

IBM COS FA Gateway

*ADMINISTRATOR GUIDE*



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## CHAPTER 1. INTRODUCTION TO THE IBM COS FA GATEWAY

**Note:** Features and functionality in the user interface that are not covered in this documentation are not supported. For details about activating these features, contact IBM.

IBM Cloud Object Storage File Access (COS FA) is a software defined offering that provides SMB and NFS protocol interfaces to applications to store, archive and retrieve infrequently accessed files on IBM Cloud Object Storage.

The IBM COS FA Solution includes the following components:

- IBM COS FA Portal
- IBM COS FA Gateway

The IBM COS FA Portal is the management component of the offering, which enables the creation, delivery and management of the services mentioned below. The IBM COS FA Portal interacts with the IBM COS FA Gateways and efficiently handles file data exchange between these applications and users and the private/public IBM Cloud Object Storage side. A centralized management console makes it possible to effectively manage a very large number of connected IBM COS FA Gateways.

The IBM COS FA Gateway is the component that the application and other data sources are connected to, and allows LAN speed writes via SMB and NFS protocols, and is in charge of onboarding the data to IBM Cloud Object Storage instantly and seamlessly.

The IBM COS FA Gateway works in caching mode, which means that it has a dedicated local disk space to allow local LAN speed ingestion. The main storage is on the IBM COS FA Portal in the cloud with stubs saved on the IBM COS FA Gateway. A stub is a file with a tiny footprint that contains the metadata about the file, such as the file name, size, and modification date. Only the folder and file metadata and not the actual file content is saved locally. This results in the cost of storage being significantly lower. Also, systems with many file changes, where only some of the files are required locally, don't over use bandwidth between the cloud and IBM COS FA Gateway. Only the required files are passed across the wire.

When a user accesses a stub file, the file is downloaded. After the download has completed, the file is *unstubbed*. Any changes to the file are synced back to the IBM COS FA Portal.

IBM COS FA Gateways are virtual appliances, which can be installed on any customer provided ESXi, Hyper-V, or KVM/OpenStack environment.

The IBM COS FA Portal was designed to scale from tens to hundreds and thousands of connected IBM COS FA Gateways and to support an easy to scale file system with PBs of data and more. The IBM COS FA Portal it is capable of supporting both *scale-up* and *scale-out* deployment schemes: administrators may deploy the IBM COS FA Portal software on increasingly more powerful compute platforms, thus scaling the deployment up. Alternatively, they can distribute the IBM COS FA Portal processes on multiple concurrent compute platforms, thus scaling the deployment out. In addition, the file system is fully scalable by enlarging the database to accommodate data capacity growth.

## ACCESSING AN IBM COS FA GATEWAY

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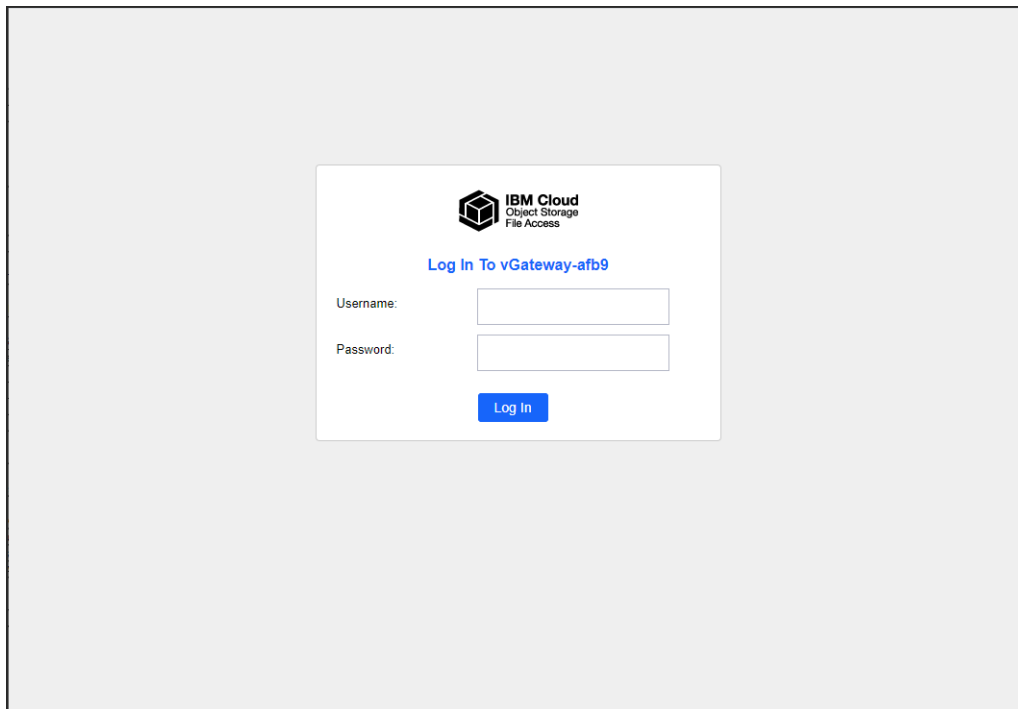
IBM COS FA Gateways are managed via a web-based user interface.

**To connect to an IBM COS FA Gateway:**

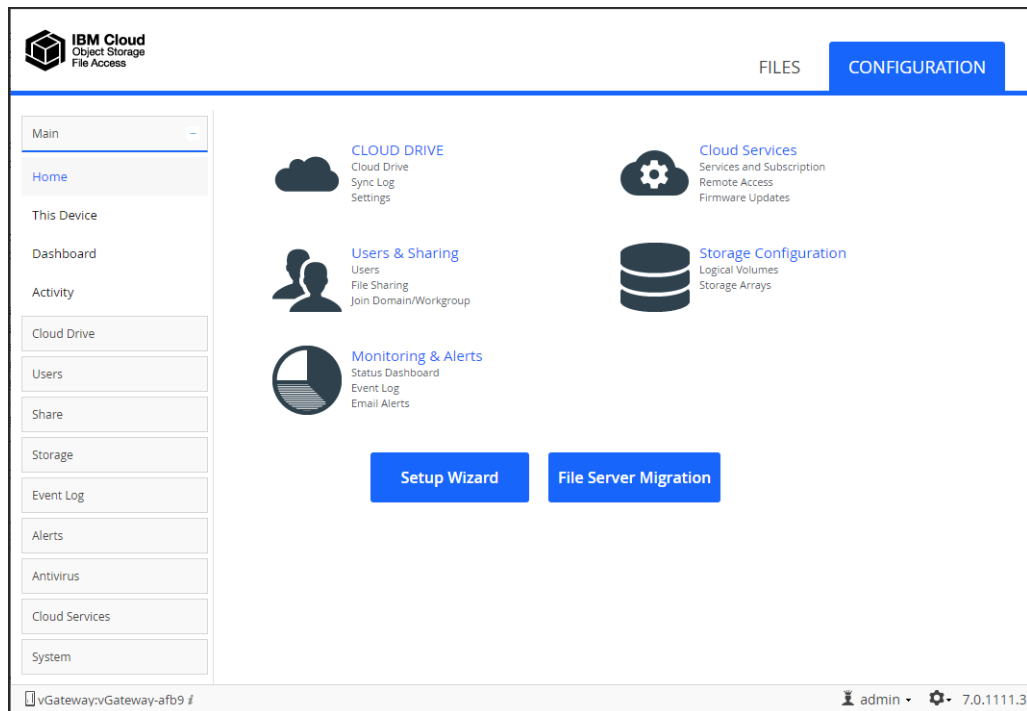
- 1 Open a web browser. You can use any of the latest two releases of Google Chrome, Apple Safari and Microsoft Edge.
- 2 Enter the IBM COS FA Gateway's IP address to navigate to the IBM COS FA Gateway.

### Logging in

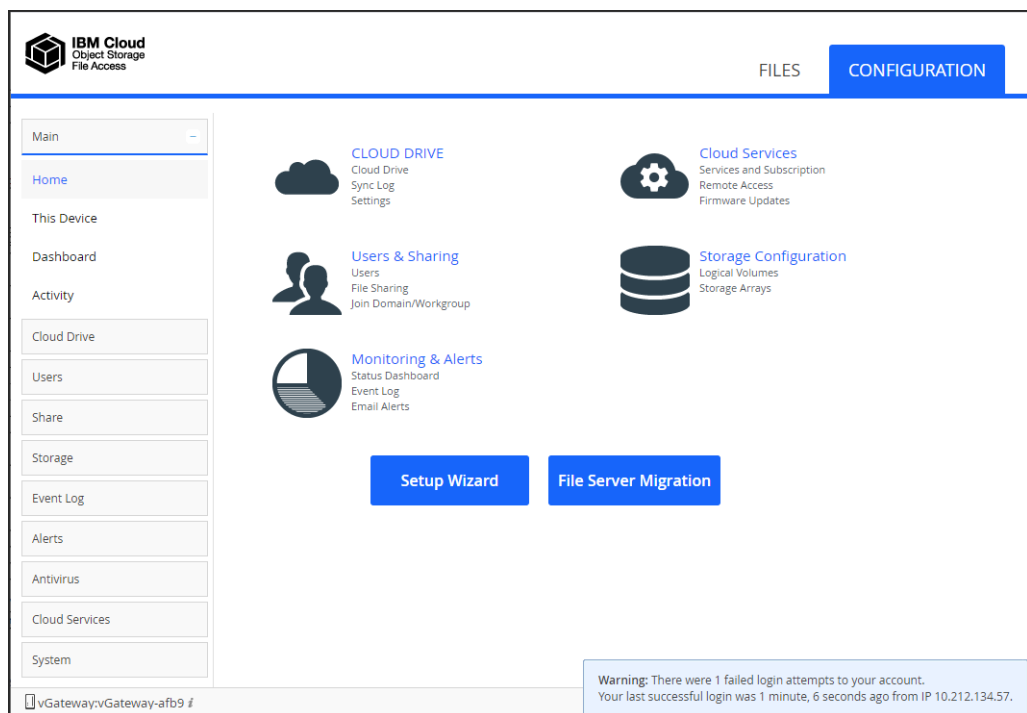
Each time you connect to the interface your browser displays the **Log In** page:



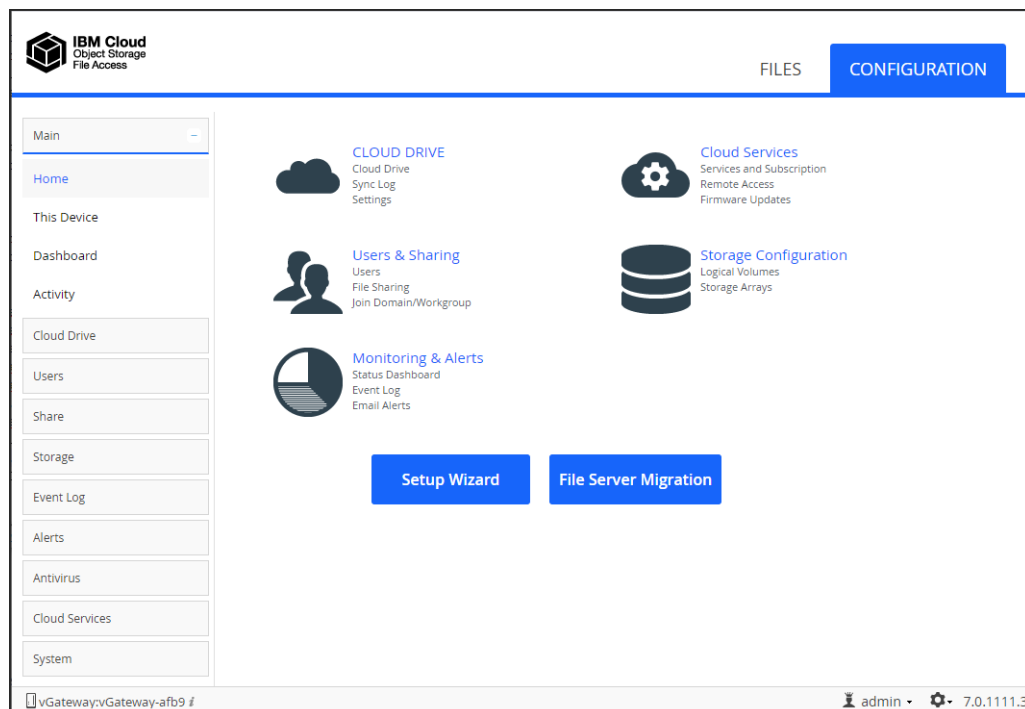
- 1 Enter your user name and password for accessing the IBM COS FA Gateway.  
The **admin** user is defined as part of the initial setup immediately after installation. All other users are added by the administrator, as described in [Adding and Editing Users](#). For details of the initial setup, see the *IBM COS FA Gateway Setup Guide*.  
**Note:** When the IBM COS FA Gateway connected to Active Directory, the user name to log in can be the user name or the Active Directory UPN (user principal name).
- 2 Click **Log In**.  
As a member of the Administrators or Read Only Administrators user groups, the **CONFIGURATION** tab's **Main > Home** page opens, displaying shortcuts to pages of the IBM COS FA Gateway user interface.



