HP StorageWorks Enterprise File Services (EFS) WAN Accelerator white paper

Leading-edge performance for distributed infrastructure

Introduction

The benefits of IT resource consolidation are well known: lower IT costs, easier management, improved security, and reliable backup.

HP StorageWorks Enterprise File Services (EFS) WAN Accelerators improve the throughput of existing distributed infrastructure by as much as 100 times, meaning enterprises can experience LAN-like application performance even on their wide area networks (WANs). Distributed teams can get updated files in seconds or minutes instead of hours.

Figure 1. Typical EFS WAN Accelerator deployment
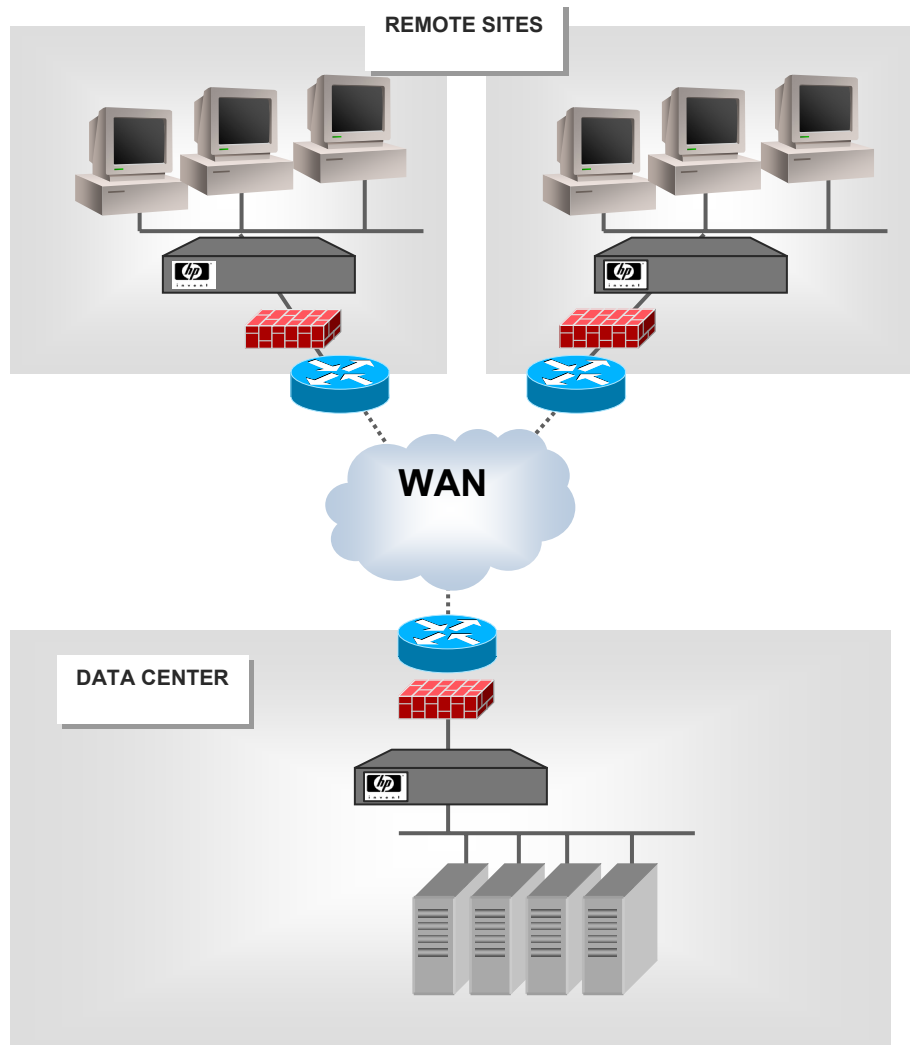
If IT resource consolidation is your goal, HP technology can be the key enabler to centralizing all of your server resources at the main datacenter. If backup of data at remote sites is one of your mission-critical processes, EFS WAN Accelerators allow you to perform backups over the WAN within existing backup windows without upgrading your WAN links.

Key product features

Performance

- **Scalable data referencing (SDR)**—HP bandwidth optimization algorithms ensure the same data is never sent more than once over the WAN. SDR reduces bandwidth consumption for certain applications to less than 1% of previous levels.
- **Transaction prediction**—HP latency optimization technology reduces the impact of WAN latencies for a variety of chatty applications including, but not limited to, Microsoft® Windows® file sharing (CIFS), Exchange (MAPI), and Lotus messaging platforms.
- **Virtual window expansion**—EFS WAN Accelerators allow applications to overcome TCP windowing limitations that affect long-distance WAN connections.
- **Bi-directional operation**—All TCP traffic is optimized in both directions: to and from remote offices and datacenters.
- **Permanent disk-based store**—HP provides between 250 GB and 1.8 TB of raw storage on each EFS WAN Accelerator appliance. This provides a significant data store from which data commonalities can be leveraged.
- **Transparent pre-population**—HP data stores can be automatically and transparently pre-populated with newly generated data. The new data is "pushed" to the remote EFS WAN Accelerator from the server, so that it is locally resident when first requested by the client. This accelerates initial access of new data by the client.

