



ShareFile StorageZones: ShareFile Data on Microsoft Azure

This document provides a technical overview of how ShareFile can be provisioned on customer-managed, Microsoft Azure cloud storage service.

To help IT regain control over employee file sharing, organizations are turning to two leaders, Microsoft and Citrix, to deliver a highly secure and validated enterprise file sync and sharing solution with flexible data storage options. ShareFile Enterprise with StorageZones on Microsoft Azure allows customers to store their enterprise data in Microsoft's global, enterprise grade cloud platform. With Microsoft Azure, IT can place data in different geographic locations that are closer to users to improve performance and meet compliance needs. Businesses benefit from the elasticity and flexibility of the cloud while maintaining ownership of their own encryption keys – an advantage typically only available on-premises.

Citrix ShareFile, a secure data sync and sharing service with flexible storage options allows IT to mobilize all enterprise data. ShareFile enables mobile productivity with read-write access to data, workflows and collaboration and allows users to securely share files with anyone and sync files across all of their devices. With ShareFile, IT gains the flexibility to store data in the most optimal locations to meet compliance and data sovereignty requirements and provide mobile access to network shares, SharePoint, OneDrive for Business and any ECM system. ShareFile delivers an intuitive experience for users, while providing IT with security and control.

ShareFile - StorageZones

Organizations have the flexibility to choose where their data is stored, on-premises, in the cloud or a combination of both to meet their specific needs for data sovereignty, compliance, performance and costs with ShareFile's innovative StorageZones. Administrators can choose between Citrix-managed secure cloud storage options and/or customer-managed StorageZones to leverage their storage infrastructure whether on-premise or in their cloud based object storage.

Citrix-managed StorageZones

With Citrix-managed StorageZones, customers can place their data in multiple worldwide locations managed by Citrix. Customers can choose between Microsoft Azure and Amazon Web Services enterprise-class datacenters employing industry proven caching and storage architectures that use the most advanced encryption standards available today.

The StorageZone architecture has various components, all of which are managed by Citrix, including ShareFile StorageZones which is the main component managing all file operations. Other components include the utility servers responsible for antivirus, full text index and backup functions.

Customer-managed StorageZones

With customer-managed StorageZones, IT can place data in their organization’s own datacenter to help meet unique data sovereignty and compliance requirements or leverage their personal object based storage. Customer-managed StorageZones can be easily integrated with an organization’s existing infrastructure as it is designed to support any Common Internet File System (CIFS)-based network share, Microsoft Azure, binary large object storage or S3 object storage.

Provisioning Customer-managed StorageZones on Microsoft Azure Storage

The use of cloud computing is growing, and by 2016 this growth will increase to become the bulk of new IT spend, according to Gartner, Inc. 2016 will be a defining year for cloud as private cloud begins to give way to hybrid cloud, and nearly half of large enterprises will have hybrid cloud deployments by the end of 2017.¹

Companies are heavily investing in their own cloud storage services replacing or extending their on-premise storage. Citrix is fully embracing this customer trend, helping IT organizations leverage their investments to consolidate multiple workloads and services on their choice of platform.

Citrix ShareFile data can be hosted natively in your Microsoft Azure account helping IT build the most cost-effective and customized solution for their organization. This customer-managed solution integrates ShareFile with Microsoft Azure’s Binary Large Object (Blob) storage, a cloud service for storing large amounts of unstructured data that can be accessed from anywhere in the world via HTTP or HTTPS.

Common uses of Blob storage include:

- Serving images or documents directly to a browser.
- Storing files for distributed access.
- Performing secure backup and disaster recovery.

The Blob service contains the following components (Figure 1).