Details of logins and login attempts are displayed on each login.



## NAVIGATING THE IBM COS FA GATEWAY USER INTERFACE



The IBM COS FA Gateway user interface consists of the following elements:

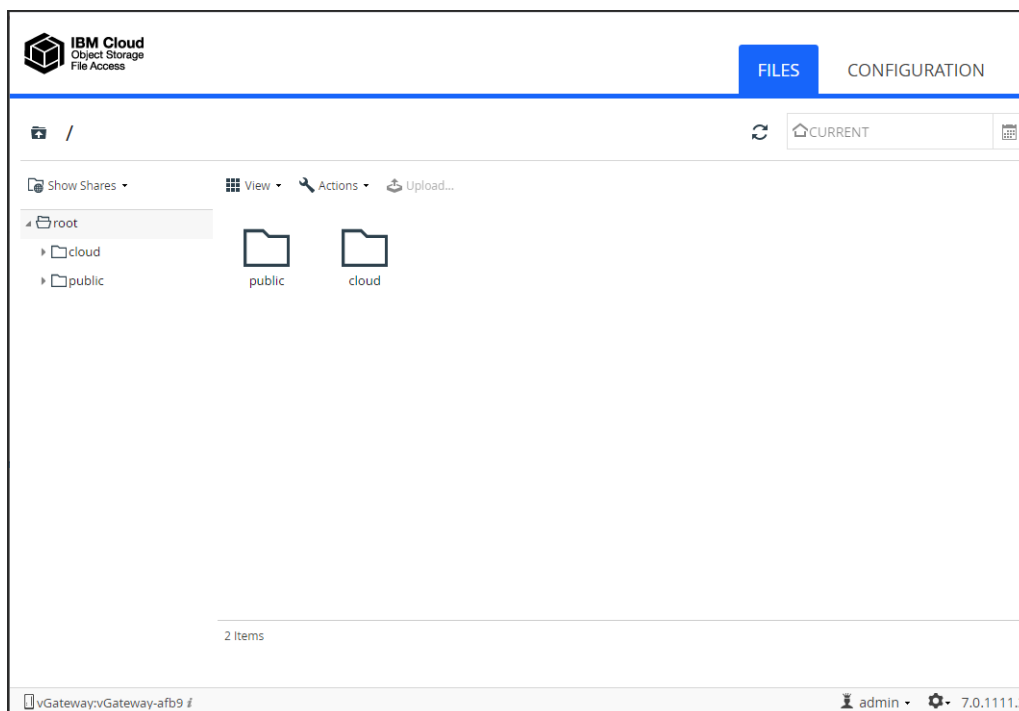
- Across the top of the user interface the following tabs are available:
  - FILES** tab – Enables you to view and manage the files and folders on the IBM COS FA Gateway.
  - CONFIGURATION** tab – Enables you to perform configuration tasks.
- The central portion of the user interface displays the content for the selected tab.
- Across the bottom of the user interface the following information is displayed:
  - The model number and name of the IBM COS FA Gateway is displayed on the left.
  - Your user name. Clicking the user name displays a drop-down menu with the following options:
    - Log out** – log out of the IBM COS FA Gateway.
    - Change Password** – Change the password to access the IBM COS FA Gateway with the current user. The password must be at least eight characters and must include at least a letter, digit and special character, such as ~, @, #, \$, %, ^, &, (.
    - Help** – Open the online help for the IBM COS FA Gateway in a new tab.
  - Menu for restarting and shutting down the IBM COS FA Gateway.
  - The firmware version.



## FILES Tab

Use the **FILES** tab to manage folders and files on the IBM COS FA Gateway.

**Note:** You can also map to the folders and files from your file manager instead of using the **FILES** tab.



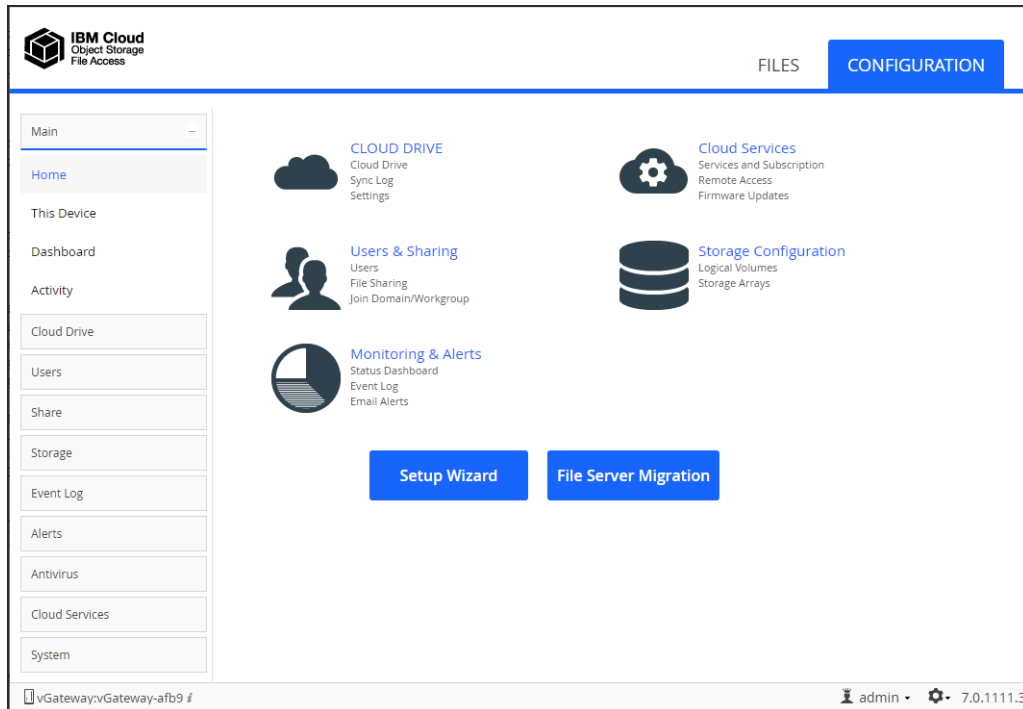
The tab includes the following:

- **Show Shares or Show Volumes.** Click the arrow to toggle between these views:  
**Show Shares** – Displays all network shares and the folders they contain.  
**Show Volumes** – Displays both volumes and network shares. In this view, you can see and manage folders that are not included in any network share.
- A tree of the **Shares** or **Volumes** on the IBM COS FA Gateway and any folders they contain.
- **View** – The way the folders are displayed:  
**Details** – The folders and files are displayed in a table with additional information such as the file type, size and last modification date.  
**Large Icons** – The folders and files are displayed as large icons. Selecting an icon displays the information about the file or folder.
- **Actions** – Actions you can perform on a selected folder or file.
- **Upload** – Upload a file to a folder to the selected folder.

For more detailed information, see [Using the FILES Tab](#).

## CONFIGURATION Tab

Use the **CONFIGURATION** tab to configure the IBM COS FA Gateway.



The tab includes the following:

- The left side of the user interface is the navigation pane.
- The central portion of the user interface, **Main > Home**, displays the content for the navigation pane item. Under each main item are quick links to navigation pane items. For example, you can set up remote access by selecting **Cloud Services > Remote Access** in the navigation pane or in **Main > Home**, clicking **Remote Access** under the **Cloud Services** area.

## USING THE FILES TAB

The **FILES** tab enables you to manage the files stored on the IBM COS FA Gateway.

**Note:** You can also map to the folders and files from your file manager instead of using the **FILES** tab.

### The FILES Tab Views

The Shares and Volumes views are supported:

**Show Shares** – Displays all network shares and the folders they contain.

**Show Volumes** – Displays both volumes and network shares. In this view, you can see and manage folders that are not included in any network share.

**Note:** The **Show Volumes** view is available only to Administrators and Read Only Administrators groups.

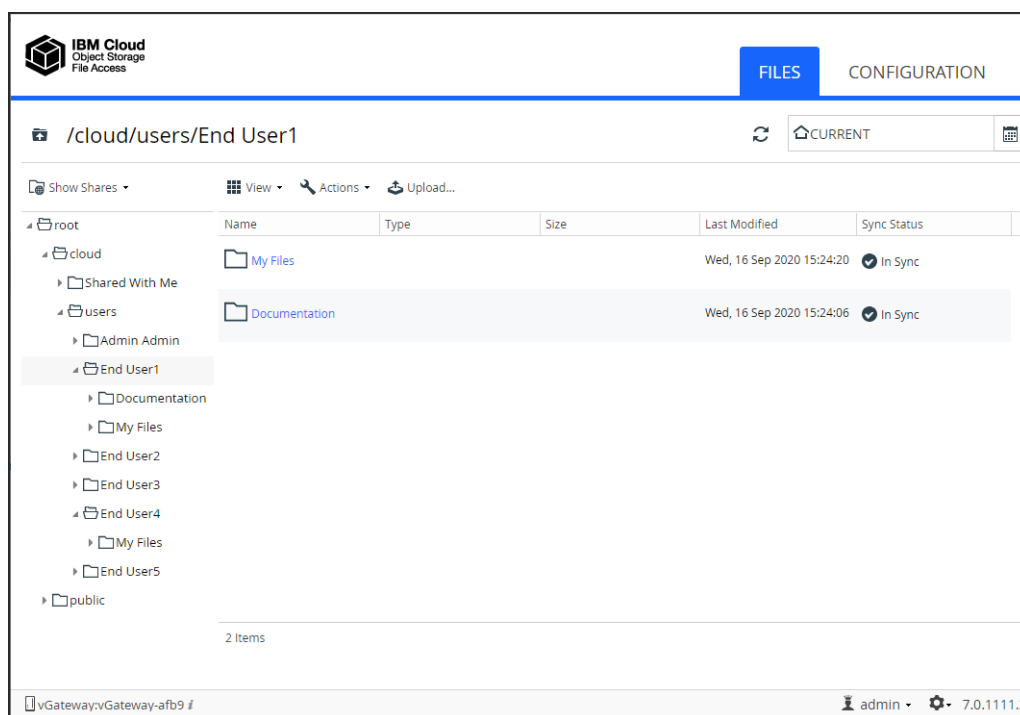
To change the tree pane view, click the **Show Shares/Show Volume** option and then select the desired view.

