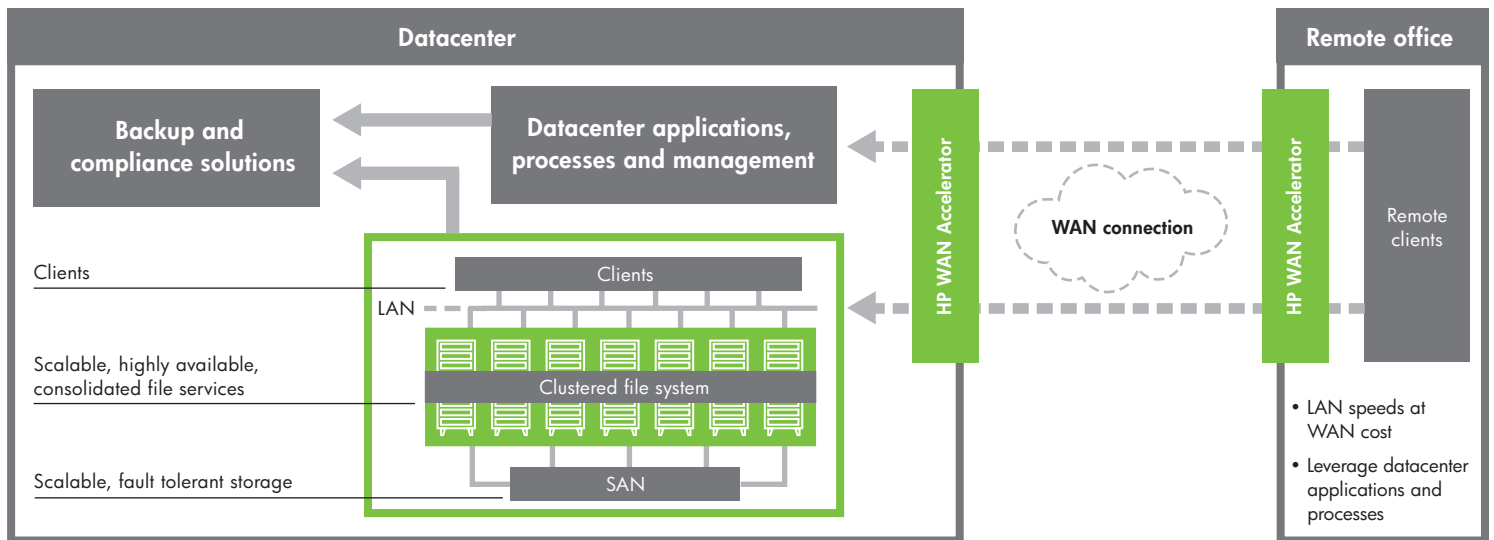**Product highlights**

Superior NFS performance and scalability
- Add nodes to scale NFS file serving performance in a nearly linear fashion—up to 16 nodes in a single cluster
- A fully symmetrical cluster architecture means that all nodes are fully utilized with no bottlenecks or hotspots
- Supports up to 16 TB per file system
- Optional HP StorageWorks Clustered Volume Manager software further enhances performance by aggregating and striping across storage arrays and allowing for configurable striping to meet specific workloads

High availability
- Transparent failover for NFS clients with no need to remount the NFS mount point if one or more nodes fail
- Complete session state including guaranteed lock recovery on failover which is unique in the industry
- Complete data and cache coherency between all nodes in the cluster
- No downtime—rolling upgrades of hardware and software allow for continuous operation enforcing change without chaos

Industry standards
- Built with the world's best-selling HP ProLiant servers with all of the ProLiant manageability tools including Insight Lights-Out (iLO), ProLiant Essentials and HP Systems Insight Manager
- SUSE Linux v9, Enterprise Edition built on the 2.6 kernel

- The foundation of the HP StorageWorks Clustered File Systems software has been proven in a variety of environments, including oil and gas, life sciences and banking applications