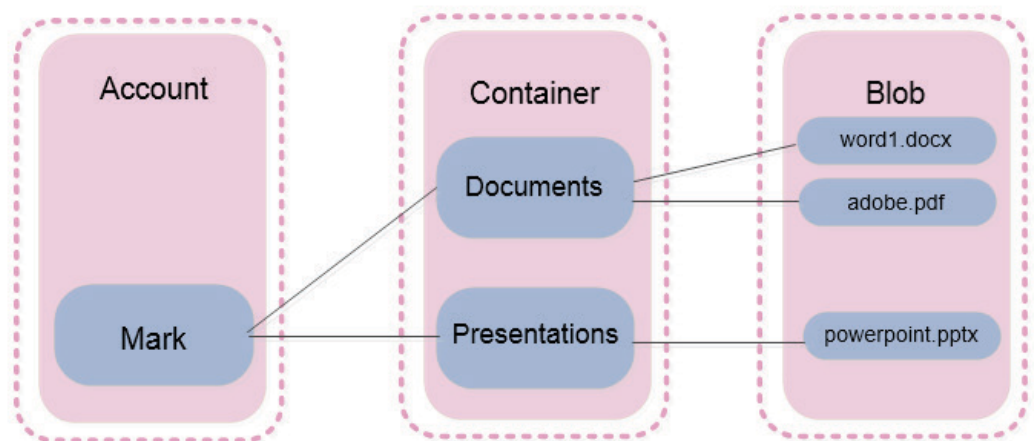


Figure 1: Blob service components

Product Architecture

The ShareFile product architecture consists of two key components: The ShareFile.com Control Plane, and Citrix-managed or customer-managed StorageZones. For the purpose of this document, we will focus on the customer-managed Azure storage service.

The Azure Storage architecture is similar to the customer-managed on-premise StorageZone architecture (represented by the purple Shared storage (CIFS) object) in Figure 2 below, with one minor difference. Azure storage is customer-managed storage but it is hosted in the Azure cloud. File uploads are initially deposited into a temporary storage area shared by all StorageZone controllers. Then, a background service copies those files to the Windows Azure storage container and deletes the local cached copy of the file(s). Represented on the left side of the image in Figure 2 by the beige Windows Azure storage and Temporary storage (CIFS) objects connected by the beige arrow.