## Viewing Folder or File Details

You can view the folder structure and view or download the contents.

### To view the folder structure:

- 1 In the **FILES** tab, in the **Show Shares** view, navigate to the folder or file.  
The folder or file is displayed in the right pane.



When viewing the cloud drive synchronization folder (**root/cloud**), each file is marked with an icon indicating its current synchronization status:

- ✓ – Folders or files that are in sync.
- 🔄 – Files that are currently synchronizing.
- 📁 – Files that are stubs.

In **Details** view, the icon is displayed in the **Sync Status** column. In **Large** view, the icon is displayed over the file or folder.

- 2 In the right pane, select the file or folder.  
The selected item's details appear at the bottom of the right pane.  
If the right pane is in **Details** view, the file and folder details are displayed in the table, as well.

### To view the folder structure from a file manager:

- Use the following address to access the folders and files from a file manager, for example, Windows File Explorer or Mac Finder: `\\IBM_COS_FA_Gateway_Ip\cloud`.  
where *IBM\_COS\_FA\_Gateway\_Ip* is the IP address of the IBM COS FA Gateway.  
When accessing the IBM COS FA Gateway from a Mac machine you need to following the procedure in [Accessing an IBM COS FA Gateway From a Mac](#).

**Note:** The IBM COS FA Gateway user interface is case sensitive, so file and folder names with the same characters, but different cases, such as MYFOLDER, MyFolder and myfolder are different folders. When connecting to the IBM COS FA Gateway using Windows File Sharing, SMB protocol, which is not case-sensitive, these folders or files are treated as having the same name.

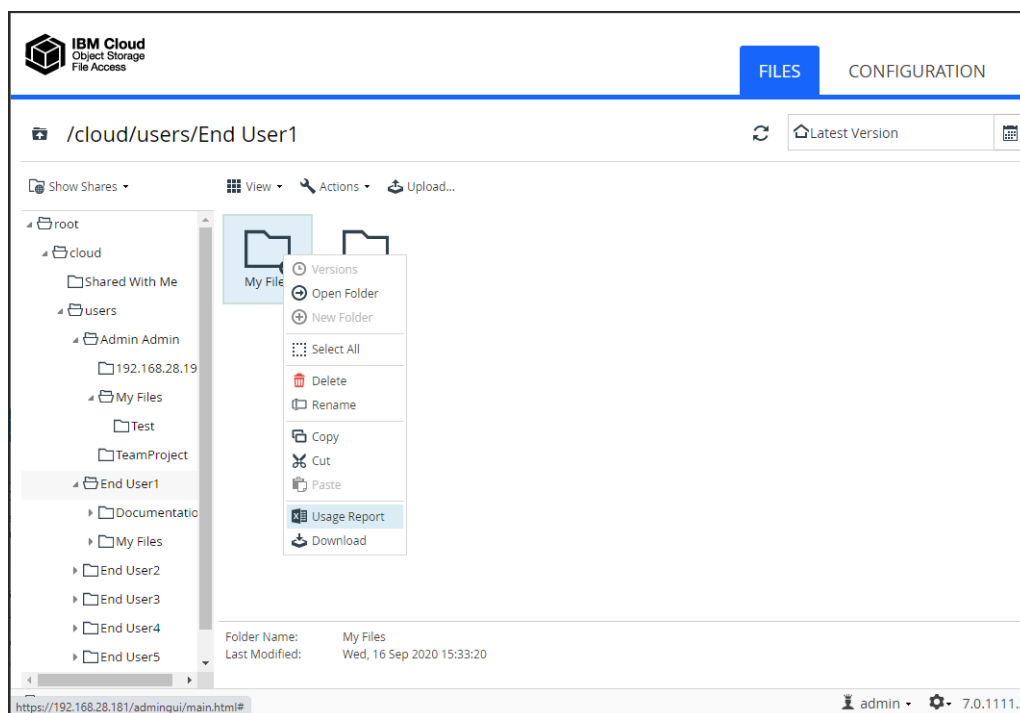
## Creating Folder Usage Reports

You can create a folder usage report that displays detailed information about the folder. The report is saved to your computer as a comma separated values (\*.csv) spreadsheet file.

**To create a folder usage report:**

- 1 In the **FILES** tab, in the **Show Shares** view, navigate to the folder.
- 2 In the right pane, right-click the folder and select **Usage Report** from the menu.

**Note:** You can also generate the report from the **Actions** option.



The generated usage report has the following columns:

- The size in kilobytes of the folder and subfolders.
- The number of files in the folder and subfolders.
- The path to the folder.

At the end of the report, the total size and number of files is displayed.

## Downloading Files and Folders

**To download an individual file:**

- 1 In the **FILES** tab, in the **Show Shares** view, navigate to the folder containing the file.
- 2 In the right pane right-click the file and select **Download** from the menu.

The file is downloaded to your computer.

**Note:** Double-clicking the file in **Large** view, or clicking the file in **Details** view either displays the file for viewing, for example, a PDF file, or downloads it.

**To download multiple files or entire folders:**

- 1 In the **FILES** tab, in the **Show Shares** view, navigate to the folder.
- 2 In the right pane, select the folders.
- 3 Right-click the file and select **Download** from the menu.

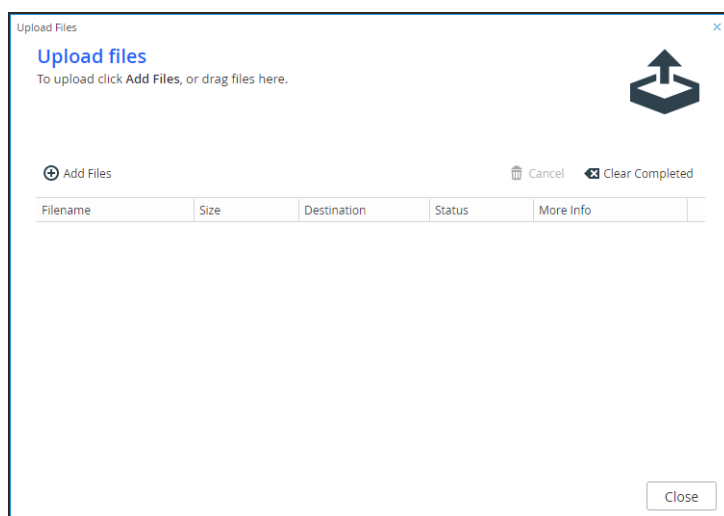
The selected content is downloaded to your computer as a .ZIP file.

**Note:** The right-click options are also available from the **Actions** option.

## Uploading Files

**To upload files:**

- 1 In the **FILES** tab, in the **Show Shares** view, navigate to the folder.
- 2 In the right pane, click **Upload**.  
The **Upload files** window is displayed.

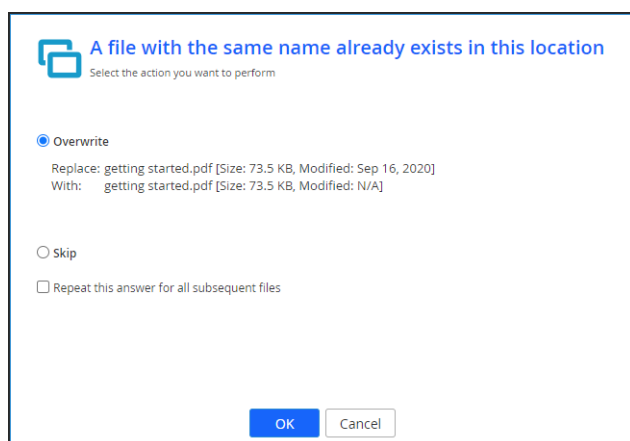


- 3 Click **Add files** and browse to the file.

**Note:** File names are case-sensitive. For example, *Getting Started.pdf* is treated as a separate file to *getting started.pdf*.

If you are using Chrome or FireFox as your browser, you can drag-and-drop a file from your computer to the **Upload files** window.

- 4 If the file already exists, the following window is displayed.



To overwrite the file with the file on your computer, select the **Overwrite** option and click **OK**. Click **Close**.

**To clear the list of completed uploads:**

- In the **Upload files** window, click **Clear Completed**.

**To cancel an upload:**

- In the **Upload files** window, select the upload you want to cancel, and click **Cancel**.

**Creating New Folders****To create a new folder:**

- 1 In the **FILES** tab, in the **Show Shares** view, navigate to the parent folder.
- 2 Right-click the folder and select **New Folder** from the menu.  
The **Choose a name** window is displayed.
- 3 Enter a name for the new folder.
- 4 Click **OK**.

**Note:** The right-click options are also available from the **Actions** option.

**Renaming Files and Folders****To rename a file or folder:**

- 1 In the **FILES** tab, in the **Show Shares** view, navigate to the folder or file.
- 2 Right-click the folder or file and select **Rename** from the menu.  
The **Choose a name** window is displayed.
- 3 Enter a new name.
- 4 Click **OK**.

**Note:** The right-click options are also available from the **Actions** option.

**Copying and Moving Files and Folders**

You can copy or move files and folders within the IBM COS FA Gateway to a different file location.

**To copy or move files and folders:**

- 1 In the **FILES** tab, in the **Show Shares** view, navigate to the folder or file.
- 2 To copy a file or folder, right-click the folder or file and select **Copy** from the menu.
- 3 To move a file or folder, right-click the folder or file and select **Cut** from the menu.
- 4 Navigate to the target folder, right-click in the folder and select **Paste**.

**Note:** Both standard Windows keyboard shortcuts, such as Ctrl-C to copy a file or folder and Ctrl-V to paste it, and **Copy**, **Cut** and **Paste** options from **Actions** can also be used.

**Deleting Files and Folders**

- 1 In the **FILES** tab, in the **Show Shares** view, navigate to the folder or file.
- 1 Right-click the file or folder to delete and click **Delete**.
- 2 Click **Yes** to confirm the delete.

**Note:** The right-click options are also available from the **Actions** option.

## CHAPTER 2. SETTING UP THE IBM COS FA GATEWAY

Setting the IBM COS FA Gateway time and language, or enabling remote access from an IBM COS FA Portal is performed from within the IBM COS FA Gateway user interface.

In this chapter

- [Viewing IBM COS FA Gateway Details](#)
- [Setting a Name and Location to Identify the IBM COS FA Gateway](#)
- [Setting the IBM COS FA Gateway Time and Date](#)
- [Configuring the User Interface Language](#)
- [Configuring Proxy Settings](#)
- [Enabling Remote Access to the IBM COS FA Gateway](#)
- [Saving IBM COS FA Gateway Settings](#)
- [Changing the IBM COS FA Gateway License](#)

Setting up the IBM COS FA Gateway storage and users is described in [Storage Setup](#) and [Adding and Editing Users](#), if this was not done during the initial IBM COS FA Gateway set up, as described in the *IBM COS FA Gateway Setup Guide*. Configuring the IBM COS FA Gateway for caching is described in [Setting Up the IBM COS FA Gateway For Caching](#).

### VIEWING IBM COS FA GATEWAY DETAILS

You can view general information about the IBM COS FA Gateway, including serial number, IBM COS FA Gateway model, and installed firmware version:

- In the **CONFIGURATION** tab, select **Main > This Device** in the navigation pane. The **This Device** page opens, displaying the product information.

