

# Enterprise file sync and sharing service with HP 3PAR File Persona and Citrix ShareFile



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## Executive summary

This document describes the benefits of combining HP 3PAR File Persona with Citrix® ShareFile to deliver a scalable, highly available, enterprise-class, on-premise storage solution with secure remote cloud access to file sync and sharing services.

## Audience

The descriptions and recommendations in this document are intended to help you and your HP sales representatives understand the features and components of this solution.

## Introduction

### HP 3PAR File Persona

HP 3PAR StoreServ Storage with the HP 3PAR File Persona offers a unique solution that incorporates multi-protocol support into the system architecture to deliver a tightly integrated, truly converged solution for provisioning both block storage volumes and file shares from a single storage system.

The HP 3PAR File Persona Software Suite is a licensed feature of the HP 3PAR Operating System enabling a rich set of file protocols, an Object Access API (REST), and file data services. HP 3PAR File Persona delivers Network File System (NFS), Server Message Block (SMB), and object access on HP 3PAR StoreServ platforms. This boosts storage utilization and lowers costs by moving storage-affinity related workloads such as data access, protection and analytics directly into the storage operating system and controller. All block, file, and object access is managed via the HP 3PAR StoreServ Management Console, which enables simple provisioning and features a search-enabled interface aligned with HP OneView.

The HP 3PAR File Persona Software Suite solution extends the spectrum of primary storage workloads natively addressed by the system's default Block Persona. The Block Persona is ideal for your virtualization, database, and application workloads with the File Persona enabling home directory consolidation, group and departmental shares, corporate shares, and custom cloud applications—all from truly Converged Controllers, truly agile capacity, and truly unified management. The HP 3PAR StoreServ File Persona Suite is your key to unlocking this capability within any HP 3PAR StoreServ Storage system with Converged Controllers.

The HP 3PAR File Persona provides continuously available file shares, which allows non-disruptive HP 3PAR Operating System upgrades and transparent failover of clients in the event of a controller failure. Comprehensive data protection is also delivered by point-in-time file store snapshots for user-driven file recovery, support for third-party antivirus and backup/restore software, and disaster recovery (DR) replication via separately licensed HP 3PAR Remote Copy. Furthermore, the HP 3PAR File Persona supports security of FIPS 140-2 validated data-at-rest (DAR) encryption as an optional additional measure to prevent unauthorized data access.

Only HP 3PAR StoreServ Storage has the ability to host workload-centric Storage Personas directly on a multi-controller architecture with hardware-accelerated data compaction—delivering a high-performance, low-cost, tier-1 storage platform to address any application need and data type. Protecting your file data and organization as well as increasing your uptime have never been simpler thanks to high availability (HA) and resiliency features built into HP 3PAR StoreServ Storage.

### Citrix ShareFile

Citrix ShareFile is a secure file sync and sharing service that meets the mobility and collaboration needs of users while meeting the data security requirements of the enterprise. Users are able to securely access their data and data shared by others from any PC, Mac, or mobile device. Citrix ShareFile enables bring your own device (BYOD) accessibility by giving users seamless, secure access to synced files and folders on their PC or on the go. With support for popular mobile devices—and easy-to-use interfaces with dynamic access options—users can leverage the devices they are most comfortable with, avoiding the learning curve of new tools and devices.

With Citrix ShareFile you can choose where your data is stored—in the cloud, in your data center, or a combination of both. Deploying an on-premise solution, Citrix ShareFile allows a company to maintain control of their assets by having the ShareFile storage located in their company-controlled data center. You then have the flexibility to store enterprise data in optimal locations which meet corporate data policies and unique compliance requirements.

HP 3PAR File Persona with its rich set of data services and scale-out architecture is an ideal enterprise-class platform for hosting user ShareFile data. The HP 3PAR File Persona and Citrix ShareFile solution allows companies to upload and share large business files securely and easily, enabling enterprise-class sharing and collaboration to be easily integrated with most business workflows such as Microsoft® Outlook. Files of up to 10 GB in size may be securely uploaded using AES encryption.