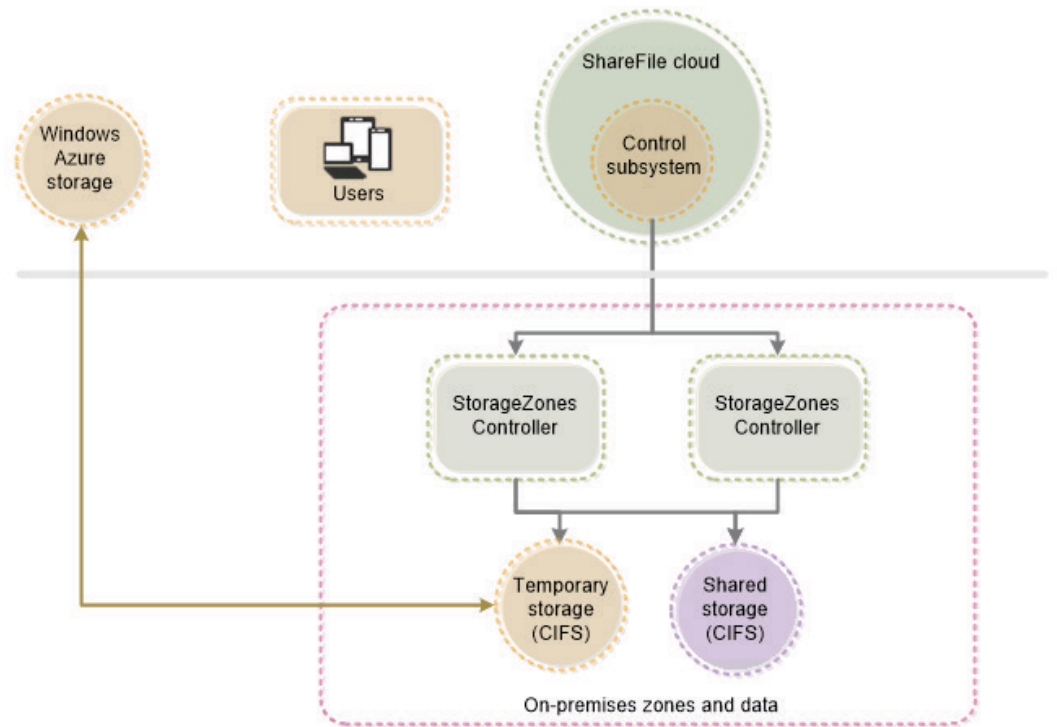


Figure 2. Customer-managed StorageZones with Azure architecture

Typically with CIFS based StorageZones the Controller servers are installed on-premise in the customer’s datacenter. However, if a customer is hosting virtual machines in Azure, they could install the StorageZone Controller software on instances running in their Azure account and not necessarily on-premise.

Control Plane

The Control Plane performs functions such as user authentication, access control, reporting and all other brokering functions. The Control Plane is hosted in Citrix datacenters and is always managed by Citrix as a service, irrespective of where customers choose to store their data. Customers can choose between the US Control Plane and the European Control Plane to address performance and compliance requirements.

- All traffic from a client device; the web interface or a native tool connects to the Control Plane using 256-bit SSL encryption.
- All datacenters containing ShareFile servers are certified to SSAE 16, demonstrating high standards for security. Files are transferred to and from ShareFile servers using 256-bit SSL encryption and files are stored with AES 256-bit encryption at rest.
- Comprehensive disaster recovery mechanisms protect against loss of data. Files are frequently backed up to a disaster recovery datacenter and mirrored in real time to a secondary server location.

StorageZones Controller

The main component in a customer-managed StorageZone is the StorageZones Controller server. The StorageZones Controller is a web service installed on either Windows Server® 2012 R2 or Windows Server® 2008 R2 SP1 and handles all the HTTPS operations from end-users and the Control Subsystem (see Fig.2). In essence, it is a web front-end to the StorageZone storage repository. Citrix recommends using a dedicated server or virtual machine for the StorageZones Controller server, due to the high demands placed on these servers during peak usage.

Installation

Installing and configuring ShareFile's StorageZones Controller software with customer-managed Azure Storage comprises of 3 key steps.

Step 1. Set up a ShareFile.com account:

- A ShareFile Enterprise account.
- A ShareFile user account that includes permission to create and manage zones.

Step 2. Install StorageZone Controller software.

The StorageZone Controller software is supported on Windows Server 2012 R2 and 2008R2 SP1 and has the following system requirements:

- Use a publicly resolvable Internet hostname (not an IP address).
- Enable the Web Server (IIS) role.
- Enable the ASP.NET and Basic Authentication IIS Role Services.
- Install ASP.NET 4.5.2.
- Enable SSL for communications with ShareFile.
- If you are not using DMZ proxy servers, install a public SSL certificate on the IIS service.

- Use an SSL certificate that is from a commercially trusted Certificate Authority. ShareFile does not support self-signed or unsigned certificates.
- A CIFS share for private data storage.
- If you plan to store ShareFile files in a Windows Azure storage container, the CIFS share is used for temporary files (encryption keys, queued files) and as a temporary storage cache.

To install StorageZones Controller first verify that your environment meets the system requirements before you start the installation. From the ShareFile download page at <http://www.citrix.com/downloads/sharefile.html>, log on and download the latest StorageZones Controller installer.