The screenshot shows the IBM Cloud Object Storage File Access Gateway user interface. The top navigation bar includes the IBM logo and 'Object Storage File Access'. The main navigation pane on the left lists: Main, Home, This Device (selected), Dashboard, Activity, Cloud Drive, Users, Share, Storage, Event Log, Alerts, Antivirus, Cloud Services, and System. The top right has tabs for 'FILES' and 'CONFIGURATION'. The 'This Device' page displays a 3D box icon with 'v1' and a message: 'Thank you for using IBM COS File Access Gateway. By integrating Network Attached Storage with cloud services, this Cloud Attached Storage device allows you to share, back up, and synchronize your files.' Below this is a table of device information:

Device License:	EV16	<a href="#">Change</a>
Storage:	78.00 GB of 16.00 TB licensed	
RAM:	8.00 GB of 8.00 GB licensed	
MAC Address:	00:50:56:ad:af:b9	
Serial Number:	VMware-42 2d 41 1d 8f f3 8d 81-70 53 2b f7 be bf 47 a7	
Firmware Version:	7.0.1111.3	<a href="#">Update Firmware</a>
Device Name:	vGateway-afb9	<a href="#">Edit...</a>
Physical Location:	Not set	<a href="#">Edit...</a>

The bottom status bar shows 'vGateway:vGateway-afb9 #', 'admin', and '7.0.1111.3'.

## SETTING A NAME AND LOCATION TO IDENTIFY THE IBM COS FA GATEWAY

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You can configure the IBM COS FA Gateway's details, including its name and location. The IBM COS FA Gateway name is used as a unique identifier of this IBM COS FA Gateway on your network. The name must be different than any other IBM COS FA Gateway or PC on your network. The location field enables you to document your IBM COS FA Gateway's physical location, and is optional.

### To configure the IBM COS FA Gateway name and location:

- 1 In the **CONFIGURATION** tab, select **Main > This Device** in the navigation pane.  
The **This Device** page opens, displaying the product information.
- 2 To configure the IBM COS FA Gateway's name:
  - a Next to the **Device Name** field, click **Edit**.  
The **Edit Device Name** window is displayed.
  - b Enter the name to represent the IBM COS FA Gateway in your network neighborhood.
  - c Click **Save**.
- 3 Configure the IBM COS FA Gateway's physical location.
  - a Next to the **Physical Location** field, click **Edit**.  
The **Edit Physical Location** window is displayed.
  - b Enter the IBM COS FA Gateway's location.  
For example: "Delaware Branch Office".
  - c Click **Save**.

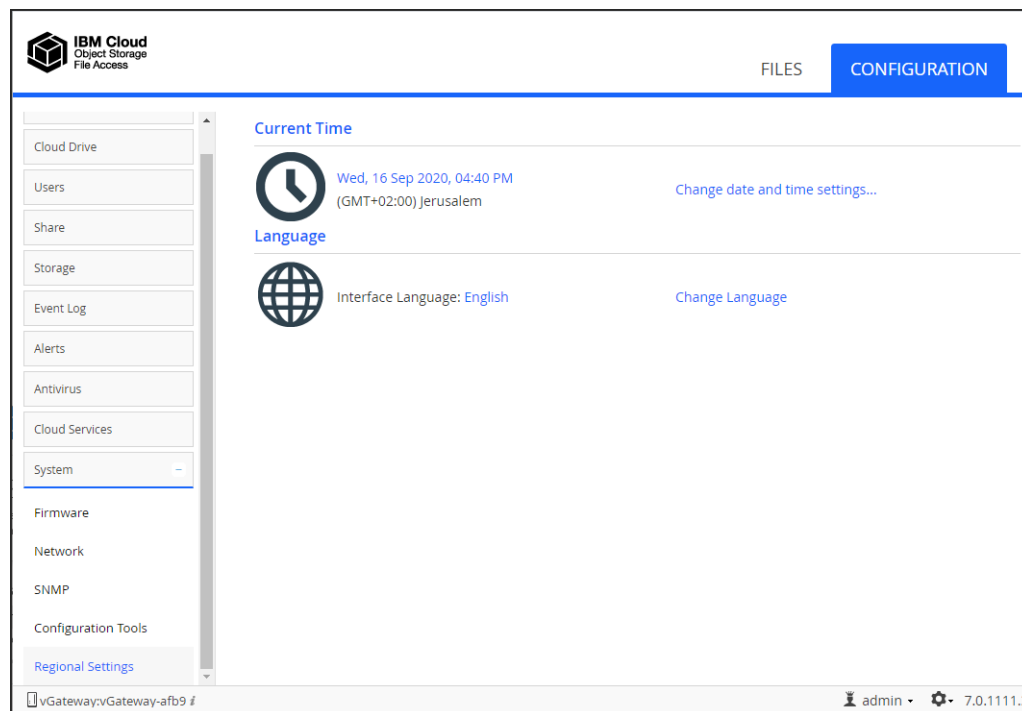


## SETTING THE IBM COS FA GATEWAY TIME AND DATE

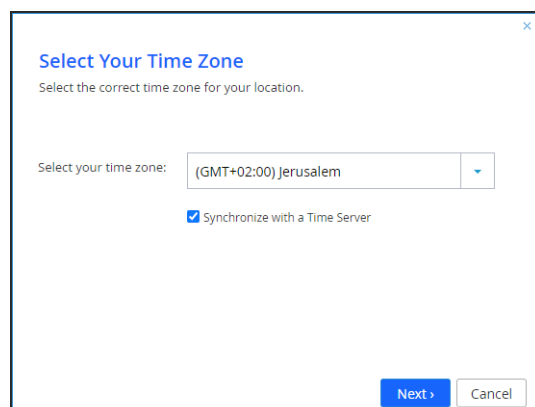
You can configure the IBM COS FA Gateway to obtain the time and date from a time server, or you can configure the time and date manually.

**To configure the IBM COS FA Gateway time and date:**

- 1 In the **CONFIGURATION** tab, select **System > Regional Settings** in the navigation pane. The **Regional Settings** page opens, displaying the date, time, and time zone currently configured for the IBM COS FA Gateway.



- 2 Click **Change date and time settings**. The **Time Setting Wizard** opens, displaying the **Select Your Time Zone** window.



- 3 Select your time zone.
- 4 To synchronize the IBM COS FA Gateway with a time server, select the **Synchronize with a Time Server** option. If you want to manually configure the date and time, clear the **Synchronize with a Time Server**

check box.

5 Click **Next**.


- If you chose to synchronize the IBM COS FA Gateway with a time server, the **Time Server Settings** window is displayed with a list of time servers with which the IBM COS FA Gateway will synchronize time and date settings.

To add a time server to the list, enter the server's URL in the provided field, and then click **Add**.

To remove a time server from the list, click  for the server to remove.

- If you chose to manually configure time and date settings on the IBM COS FA Gateway, the **Adjust Date & Time** window is displayed.

Do the following:

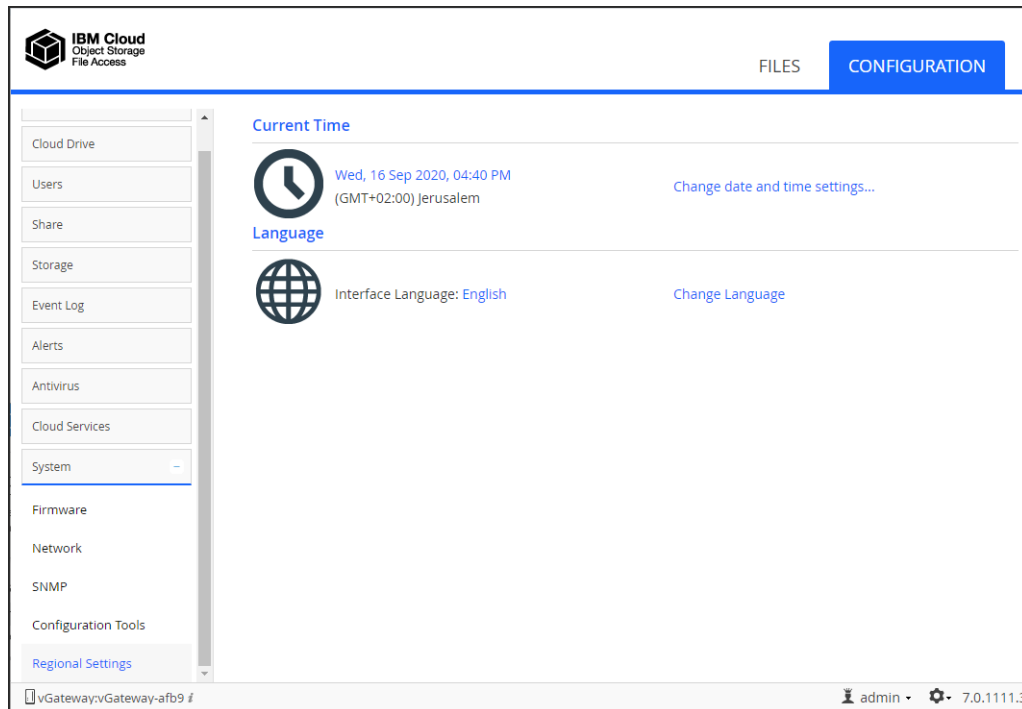
- i In the **Date** field, type the current date, or click  to select the date from a calendar.
- ii In the **Time** drop-down list, select the current time.
- iii Click **Next** and then **Finish**.

## CONFIGURING THE USER INTERFACE LANGUAGE

You can configure the language to be displayed in the IBM COS FA Gateway's user interface.

**To configure the user interface language:**

- 1 In the **CONFIGURATION** tab, select **System > Regional Settings** in the navigation pane. The **Regional Settings** page opens, displaying the currently configured date, time, and time zone for the IBM COS FA Gateway.



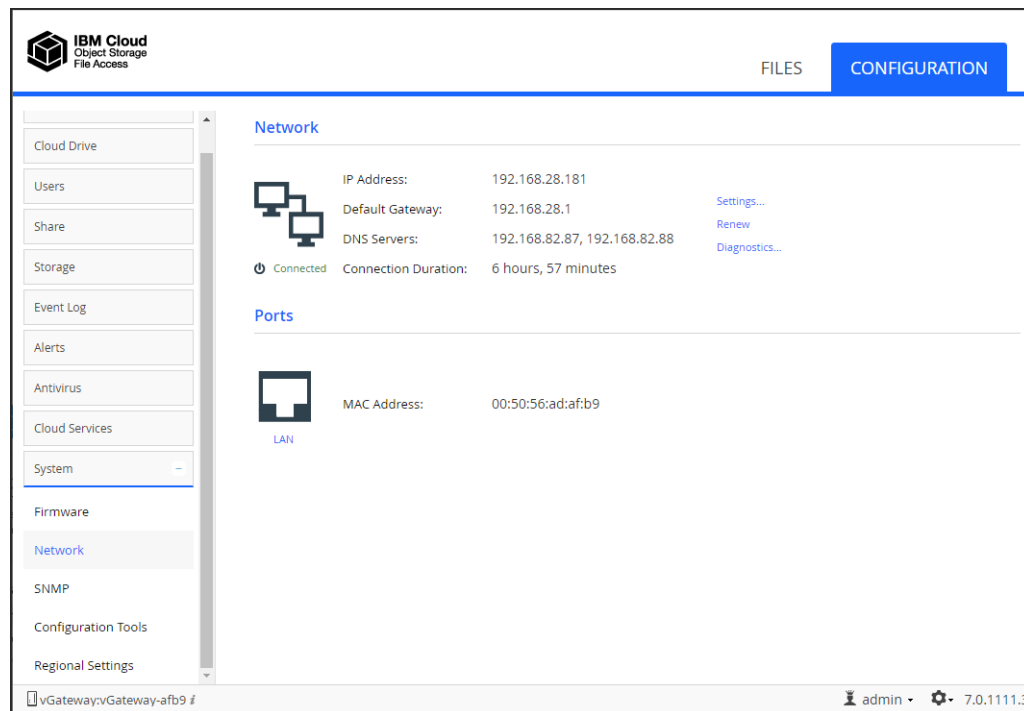
- 2 Click **Change Language**. The **Interface Language** window is displayed.
- 3 Select the desired language from the **Interface Language** drop-down.
- 4 Click **Save**.