Flexibility
- Leverage existing SAN infrastructure with a scalable solution that allows you to purchase additional file serving capacity as you need it

- Utilize existing datacenter tools and solutions for back-up, management and virus protection; individual nodes can be selected for special purposes such as backup which saves on licensing fees

- Leverage training, knowledge, experience and parts that have been acquired for HP ProLiant and HP StorageWorks, standard version of Linux OS

- Cluster file serving resources can be managed from any node within the cluster or a management workstation running Windows or Linux

Clustered gateway benefits
- Scalable file serving that works with your storage to scale as needed

- Simplified architecture—a single cluster to manage rather than multiple islands of storage

- Easy integration into the datacenter with HP ProLiant server management tools and an industry standard OS

HP StorageWorks Enterprise File Services WAN Accelerator

HP StorageWorks Enterprise File Services (EFS) WAN Accelerators allow enterprise organizations with remote offices to optimize WAN connections, to consolidate server and storage resources at a central office, and to have more control over resources, all while reducing IT costs. EFS WAN Accelerator appliances utilize a variety of technologies—including compression, latency optimization and transaction prediction—that enable LAN-like performance over a WAN.

HP EFS WAN Accelerators are comprehensive remote office solutions that can improve the performance of applications used on WANs by up to one hundred times. They are built on HP ProLiant servers and offer the industry's most complete solution for problems affecting wide area networks (WANs), remote offices and the applications they rely on. Unlike other WAN optimization products that focus solely on improving WAN bandwidth, EFS WAN Accelerators not only help deliver the industry's highest bandwidth optimization, but also address the effects of high latency on TCP—and the applications that run on TCP. Unlike cache-based approaches, which are typically application-specific and inflexible, EFS WAN Accelerators optimize all TCP traffic for bandwidth and latency, and also offer additional application-specific optimization. The HP StorageWorks family of EFS WAN Accelerator solutions also includes the HP StorageWorks EFS WAN Accelerator Manager, which can be used to centrally manage a fleet of up to 500 distributed EFS WAN Accelerator appliances.

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How HP StorageWorks EFS WAN Accelerators can assist your organization

There are a number of challenges that your organization faces that can be addressed by the deployment of EFS WAN Accelerators. If you have remote or satellite offices, you need to provide them with content from your central office—many users in remote offices save their data locally because retrieving it from the central office can be very time consuming. However, this means that content and data integrity are not being maintained throughout your organization, and that critical data may not be backed up reliably. EFS WAN Accelerators also help you address the challenge of keeping your data synchronized across remote offices and datacenters.

HP EFS WAN Accelerators allow your users to point to the central office file storage location and retrieve content as quickly as if they were in that office or the data was stored locally to them. Likewise, they enable centralized backup of distributed information, all but eliminating the need for local backup. This helps reduce storage costs, ensure data integrity and eliminate local backup headaches, as data is not being orphaned at your remote offices.

HP StorageWorks EFS WAN Accelerator features and benefits

EFS WAN Accelerators provide a variety of unique solution benefits:

• **Industry-leading technology**—HP EFS WAN Accelerators remove repetitive WAN traffic for all applications running on TCP (including CIFS, NFS, HTTP, FTP and MAPI) and combine three types of WAN optimization into one product (bandwidth, transport protocol and application protocol). Other products available in the marketplace typically address only one or two types of WAN optimization and only one type of traffic (file systems).

• **Centralization of distributed data**—HP EFS WAN Accelerators reduce cost and complexity of distributed IT infrastructure by enabling centralization of file and application servers. Compliance officers looking to consolidate data storage to datacenters gain tighter control of sensitive data.

• **Elimination of remote office local backup**—Installation of EFS WAN Accelerators in remote offices provides a means to eliminate remote office backup headaches. Server data can be compressed and copied across the WAN to a server in the datacenter and then be backed up to tape from there.