Management and operations

- **In-path or out-of-path deployment**—EFS WAN Accelerators can be deployed in-path or out-of-path in a variety of configurations to meet your specific requirements. Support is included for optional WCCP and Policy-Based Routing configurations.
- **HP EFS WAN Accelerator management system**—EFS WAN Accelerators are managed using a web-based GUI or command line interface (CLI). Administrators can control what is optimized by protocol, application, port, and IP address. The optional EFS WAN Accelerator Manager allows central configuration of up to 500 EFS WAN Accelerators.
- **HP ProLiant management features**—EFS WAN Accelerators are based on award-winning HP ProLiant hardware, and since they come with pre-installed agents for HP Systems Insight Manager and HP Integrated Lights-Out management, integration into existing ProLiant management environments is seamless.
- **SNMP monitoring**—EFS WAN Accelerators can be monitored through SNMP traps to integrate easily into existing SNMP management systems.
- **Comprehensive event logging**—Network events that affect EFS WAN Accelerators are continuously logged, allowing tracking of issues.
- **Transparent interception**—By default EFS WAN Accelerators intercept all TCP traffic without any configuration.
- **Traffic authentication through CHAP**—Optimized data is protected through Challenge Handshake Authentication Protocol (CHAP) authentication techniques.
- **RADIUS/TACACS+ authentication option**—EFS WAN Accelerator management logins can be protected through use of existing authentication servers.
- **Auto discovery**—EFS WAN Accelerators automatically detect the presence of other EFS WAN Accelerator appliances.

- **Over-the-wire upgrade**—As new features and functionality are available, EFS WAN Accelerator software can be upgraded (or rolled back) over the network.
- **Bandwidth throttling**—Administrators can limit the total bandwidth consumed by EFS WAN Accelerators, ensuring that enough is preserved for other traffic.

High-availability features

- **Fail-through**—EFS WAN Accelerators have the ability to bypass all traffic in the event of electrical, software, or hardware failure.
- **Box-to-box failover**—EFS WAN Accelerators can be deployed to enable a failover to a backup appliance.
- **Dual power supply and RAID**—Select EFS WAN Accelerator models have several high-availability features and configurations.

Product specifications

HP StorageWorks EFS WAN Accelerators are available in five configurations plus an EFS WAN Accelerator Manager to meet the needs of any site. The following table summarizes the specifications.

Model	DL320-510	DL320-1010	DL320-2010	DL380-3010	DL380-5010	DL320-M25
	391683-B21	391684-21	391685-21	391686-B21	391687-B21	391688-B21
Profile	1U	1U	1U	2U	2U	1U
WAN capacity	512 kbps	2 Mbps	4 Mbps	10 Mbps	4 5Mbps	–
Raw disk store	250 GB	250 GB	500 GB	1.2 TB	1.8 TB	80 GB
Optimized TCP connections	200	625	1300	2400	4000–5000	–
User capacity (consolidated) *	Up to 25	Up to 80	Up to 200	Up to 1,200	Up to 1,600	–
User capacity (non consolidated)**	Up to 150	Up to 500	Up to 1,100	Up to 3,500	Up to 6,000	–
Fan-out***	–	–	Up to 20:1	Up to 50:1	Up to 150:1	Up to 500:1
RAID	No	No	Yes	Yes	Yes	No
Dual power supplies	No	No		Yes	Yes	No
Hot-swappable disks	No	No	No	Yes	Yes	No
GigE fail-through	Yes	Yes	Yes	Yes	Yes	–
Auto-discovery	Yes	Yes	Yes	Yes	Yes	Yes
Management interface	WEB UI, CLI, SNMP	WEB UI, CLI, SNMP	WEB UI, CLI, SNMP	WEB UI, CLI, SNMP	WEB UI, CLI, SNMP	WEB UI, CLI

* This is a guideline only based on remote site servers consolidation environments. Actual number of supported users will vary based on use case.

** This is a guideline only based on environments where servers remain in remote site. Actual number of supported users will vary based on use case.

*** This is a guideline only and covers remote site EFS WAN Accelerators to datacenter WAN Accelerators or WAN Accelerator Managers. Actual fan-out will vary based on use case.

For more information

For more information on HP StorageWorks EFS WAN Accelerators, visit:

http://www.hp.com/go/efs

For additional HP StorageWorks EFS Accelerator white papers, visit:

http://h18006.www1.hp.com/storage/efswhitepapers.html