## CONFIGURING PROXY SETTINGS

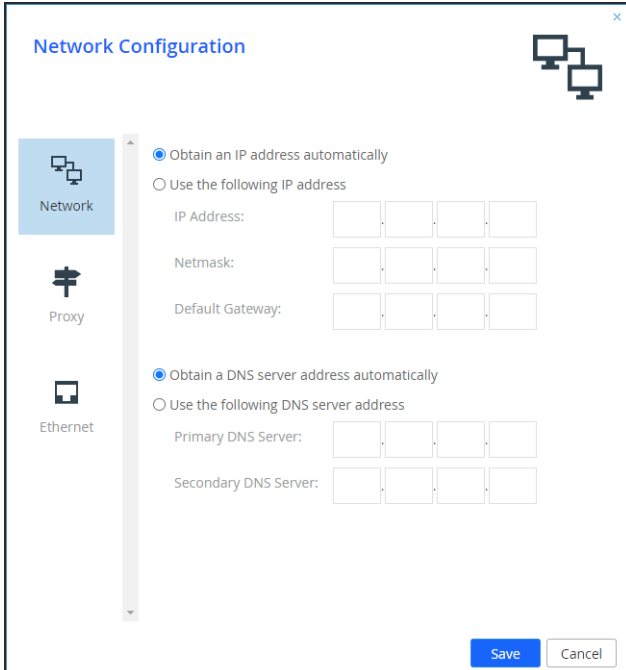
The IBM COS FA Gateway can be configured to connect to cloud services via a proxy server. HTTPS proxies that support the CONNECT method may be used.

**To configure proxy settings:**

- 1 In the **CONFIGURATION** tab, select **System > Network** in the navigation pane. The **Network** page is displayed.



- 2 Click **Settings**. The **Network Configuration** window is displayed.



**Network Configuration**

Network

Proxy

Ethernet

☒ Obtain an IP address automatically

☐ Use the following IP address

IP Address:

Netmask:

Default Gateway:

☒ Obtain a DNS server address automatically

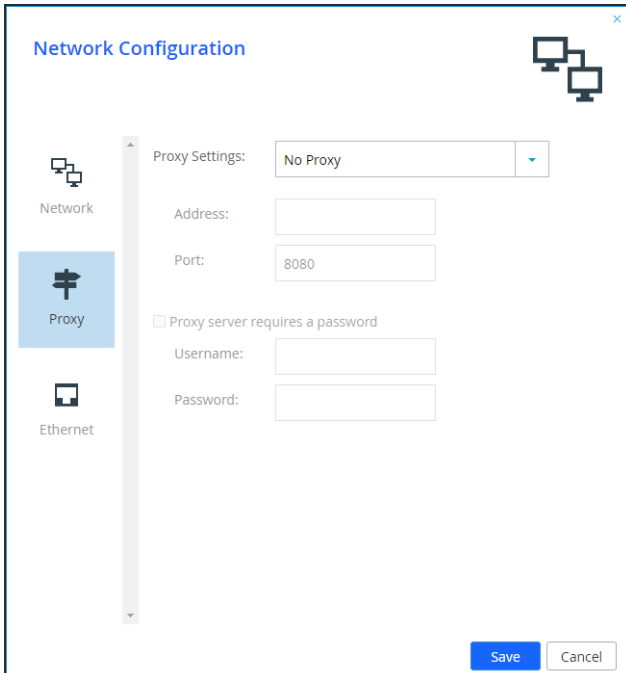
☐ Use the following DNS server address

Primary DNS Server:

Secondary DNS Server:

Save Cancel

3 Select the **Proxy** option.



**Network Configuration**

Network

Proxy

Ethernet

Proxy Settings: No Proxy

Address:

Port: 8080

☐ Proxy server requires a password

Username:

Password:

Save Cancel

4 Specify the proxy settings:

**Proxy Settings** – Select **Use HTTP Proxy** and configure the appropriate settings:

**Address** – The address of the proxy server.

**Port** – The proxy server port number.

**Proxy server requires a password** – Check to specify that the proxy server requires authentication via a username and password.

**Username** – The username for authenticating to the proxy server.

**Password** – The password for authenticating to the proxy server.

- 5 Click **Save**.

## ENABLING REMOTE ACCESS TO THE IBM COS FA GATEWAY

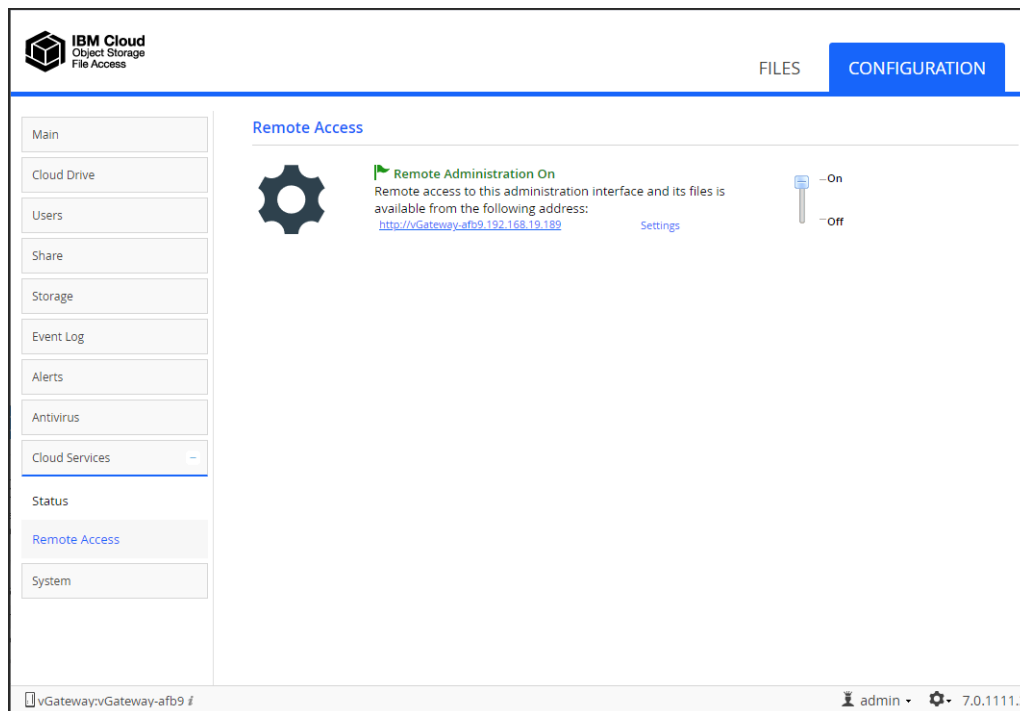
When the IBM COS FA Gateway is connected to a IBM COS FA Portal, you can access the IBM COS FA Gateway over the Internet by enabling **Remote Access**. Remote Access is a cloud service and when it is enabled, your IBM COS FA Gateway is assigned a unique DNS name. You can then use this DNS name to access the IBM COS FA Gateway anywhere, over the Internet.

You can always access the IBM COS FA Gateway from within the local network, regardless of the **Remote Access** setting.

**Note:** You do not need to open any ports on your firewall in order to access the IBM COS FA Gateway using the DNS name from a remote location.

**To enable and disable remote access:**

- 1 In the **CONFIGURATION** tab, select **Cloud Services > Remote Access** in the navigation pane.



- 2 Slide the on/off lever to the **On** position to turn on remote access, or to the **Off** position to disable remote access.

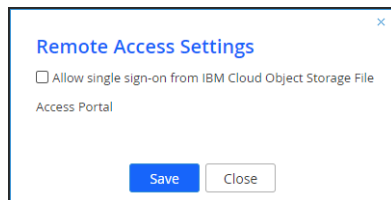
A link to the remote management page is displayed. Use this URL for remote access to the IBM COS FA Gateway.

### Allowing Single Sign-on from IBM COS FA Portal

The IBM COS FA Gateway user interface can be accessed by a logged in user from within the IBM COS FA Portal user interface, without the user entering IBM COS FA Gateway credentials. The user signed in to the IBM COS FA Portal must be the same user as the IBM COS FA Gateway user.

**To enable single sign-on to the IBM COS FA Gateway:**

- 1** In the **CONFIGURATION** tab, select **Cloud Services > Remote Access** in the navigation pane.
- 2** Click **Settings**.  
The Remote Access Settings window is displayed.



- 3** Check **Allow single sign on from IBM COS FA Portal**.
- 4** Click **Save**.

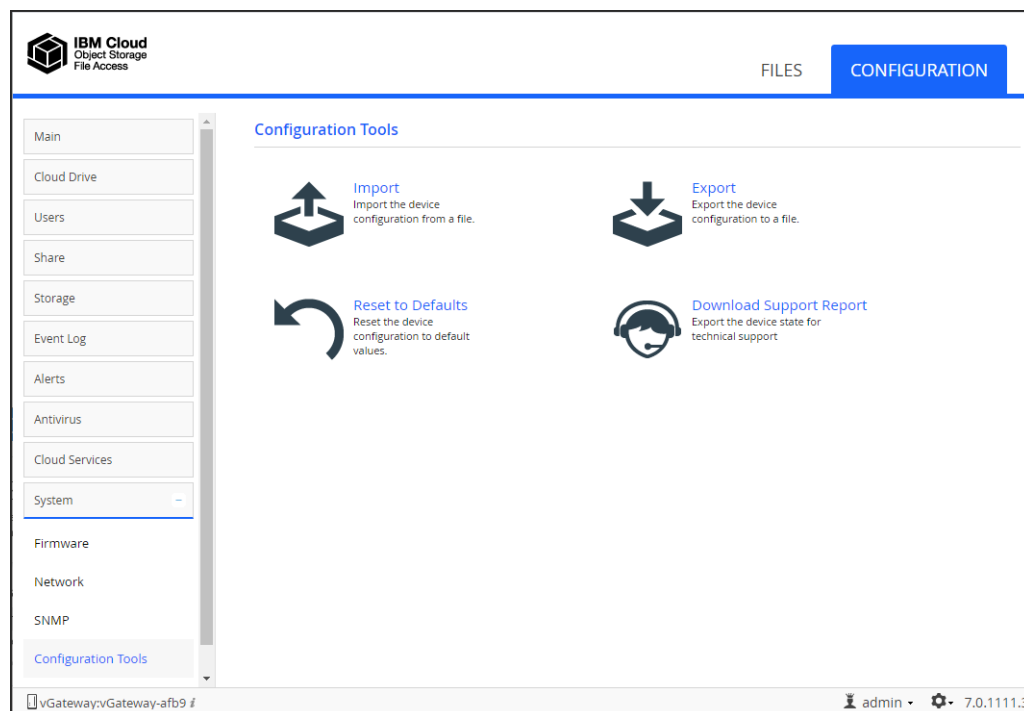
## SAVING IBM COS FA GATEWAY SETTINGS

You can manually export the IBM COS FA Gateway configuration to an XML file on your computer, and use this file to restore the IBM COS FA Gateway settings as needed.

### Exporting the Configuration

To export the IBM COS FA Gateway configuration to an XML file:

- 1 In the **CONFIGURATION** tab, select **System > Configuration Tools** in the navigation pane. The **Configuration Tools** page is displayed.



- 2 Click **Export**.  
The IBM COS FA Gateway configuration is exported to an XML file in your computer's download folder.

**Note:** For security reasons, all passwords are stored in an encrypted format. However, the export file information is sensitive and it is therefore recommended that you keep it in a safe place.