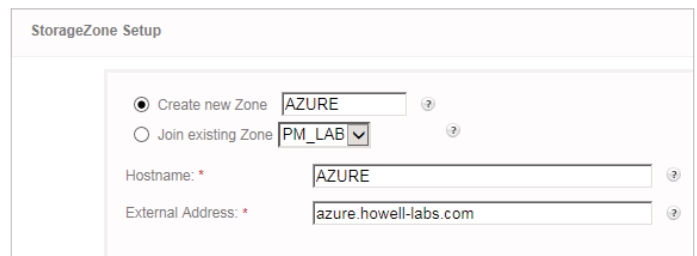
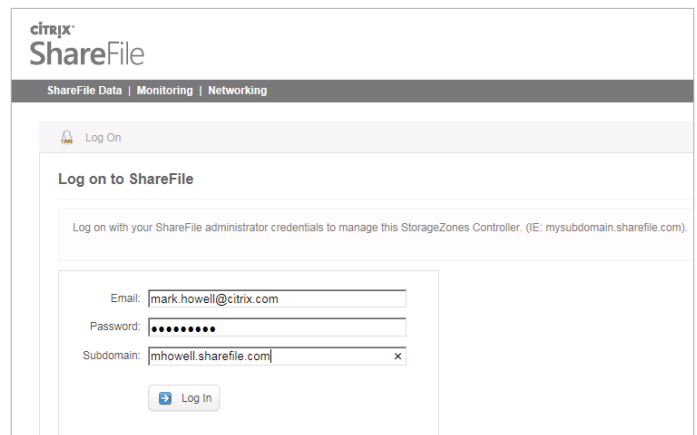
On the server you want to install the StorageZones Controller software, run StorageCenter_3.2 (or later).msi. The ShareFile StorageZones Controller Setup wizard starts. Respond to the prompts and then click Finish. The StorageZones Controller console opens.

A complete set of installation instructions can be found in Citrix eDocs located [here](#).

Step 3. Link the StorageZones Controller with Azure to ShareFile.com

Once the StorageZones Controller software is installed go to **Start | All Programs | Citrix ShareFile StorageZones Controller** and select **Configuration Page**.

1. Log on to ShareFile with the administrator's account that you were provided during the account creation.
2. Bullet **Create new Zone** and enter a name.
3. Enter the **Hostname**, typically the name of the server.
4. Enter the FQDN of the publically resolvable server address.



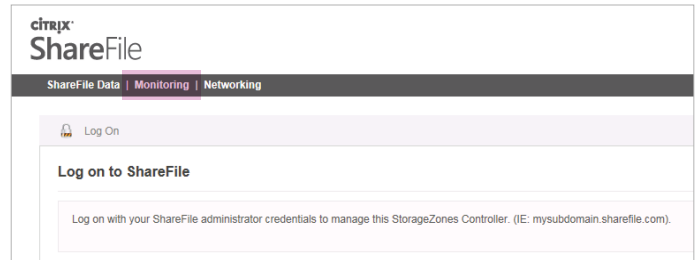
5. Check the **Enable StorageZones for ShareFile Data** box.
6. Select **Windows Azure storage container** from the **Storage Repository** dropdown menu.
7. Enter the **Shared Cache Location** created during the pre-requisites installation and enter a username and password with access to the Shared Cache folder.
8. Enter **Storage Account Name** and **Access Key**. This information comes from your Azure account.
9. Once validated you will be presented with the containers you have available to you from Azure. Select the appropriate container from the **Container Name** drop down menu.
10. Enter a passphrase and Re-enter it for verification and click **Register**.
11. Once complete you will see the following message. Close the browser.

12. Navigate back to Start | All Programs | Citrix ShareFile StorageZones Controller and select Configuration Page.

13. Select the **Monitoring** tab.

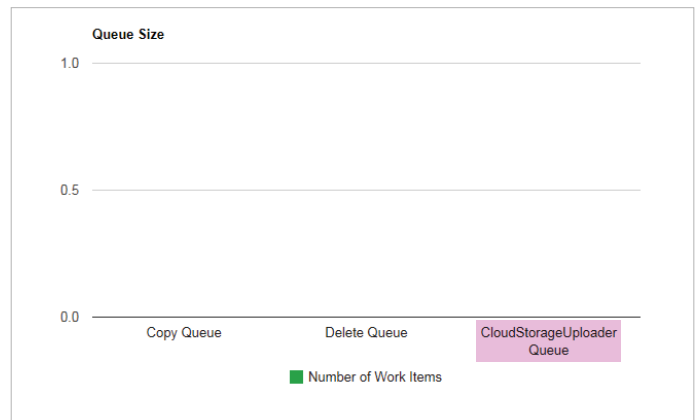
14. Verify the StorageZones Controller Status. The **Citrix Cloud Storage Uploader Service (Azure)** monitors the background uploader service for Azure.