## HP 3PAR File Persona and Citrix ShareFile on-premise solution

HP 3PAR File Persona supports on-premise Citrix ShareFile StorageZones. This feature enables IT to place data in the organization’s own data center to meet unique data sovereignty and compliance requirements. Customer-managed ShareFile StorageZones also enables optimal performance by giving IT the ability to store data in close proximity to the user. ShareFile StorageZones can also be easily integrated with the organization’s existing infrastructure as they are designed to support any SMB-based network share from any storage vendor. Since storage is a key element of your customer-managed ShareFile StorageZones, Citrix has collaborated with HP—together testing the compatibility of their solutions to simplify and accelerate deployments of ShareFile StorageZones with HP 3PAR File Persona.

The Citrix ShareFile on-premise product architecture consists of two key components: the ShareFile Control Plane and the customer-managed ShareFile StorageZones.

The ShareFile Control Plane performs user authentication, access control, reporting, and brokering. The ShareFile Control Plane is hosted in Citrix data centers and is managed by Citrix as a service. All traffic from a client device connects to the ShareFile Control Plane.

The main component of the customer-managed Citrix ShareFile StorageZones is the StorageZones Controller server. This is a Web service installed on a Windows Server® which handles the HTTPS operations from the ShareFile Control Plane. The StorageZones Controller then serves as the Web front end to the ShareFile StorageZones storage repository, which is housed by the HP 3PAR StoreServ server licensed with HP 3PAR File Persona services. When you pair your StorageZones Controller to the ShareFile Control Plane, your HP 3PAR File Persona platform becomes a ShareFile StorageZones you can use with your ShareFile account.

### Data flow

When a user logs into Citrix ShareFile, they connect to [sharefile.com](http://sharefile.com) in the Citrix data center. The servers there provide the Web and API services for ShareFile. When a user uploads a file, the file is not stored in the Citrix data center, rather the file is sent to a ShareFile StorageZones. User file operations are re-directed to their associated ShareFile StorageZones, which in the case of the customer-managed ShareFile StorageZones is the HP 3PAR File Persona system in your data center.

### Solution components

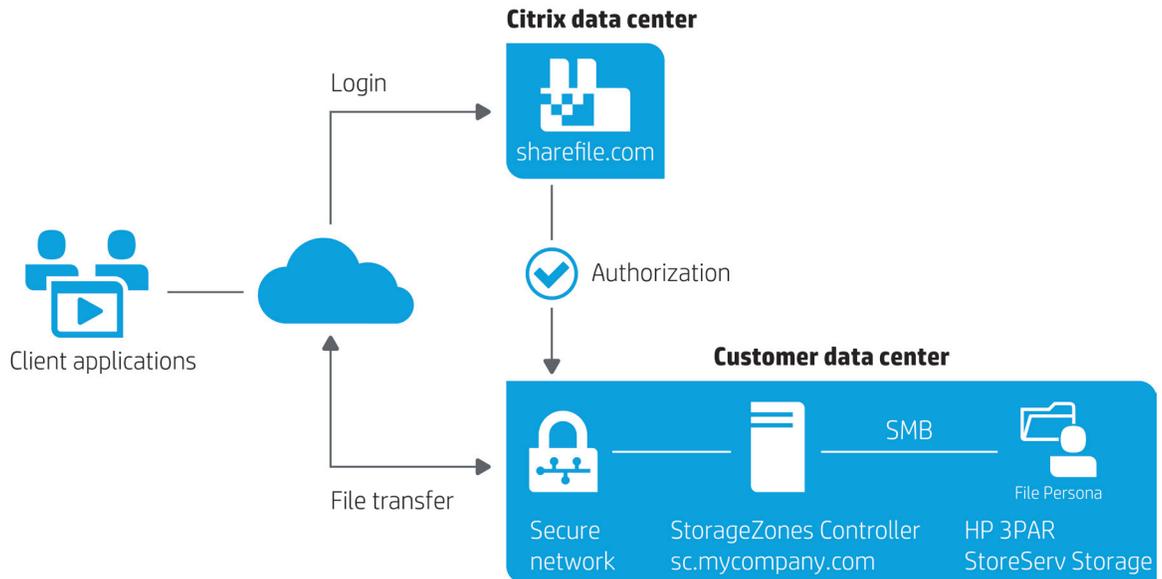
Table 1 identifies the components of Citrix ShareFile and the on-premise solution.