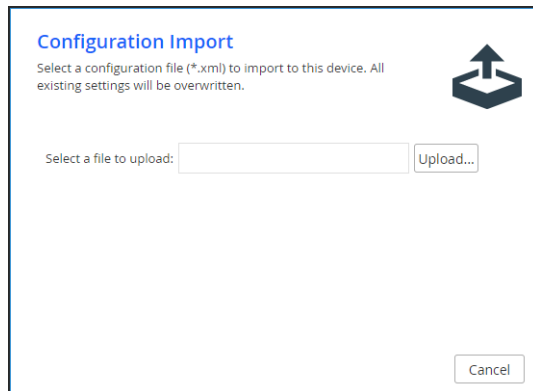
### Importing the Configuration

To import a IBM COS FA Gateway configuration from an XML configuration file:

- 1 In the **CONFIGURATION** tab, select **System > Configuration Tools** in the navigation pane. The **Configuration Tools** page is displayed.
- 2 Click **Import**.



The **Configuration Import** wizard opens, displaying the **Configuration Import** window.



- 3 Click **Upload** and browse to the desired configuration file and click **Open**.  
The configuration file is imported.  
When the upload is complete, the **Configuration Import Completed** screen is displayed.  
If any errors occurred during the import, they are displayed.
- 4 Click **Finish**.

## CHANGING THE IBM COS FA GATEWAY LICENSE

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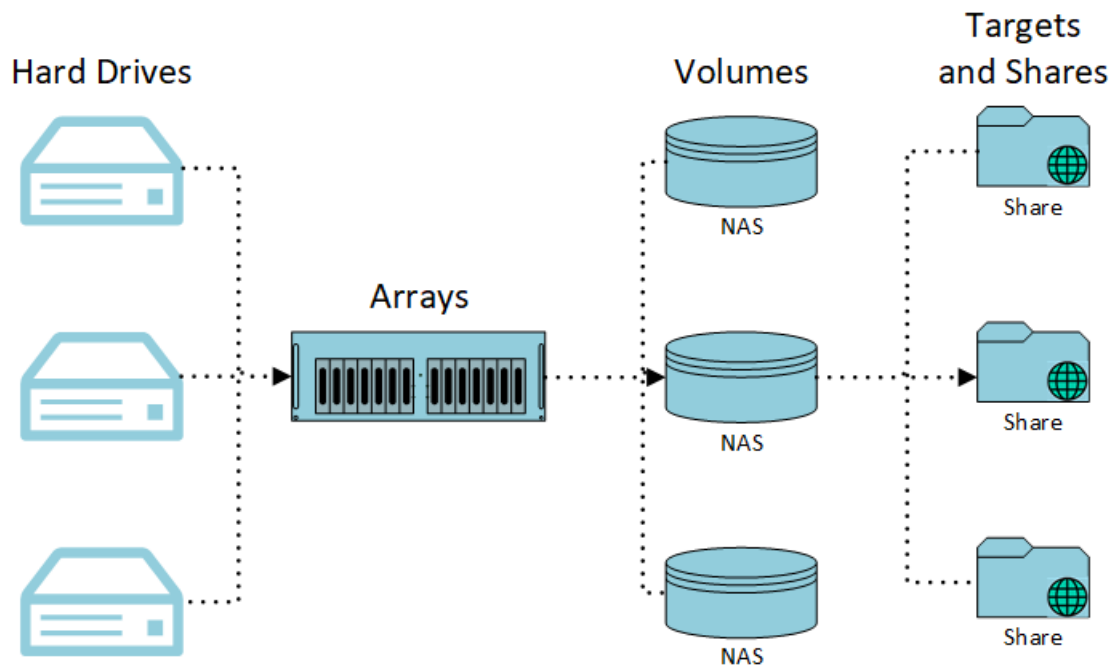
An IBM COS FA Gateway receives a license from IBM COS FA Portal. You can change the license level to another license level.

For details about activating this feature, contact IBM.

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## CHAPTER 3. MANAGING IBM COS FA GATEWAY STORAGE

IBM COS FA Gateways support NAS volumes. NAS volumes are accessible through file access protocols. You can create folders on NAS volumes and store files in the folders. You can also define folders as network shares and share them across the network, via several protocols.



You can create an array to combine your drives into a larger pool of storage, set up redundancy between drives, and/or increase performance. Once you've set up an array, you can create volumes, which are logical units of storage.

You can define additional virtual disks for an IBM COS FA Gateway and create RAIDs for these disks using the ESXi software. The IBM COS FA Gateway supports the definition of up to 16 virtual disks. Depending on your license, it is possible to enlarge the virtual disks.

### How is Storage Allocation Controlled

**Per share** – You can limit the size of a shared folder by creating a specific volume to store that folder.

**Per user** – You can enforce quotas per user, as described in [Allocating User Quotas](#), that limit how much space on a volume each user can fill.

## In this chapter

- [Storage Setup](#)
- [Managing Arrays](#)
- [Managing Volumes](#)

## STORAGE SETUP

You store the IBM COS FA Gateway data on volumes. You can create arrays to combine multiple disk drives and then create volumes or create volumes per disk.

### Which is the Right Type of Array

The following disk combinations are supported:

**Linear Concatenation (JBOD)** – A simple unifying of all the drives with the combined capacity of all the drives. If you have one or more drives, this type of array lets you use a set of drives like one drive. For example, one 500 GB drive and one 950 GB drive in such an array would act as a 1450 GB drive. You can then create volumes of any size on the array adding up to a total of 1450 GB.

**RAID0 (Striped)** – If you have two or more drives, this type of array combines the capacity of the drives and increases the read and write speed using striping. If you have two or more drives and you want to maximize your drive speed, you can create a **RAID0** array. In RAID0, data is striped across all the drives in the array. A RAID0 array acts as one drive with the combined capacity of all the drives in the array and faster performance. In **striping**, data is chopped up into data blocks, smaller pieces of data, and blocks are written to all the drives in the array instead of all the data being written to one drive. This means the writing is done in parallel and the performance is increased.

To detect the drives in your IBM COS FA Gateway and create the storage as **Linear Concatenation (JBOD)** with one logical volume using the whole capacity of the array, use the **Storage Setup Wizard** in either the **Arrays** or **Volumes** pages, described in [Automatically Creating an Array and Volume Using the Storage Setup Wizard](#).

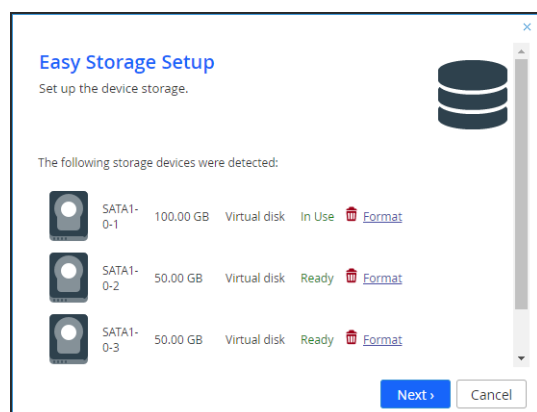
If you want to create a RAID0 array, use the procedure described in [Manually Creating an Array](#).

### Automatically Creating an Array and Volume Using the Storage Setup Wizard

When automatically creating an array and volume, the array is simple unification of all the drives with the combined capacity of all the drives (JBOD).

**To setup the IBM COS FA Gateway storage using the Storage Setup Wizard:**

- 1 In the **CONFIGURATION** tab, select **Storage > Arrays** or **Storage > Volumes** in the navigation pane and click **Storage Setup Wizard**.



A **Format** link is displayed if there is data on the drive. If there is no data on the drive, the drive's status is *Empty* and the drive is formatted automatically. Clicking **Format** and then **Yes** to confirm, formats the drive and erases all the data on the drive.

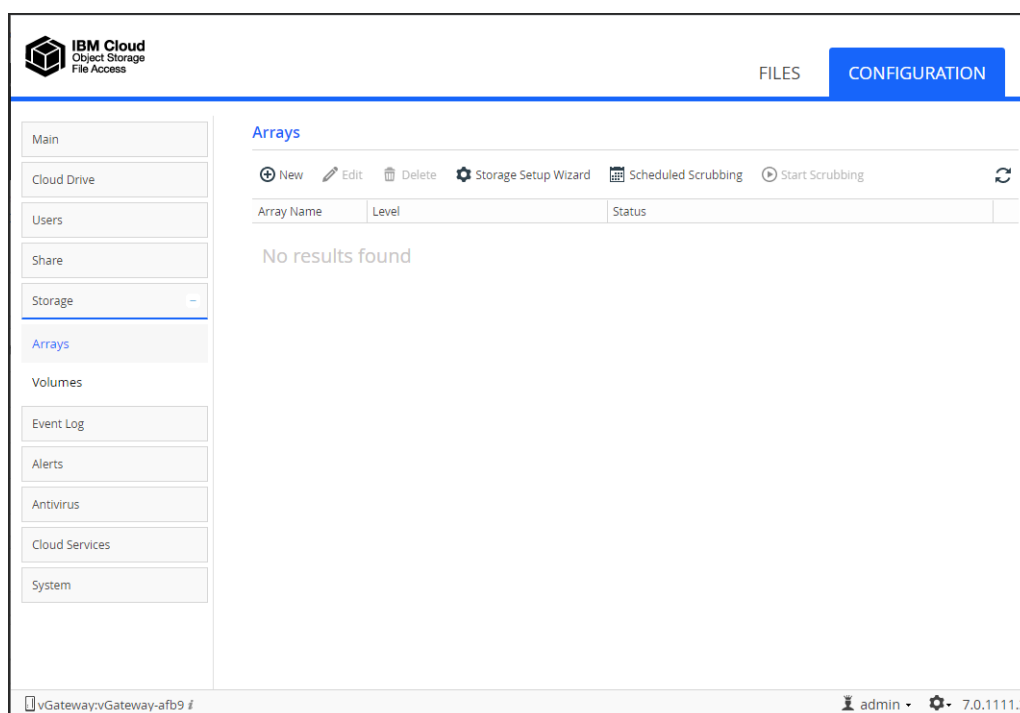
**Warning:** Formatting erases all data on the drive.

- 2 Click **Next** and then click **Finish** in the **Wizard Completed** screen.

## Manually Creating an Array

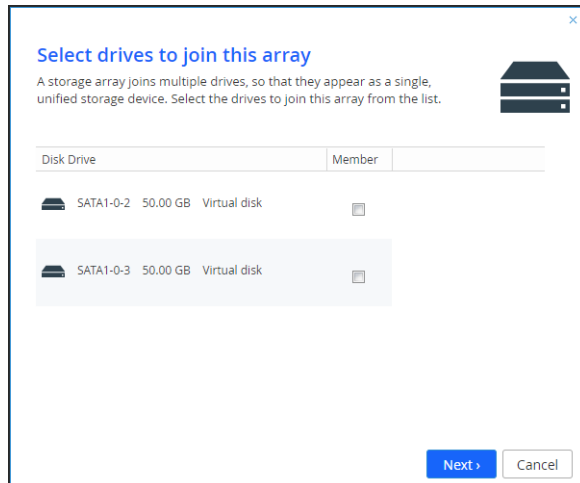
To create an array:

- 1 In the **CONFIGURATION** tab, select **Storage > Arrays** in the navigation pane. The **Arrays** page is displayed.



- 2 Click **New**.

The **Select drives to join this array** wizard is displayed, which shows you all drives available and asks you to select drives to join the new array.



For every drive, you can see the type of the drive and the capacity in GB.

- 3 Check the **Member** box for each drive you want to include in the array.

**Note:** You cannot include a hard drive that does not support SCT Error Recovery Control in the array.

- 4 Click **Next** and then select the type of array you want to create.