15. Also, the **CloudStorageUploader Queue** monitors the Azure upload queue folder.



The screenshot shows the 'StorageZones Controller Status' page. It contains a table with the following data:

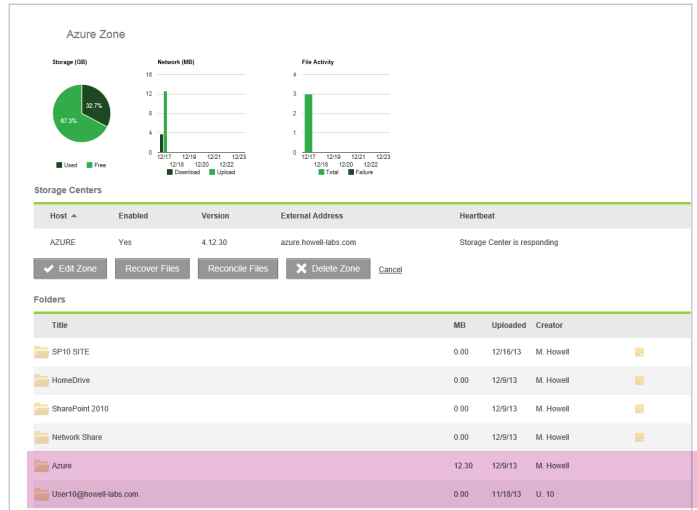
Config Name	Result	Details
Registry Permissions Access	✓	Permissions OK
Storage Location Access	✓	Permissions OK
IIS User Account Configuration	✓	OK
File Cleanup Service Status	✓	Running
File Copy Service Status	✓	Running
File Upload Service Status	✓	Running
ShareFile Connectivity from Management Service	✓	OK (Last Attempt at 2013-12-23 11:38:17)
ShareFile Connectivity from StorageZones Controller Website	✓	OK (Last Attempt at 2013-12-23 11:39:03)
ShareFile Connectivity from File Cleanup Service	✓	OK (Last Attempt at 2013-12-22 07:18:57)
ShareFile Connectivity from File Copy Service	✓	OK (Last Attempt at 2013-12-23 11:38:58)
Queue SDK Connectivity	✓	OK
Proxy Configuration	✓	Proxy Not Configured
Citrix Cloud Storage Uploader Service (Azure)	✓	OK (Last attempt at 11:37:03 AM)



Using the Azure StorageZone in ShareFile.com

1. Log into your ShareFile Enterprise with an administrator's account.
2. Navigate to **Admin | StorageZones** and select the **Azure StorageZone** configured in the previous section.

StorageZones can be assigned at the folder or user level highlighted in red.



Configuring a Folder in ShareFile to use the Azure StorageZone

1. Navigate to **Home | Shared Folders** and click **Create Folder**.
2. Enter a Folder Name and description (optional). Don't check the Add New Users box. Select the Azure StorageZone from the drop down menu.
3. Click **Create Folder**

Any files uploaded to this folder will be stored in the Azure cloud.