**Table 1.** Basic components and description

Component	Description
<b>ShareFile Control Plane</b>	The Control Plane performs functions such as user authentication, access control, reporting, and brokering. The Control Plane is hosted in Citrix data centers and managed by Citrix as a service. An account within the ShareFile system is required for access to a StorageZones Controller server. A subdomain of <a href="http://sharefile.com">sharefile.com</a> is assigned to your account, for example mycompany.sharefile.com. All administrative functions and user account activity are handled at this site. The file/folder namespace created by each user is maintained in a database within the Citrix data center.
<b>StorageZones Controller</b>	The StorageZones Controller software is installed on Windows Servers located in your data center. A unique domain name and SSL certificate are required for each deployed StorageZones Controller. Multiple StorageZones Controllers may be deployed for a given account.
<b>HP 3PAR File Persona</b>	The primary storage for user files is one or more HP 3PAR File Persona file shares. These file shares are connected to the StorageZones Controllers. Each StorageZones Controller stores all of the user data in a single directory in the HP 3PAR File Persona SMB share. In order to spread the files to multiple shares, multiple StorageZones Controllers must be deployed with each linked to a unique SMB share.
<b>Public Internet</b>	All client applications access the Citrix <a href="http://sharefile.com">sharefile.com</a> site and associated StorageZones Controller across the public Internet.
<b>Client Applications</b>	Citrix provides multiple client applications for users to access their ShareFile accounts. The client device can request access to the follow-me data service through a mobile app, native desktop client, virtual desktop, Web, or mobile browser.

Figure 1 shows an on-premise configuration with the Citrix StorageZones Controller server and HP 3PAR StoreServ with HP 3PAR File Persona located inside your data center. The StorageZones Controller server must have a registered domain name associated with it and an SSL certificate issued for that domain. In figure 1, the domain is shown as sc.mycompany.com. An SSL certificate is issued for sc.mycompany.com. The StorageZones Controller server must have Internet connectivity through ports 80 and 443. Remote clients must be able to access the StorageZones Controller through these ports. HTTP access to sc.mycompany.com is through port 80 and HTTPS access to sc.mycompany.com is through port 443. Remote clients must have mutual access to both the Citrix [sharefile.com](https://www.sharefile.com) site and the StorageZones Controller.

**Figure 1.** On-premise solution infrastructure configuration



## Reference architectures

The on-premise solution with HP 3PAR File Persona lends itself to three basic architectures based on the number of StorageZones Controllers required and capacity or performance needs of the HP 3PAR File Persona system.

### Small

In the most basic architecture there is a single StorageZones Controller server connected to a single SMB share on an HP 3PAR File Persona-enabled HP 3PAR StoreServ array. The StorageZones Controller connects to the share through a single user account and writes all of the data to a single directory in the SMB share. Since all namespace activity is handled in the ShareFile servers in the Citrix data center, the size of the single directory does not pose much of an issue as normally expected.