• **Avoidance of costly WAN upgrades**—By removing repetitive information from the WAN, EFS WAN Accelerators will typically reduce WAN traffic by 60 to 95 percent, which means the effective bandwidth of existing WAN links can be increased by up to twenty-fold.

• **HP ProLiant hardware**—EFS WAN Accelerators are based on award-winning HP ProLiant servers and can be managed as any HP ProLiant server for a smoother transition into your environment. HP Lights-Out technology allows remote monitoring and diagnosis of the appliance, even if the server has crashed or is otherwise not communicating with the rest of the system.

HP StorageWorks EFS solutions

HP also offers a variety of solution services to help you take full advantage of your infrastructure and EFS device implementation.

HP IT Consolidation—optimize your people, processes and systems for more efficiency
• HP StorageWorks Enterprise File Services Clustered

HP IT Consolidation solutions help you to optimize your people, processes and systems to be more efficient and effective.

Gateway in your datacenter for high performance file serving. Eliminate islands of storage that may be present in the home office environment all of which must be managed separately. In the case of remote offices, the remote data can now be brought into the datacenter where it can be managed from a centralized IT staff that is trained in processes, procedures and regulations. The HP Enterprise File Services Clustered Gateway provides the data integrity, high availability and scalability meet a demanding Enterprise environment.

• HP EFS WAN Accelerators allow remote offices to consolidate their resources to the data center by accelerating the data across the WAN. Remote offices are able to take advantage of the centralized data and file serving available from the data center without the latency problems form the past. If the remote offices are paying for their remote IT support, they are able to meet the growing demands of their office clients for access to more data, more quickly without investing in additional WAN infrastructure—which they may not need. In addition, the remote office is freed from their local IT support duties of protecting critical data.

HP Ultimate Business Protection—ensure that your data is backed up and safe
• Due to the fully symmetrical nature of the clustered file system in the HP Enterprise File Services Clustered Gateway, any node can be designated as a "backup" node. By doing this, the entire file system can be backed up from a single node, which can save on backup license fees. If remote office data is also consolidated at the datacenter there are additional advantages as it simplifies the backup and archiving strategies.

• HP EFS WAN Accelerators allow you to consolidate your data at the datacenter from remote office sites. Once there, it can be more effectively managed and protected. Alternatively, if you still have local storage at remote sites, EFS WAN Accelerators can eliminate the need for local backup since your optimized WAN connection can now handle the backup bandwidth back to the data center. Either way, your professional IT personnel now have greater control to ensure that your organization's backup schedule and archiving requirements are being met.

Why HP?

HP is the world leader in non-outsourced services with 65,000 service professionals in 160 countries. Included among these are 5,000 storage specialists and 4,500 Cisco specialists.

Leadership
HP has one of the world's largest, most specialized forces of consultants, combined with the broadest choice of technology platforms in the industry and proven experience designing and delivering comprehensive, end-to-end, best-in-class e-learning solutions.

Industry expertise
HP solutions are based on cost-effective industry-standard technology that can be easily integrated and that scales up with the potential to support millions of users. HP provides comprehensive, end-to-end solutions including hardware, software and services.

Open standards
The HP solution is very modular and is built on open standards. This allows for a high degree of customization to fit your specific needs and requirements.

Management
HP offers unique products and solutions, proven methodology and full lifecycle service capabilities to manage your project—from business requirements to implementation.

The smartest way to invest in IT

HP Financial Services provides innovative financing and financial asset management programs to help you cost-effectively acquire, manage and ultimately retire your HP solutions.

For more information on these services, please contact your HP sales representative or find us on the web at: **www.hp.com/go/hpfinancialservices**.

For more information

To learn more about HP StorageWorks Enterprise File Services please contact your HP representative, channel partner or reseller, or visit: **www.hp.com/go/efs**.

For more information, visit: www.hp.com/go/efs.

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