Create Folder

Name:

Description:

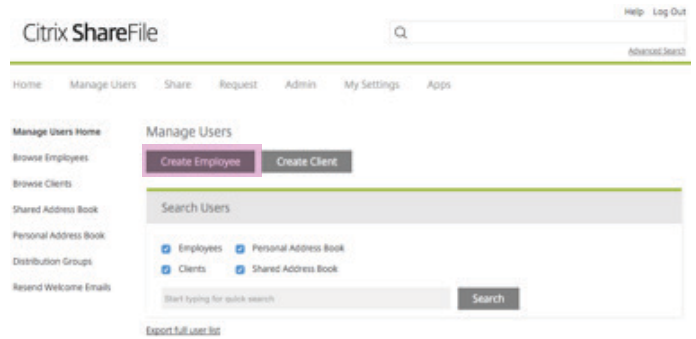
Add Users: Add People to Folder

Storage Zone: ShareFile US East

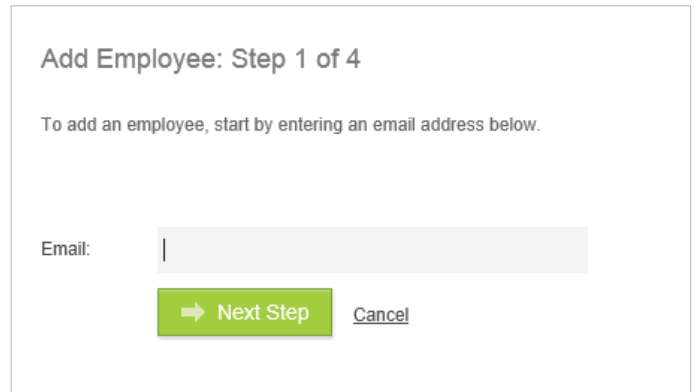
Create Folder **Cancel**

Configuring a User in ShareFile to use the Azure StorageZone

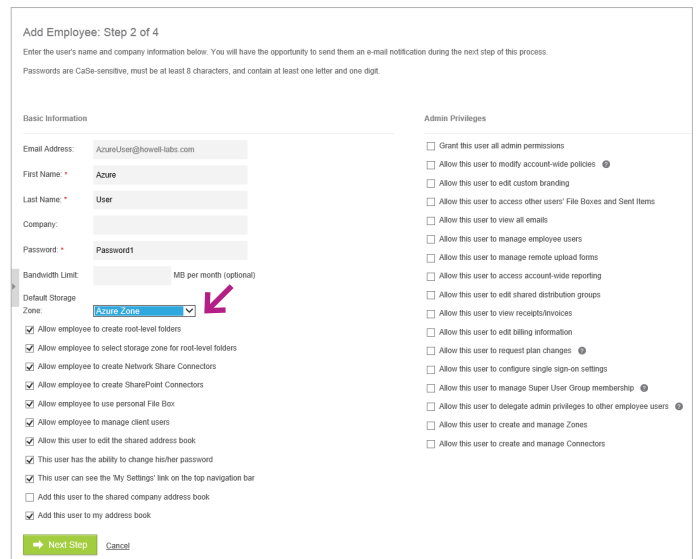
1. Navigate to **Manage Users** click **Create Employee**.



2. Enter the e-mail address of the employee. Click **Next Step**.



3. Enter the First and Last Name of the employee. There will be a randomly generated Password created, you can change that if you want. Change the **Default Storage Zone** to the Azure StorageZone created earlier. Add any additional privileges and click **Next Step**.



4. In Step 3 of 4 (Add Employee to Folders) click **Skip this step.**
5. In Step 4 of 4 (Welcome Email) select the appropriate bullet and click **Finish.**
Any files uploaded by this user will be stored in the Azure cloud.

You have successfully installed ShareFile’s StorageZones Controller software, configured the software to use a customer-managed Microsoft’s Azure storage service for data storage and configured ShareFile users and folders to use the Azure StorageZone.

Conclusion

The Citrix-Microsoft partnership allows our customers to leverage the reliable and powerful capabilities of the Microsoft Azure cloud platform by providing more cloud based storage options to customers delivering both Citrix-managed and customer-managed StorageZones on Microsoft Azure. The fully validated solution helps IT manage and deliver a highly available, secure and reliable service to its users meeting their mobility and collaboration needs.

1 Gartner Press Release, "Gartner Says Cloud Computing Will Become the Bulk of New IT Spend by 2016", October 24, 2013. <http://www.gartner.com/newsroom/id/2613015>

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