### Medium

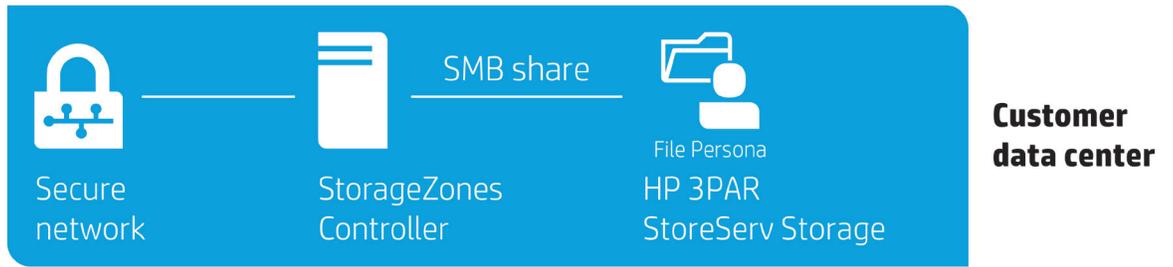
If the performance and capacity requirements dictate the need to spread the file load across more than one directory (SMB share), multiple StorageZones Controllers must be configured and deployed. Each StorageZones Controller will point to an SMB share dedicated to that ShareFile StorageZones. StorageZones Controllers may be dedicated servers or virtual machines. Remote users may be dedicated to a particular StorageZones Controller while still in the same Citrix ShareFile domain. In figure 2, the medium architecture diagram shows a single HP 3PAR StoreServ with HP 3PAR File Persona configured with two SMB shares and two StorageZones Controllers each dedicated to a separate share.

### Large

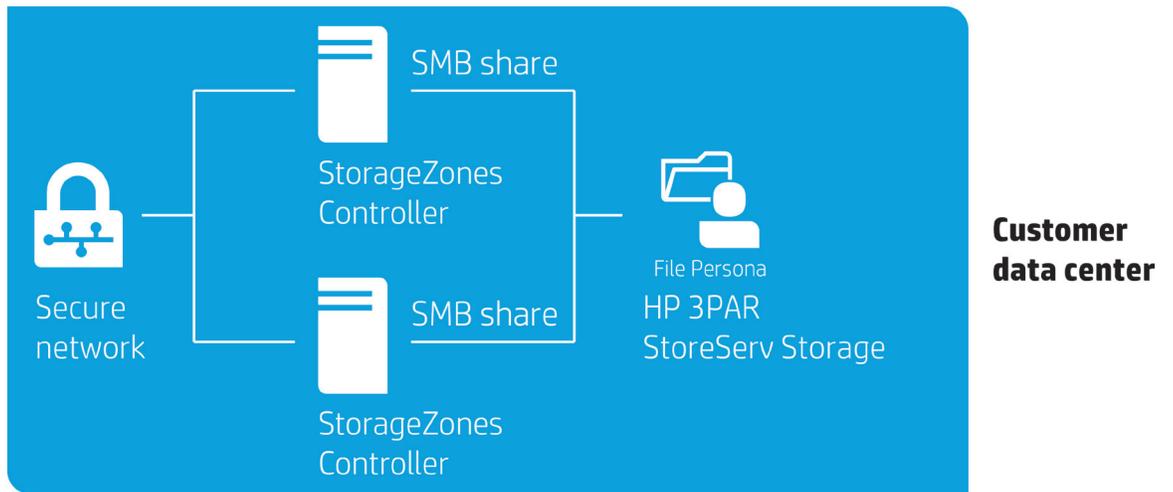
The HP 3PAR File Persona system may be expanded to support accessing the shares through multiple data paths. Consider this architecture in the event that the individual datasets become large enough to warrant multiple HP 3PAR StoreServ node pairs. The large architecture configuration in figure 2 shows multiple StorageZones Controller servers each accessing a dedicated SMB share presented by a multinode HP 3PAR StoreServ platform.