**Linear Concatenation (JBOD)** – A simple unifying of all the drives with the combined capacity of all the drives.

**RAID0 (Striped)** – Combines the capacity of the drives and increases the read and write speed using striping.

- 5 For RAID0, specify the **RAID Stripe Size**.

The size of blocks that data is divided into when it is written to the array and distributed across the drives. Reading and writing large data files sequentially generally benefits from a large stripe size. Small random reads and writes generally benefit from a smaller stripe size. The default value is 64K.

- 6 Click **Next** and enter a name for the array.

- 7 Click **Next**.

- 8 To immediately create a volume on the array, select the **I wish to create a logical volume on this storage array** check box.

- 9 Click **Finish**.

If you checked the box in step 8, you can proceed to create a volume. For details, see [Creating and Editing Volumes](#).

## MANAGING ARRAYS

### Modifying and Expanding Arrays

To make any changes to an array, for example, expanding the array after adding new disks, click its name in the **Arrays** page and then proceed through the wizard, as for creating a new array. For details see [Increasing Storage On an IBM COS FA Gateway Volume](#).

After expanding an array, the added disk space can be used to increase volume sizes. For details, see [Enlarging a Volume](#).

### Deleting Arrays

**Warning:** Deleting an array will result in the loss of all existing data on the array.

To delete an array, select the array, and then click **Delete**. Click **Yes** to confirm.

## MANAGING VOLUMES

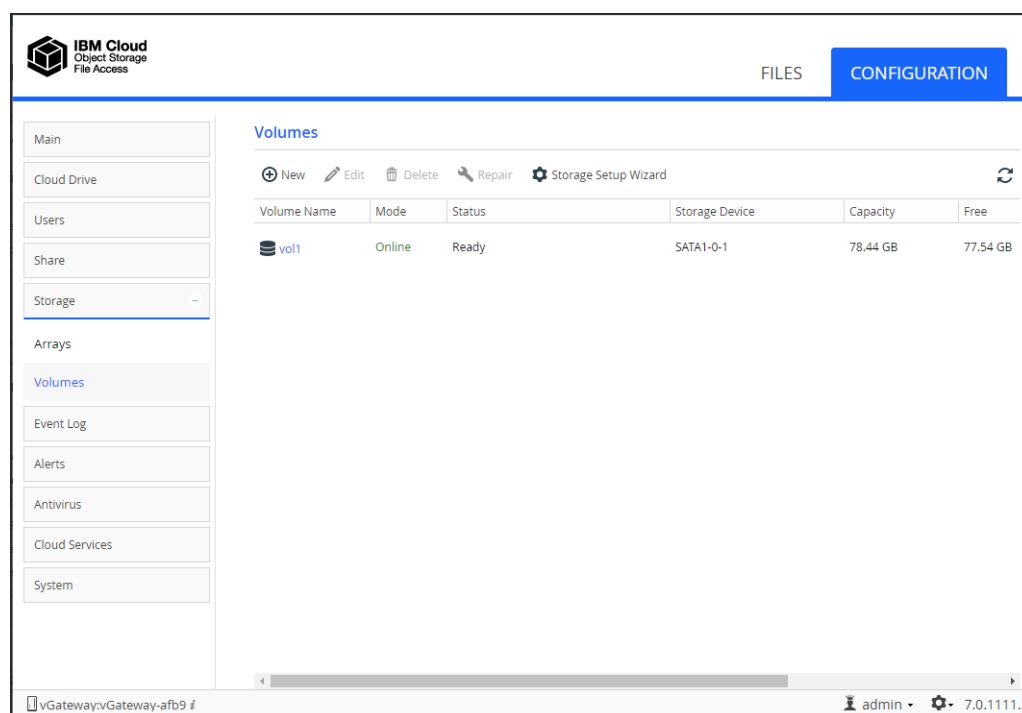
Volumes are logical partitions on your IBM COS FA Gateway that users can access. You create a NAS volume and the IBM COS FA Gateway acts as a files server for NAS volumes which can be accessed using any of the supported file sharing protocols.

The IBM COS FA Gateway supports XFS file systems. XFS volumes cannot be shrunk. IBM recommends starting with the required storage and then increasing the storage when using XFS rather than starting with a large storage which cannot be decreased.

### Creating and Editing Volumes

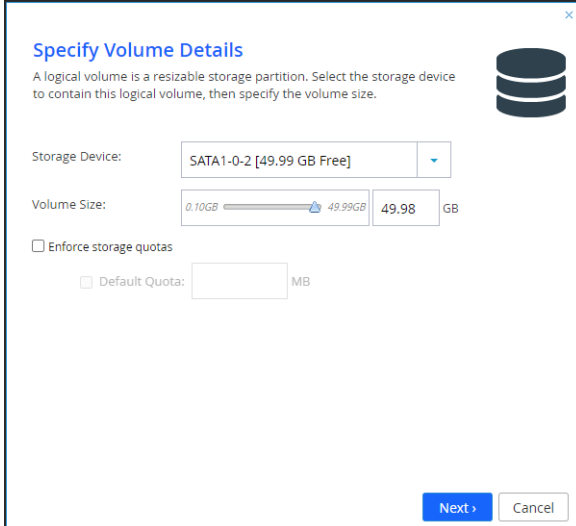
To create or edit a volume:

- 1 In the **CONFIGURATION** tab, select **Storage > Volumes** in the navigation pane. The **Volumes** page is displayed.



If a volume was not created when the IBM COS FA Gateway was installed, the page is empty.

- 2 Click **New** or select the volume to edit and click **Edit**.  
The **Specify Volume Details** screen is displayed.



**Specify Volume Details**

A logical volume is a resizable storage partition. Select the storage device to contain this logical volume, then specify the volume size.

Storage Device: SATA1-0-2 [49.99 GB Free]

Volume Size: 0.10GB 49.99GB 49.98 GB

☐ Enforce storage quotas

☐ Default Quota: MB

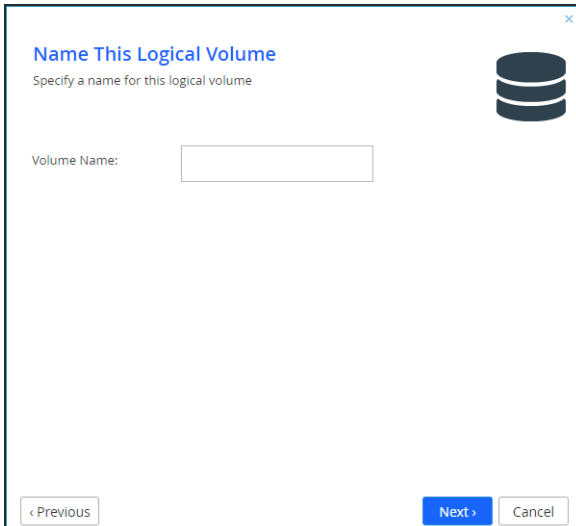
Next > Cancel

**Storage Device** – Either an array on which to create the volume or a drive that is not part of an array. The size of each array and drive is shown in brackets.

**Volume Size** – You can either drag the slider or enter a number of GB. IBM recommends that the volume is as large as possible.

**Enforce storage quotas** – For information about activating this feature, contact IBM.

- 3 Click **Next**.  
For details about activating volume encryption, contact IBM.
- 4 Click **Next** and name the volume.



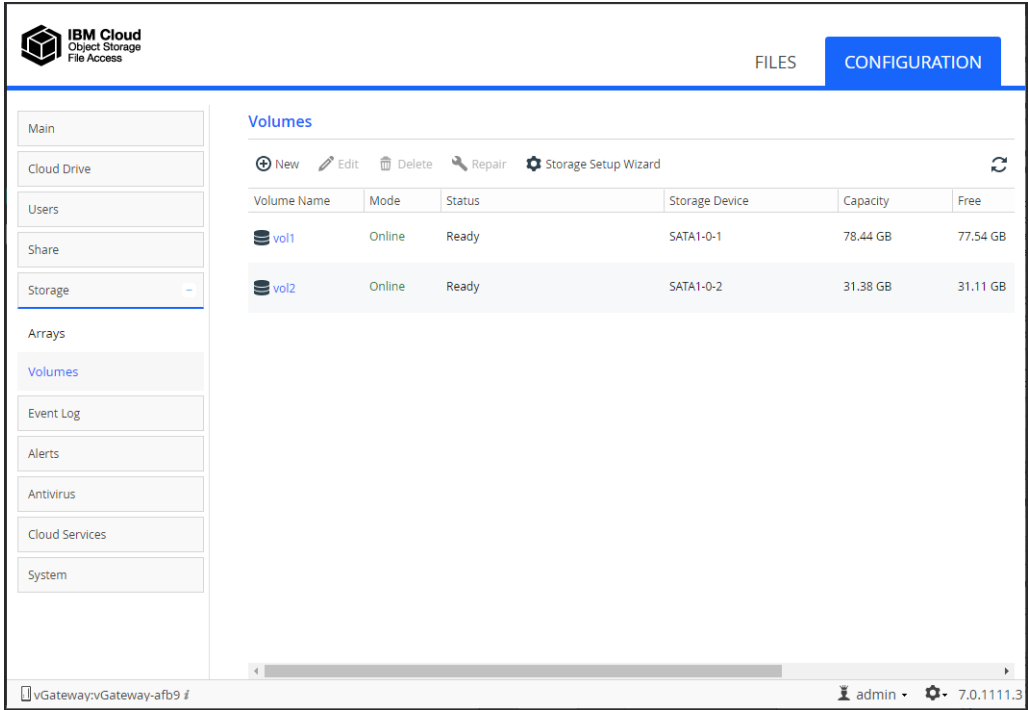
**Name This Logical Volume**

Specify a name for this logical volume

Volume Name:

< Previous Next > Cancel

- 5 Click **Next** and then click **Finish**.  
The volume you created is displayed in the **Volumes** page.



Enlarging a Volume

When the volume defined in the IBM COS FA Gateway does **not** use all the available storage, you can enlarge the volume size.

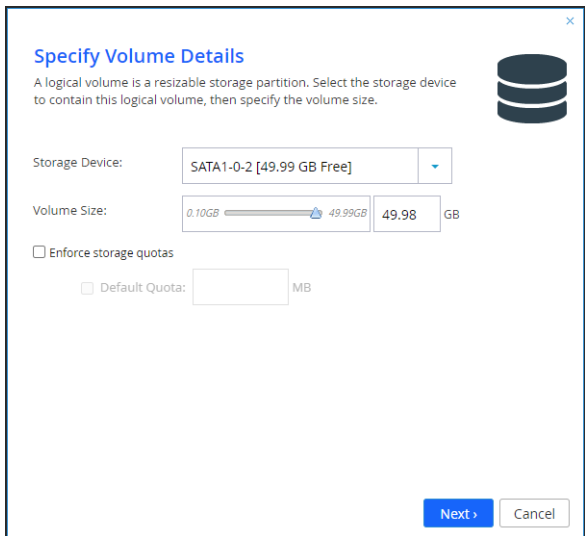
**Note:** When the volume defined in the IBM COS FA Gateway uses all the available storage, see [Increasing Storage On an IBM COS FA Gateway Volume](#).

To enlarge a volume:

- 1 Log on to the IBM COS FA Gateway as an administrator.
- 2 In the **CONFIGURATION** tab, select **Storage > Volumes** in the navigation pane. The **Volumes** page is displayed.
- 3 Select the volume and click **Edit**.