**Figure 2.** Small, medium, and large architecture configurations

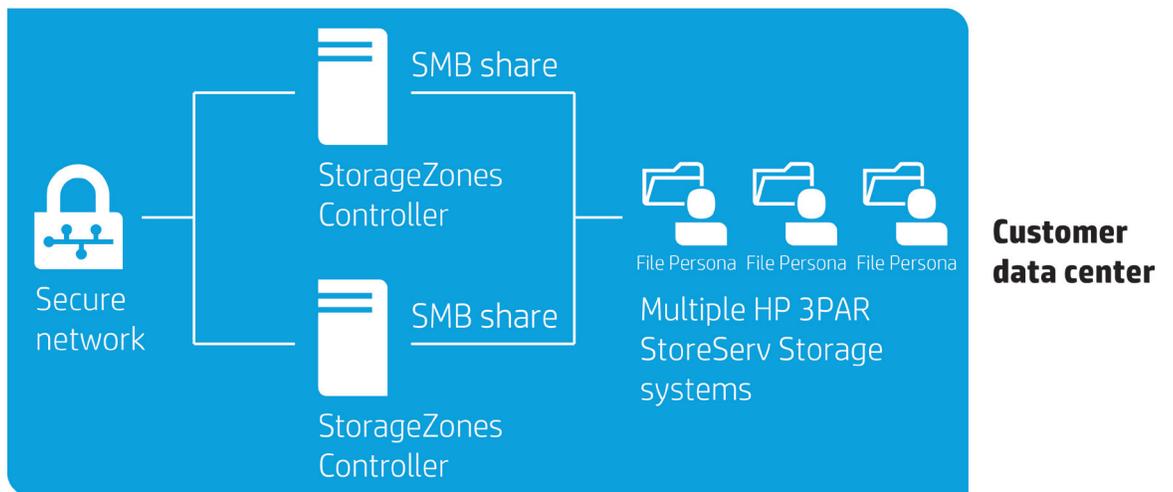
### Small architecture



### Medium architecture



### Large architecture



## Recommendations

The following are key recommendations for deploying this solution:

- **Choose the HP 3PAR File Persona-supported platform that meets your needs:** Citrix ShareFile StorageZones contain the corporate data to be accessed by remote or mobile users. On-premise ShareFile StorageZones access data using the SMB network store feature of the HP 3PAR File Persona. The SMB protocol is available on all HP 3PAR StoreServ models supporting HP 3PAR File Persona services allowing you to match your capacity and performance needs to the appropriate HP 3PAR File Persona platform.
- **Enable antivirus scanning with HP 3PAR File Persona:** Protect the ShareFile StorageZones SMB repositories from virus attacks using the antivirus solutions certified with HP 3PAR File Persona.
- **Plan for the number of Citrix StorageZones Controllers you will need:** The Citrix StorageZones Controller server is the front end to the StorageZones' storage repository. The Citrix StorageZones Controller writes all data to a single folder in the SMB repository. If additional folders are required, multiple StorageZones Controllers must be deployed. A single HP 3PAR File Persona implementation supports creating and accessing multiple SMB repositories, so multiple StorageZones Controllers may share access to the same HP 3PAR File Persona platform. With the high availability, scale-out architecture of the HP 3PAR File Persona services you can maintain the performance and availability of the SMB shares.
- **Use Citrix provided PowerShell scripts for bulk uploads:** Use the Web user interface for general file uploads to a Citrix ShareFile repository. For optimum efficiency when performing bulk uploads, do not use the Web user interface but instead use the PowerShell SDK and sample scripts provided by Citrix.
- **Consider using network load balancers:** To reduce the risk of the customer-managed network entry point to the on-premise StorageZones Controller from becoming a performance bottleneck, consider using network load balancers to distribute the workload.

## Conclusion

HP and Citrix have teamed to deliver a comprehensive file sync and sharing solution providing remote users universal access to data on proven HP 3PAR StoreServ with HP 3PAR File Persona. The on-premise solution utilizing HP 3PAR File Persona gives users true enterprise-class data services across all corporate and personal mobile devices while giving IT all the control it needs.

### Useful links

[HP 3PAR StoreServ Storage](#)

[HP 3PAR File Persona Software](#)

[Antivirus scanning best practices guide for HP 3PAR File Persona](#)

[Citrix ShareFile](#)

### Learn more at

[hp.com/go/3PAR/FilePersona](http://hp.com/go/3PAR/FilePersona)

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