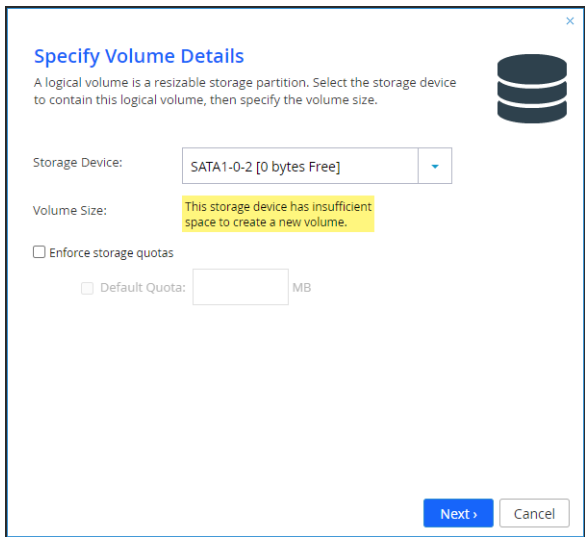


The **Specify Volume Details** screen is displayed.



The 'Specify Volume Details' dialog box is shown. It includes a title bar with a close button. Below the title is a description: 'A logical volume is a resizable storage partition. Select the storage device to contain this logical volume, then specify the volume size.' To the right is a disk icon. The 'Storage Device' dropdown is set to 'SATA1-0-2 [49.99 GB Free]'. The 'Volume Size' section has a slider from 0.10GB to 49.99GB, with a text input field showing '49.98 GB'. There are checkboxes for 'Enforce storage quotas' and 'Default Quota' (with a text input field for MB). At the bottom are 'Next >' and 'Cancel' buttons.

If the selected disk storage is fully used, the following screen is displayed:



The 'Specify Volume Details' dialog box is shown with an error message. The 'Storage Device' dropdown is set to 'SATA1-0-2 [0 bytes Free]'. The 'Volume Size' section has a yellow error box that says 'This storage device has insufficient space to create a new volume.' The rest of the interface, including the 'Enforce storage quotas' checkbox and the 'Next >'/'Cancel' buttons, remains the same.

- 4 Move the **Volume Size** slider to increase the volume storage.

**Note:** The volume size cannot be decreased.

**Deleting Volumes**

To delete a volume, select the volume and click **Delete** and then **Yes** to confirm.

**Scanning and Repairing Volumes**

You can scan the file system on a volume for errors. Any detected errors are automatically repaired, if possible.

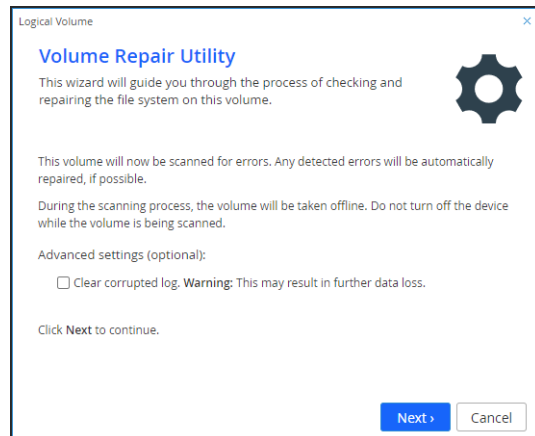
**Warning:** During the scanning process, the volume is taken off line. Do not turn off the IBM COS FA Gateway while the volume is being scanned.

**To scan and repair a volume:**

1 In the **CONFIGURATION** tab, select **Storage > Volumes** in the navigation pane.

2 Select the volume and click **Repair**.

The **Volume Repair Utility** wizard is displayed.



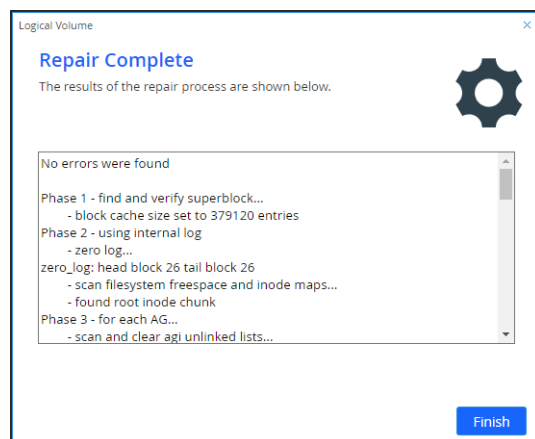
**Warning:** During the scanning process, the volume is taken off line. Do not turn off the IBM COS FA Gateway while the volume is being scanned.

3 Optionally, configure the settings for the repair operation.

4 Click **Next**.

While the files system on the volume is scanned for errors, the **Scanning & Repairing** screen displays a progress bar, including what is being check, such as inodes, blocks and sizes and group summary information.

When the process is complete, the **Repair Complete** screen displays a list of files system errors that were corrected.



5 Click **Finish**.

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## CHAPTER 4. MANAGING IBM COS FA GATEWAY USERS

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In order to enable administrators to manage shared folders, you must define the administrators in the IBM COS FA Gateway. You can do the following:

- Grant the administrators access rights to network shares.
- Add a custom user group. The entire user group can then be granted access rights to network shares, and the access rights will apply to all members of the user group. Users can be grouped, as described in [Managing User Groups](#).
- Add the administrators to the built-in **Read Only Administrators** user group, which includes read-only access rights to view the settings in the **CONFIGURATION** tab.
- Add the administrators to the built-in **Administrators** user group, which includes read-write access rights to view and modify settings in the **CONFIGURATION** tab.

**Note:** Users and user groups are granted access rights to network shares during share configuration. See [Sharing Local Files](#).

To enable sharing files, as described in [Setting Up the IBM COS FA Gateway For Caching](#), both IBM COS FA Portal users and IBM COS FA Gateway users must have matching names.

### In this chapter

- [Adding and Editing Users](#)
- [Adding Users to User Groups](#)
- [Viewing Users](#)
- [Exporting Users](#)
- [Exporting Users](#)
- [Allocating User Quotas](#)
- [Deleting Users](#)
- [Managing User Groups](#)
- [Deleting User Groups](#)

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## ADDING AND EDITING USERS

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You can add users to the IBM COS FA Gateway by connecting to Active Directory, or add local users.

- When connecting to Active Directory, you can add users from a domain or from an Active Directory tree or forest: [Defining Users From an Active Directory Domain, Tree or Forest](#).
- When adding local users to the IBM COS FA Gateway: [Adding and Editing Local Users](#).

**Note:** The Active Directory domain controller must be read/write and not read-only.

## Defining Users From an Active Directory Domain, Tree or Forest

To define IBM COS FA Gateway users from an Active Directory domain:

- 1 In the **CONFIGURATION** tab, select **Share > Windows File Sharing** in the navigation pane. The **Windows File Sharing** page is displayed.

The screenshot shows the IBM Cloud Object Storage File Access Configuration interface. On the left is a navigation pane with options: Main, Cloud Drive, Users, Share (selected), Shares, Windows File Sharing (highlighted), FTP Server, TFTP Server, NFS Settings, Storage, Event Log, Alerts, Antivirus, Cloud Services, and System. The main area is titled 'Windows File Sharing' and contains the following settings:

- Enable SMB (Windows File Sharing):** ☒
- Packet Signing:** Disabled (dropdown menu)
- Client Idle Disconnect Time (minutes):** 10 (input field)
- Use compatibility mode:** ☐
- Unix Extensions Mode:** ☒
- Hide unreadable files and folders:** ☐

Below these settings are 'Save' and 'Revert' buttons. A section titled 'Domain/Workgroup' shows:

- Assigned to:** WORKGROUP
- Operation Mode:** Workgroup
- Status:** ✔ OK

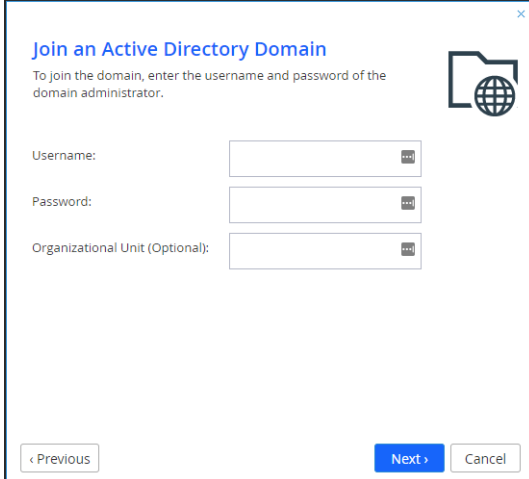
At the bottom of this section is a 'Connect to Domain/Workgroup' button. The footer of the page shows 'vGateway: Gateway-afb9 /' and 'admin 7.0.1111.3'.

- 2 Click **Connect to Domain/Workgroup**. The **Windows File Sharing Wizard** opens, displaying the **Connect to Domain/Workgroup** window.

The screenshot shows a 'Connect to Domain/Workgroup' dialog box. It contains the following elements:

- Title:** Connect to Domain/Workgroup
- Instruction:** Select Domain if your network has a Microsoft Windows domain controller; otherwise, select Workgroup.
- Workgroup:** ☒ WORKGROUP (selected)
- Domain:** ☐ (empty text field)
- Buttons:** 'Next >' and 'Cancel' at the bottom right.

- 3 Choose **Domain** and type the domain name.
- 4 Click **Next**. The **Join a Windows domain** window is displayed.



**Join an Active Directory Domain**  
To join the domain, enter the username and password of the domain administrator.

Username:

Password:

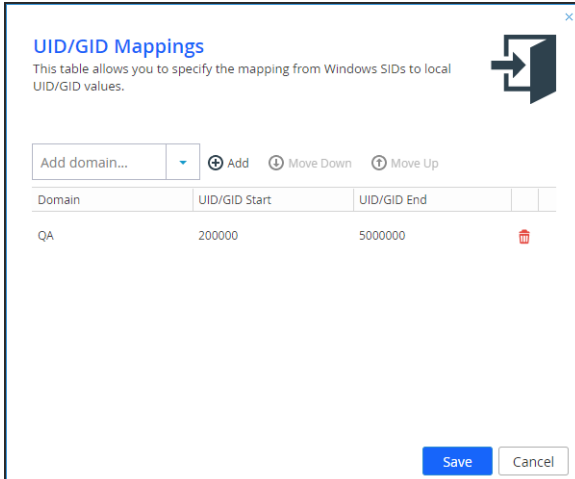
Organizational Unit (Optional):

◀ Previous      Next ▶      Cancel

- 5 In the **Username** and **Password** fields, type the domain administrator's username and password.
- 6 Optionally, In the **Organizational Unit** field, type the name of the organizational unit within the Active Directory domain.
- 7 Click **Next** and then **Finish**.


**To define IBM COS FA Gateway users from for an Active Directory tree or forest:**

- 1 After setting up the Active Directory domain, in the **Windows File Sharing** page, in the **Domain/Workgroup** area, click the **Advanced Mappings** link.  
The **UID/GID Mapping** window is displayed.



**UID/GID Mappings**  
This table allows you to specify the mapping from Windows SIDs to local UID/GID values.


Add domain... ⊕ Add ⬇️ Move Down ⬆️ Move Up

Domain	UID/GID Start	UID/GID End	
QA	200000	5000000	

Save      Cancel

- 2 For each domain in the tree/forest displayed in the list of domains, do the following:
  - a In the **Add domain** field, either type the desired domain's name, or select it from the drop-down list.
  - b Click **Add**.  
The domain is displayed in the table.
  - c Click in the **UID/GID Start** field, and type the starting number in the range of IBM COS FA Gateway user and group IDs (UID/GID) that should be assigned to users and user groups from this domain.
  - d Click in the **UID/GID End** field, and type the ending number in the range of IBM COS FA Gateway user and group IDs (UID/GID) that should be assigned to users and user groups from

this domain.

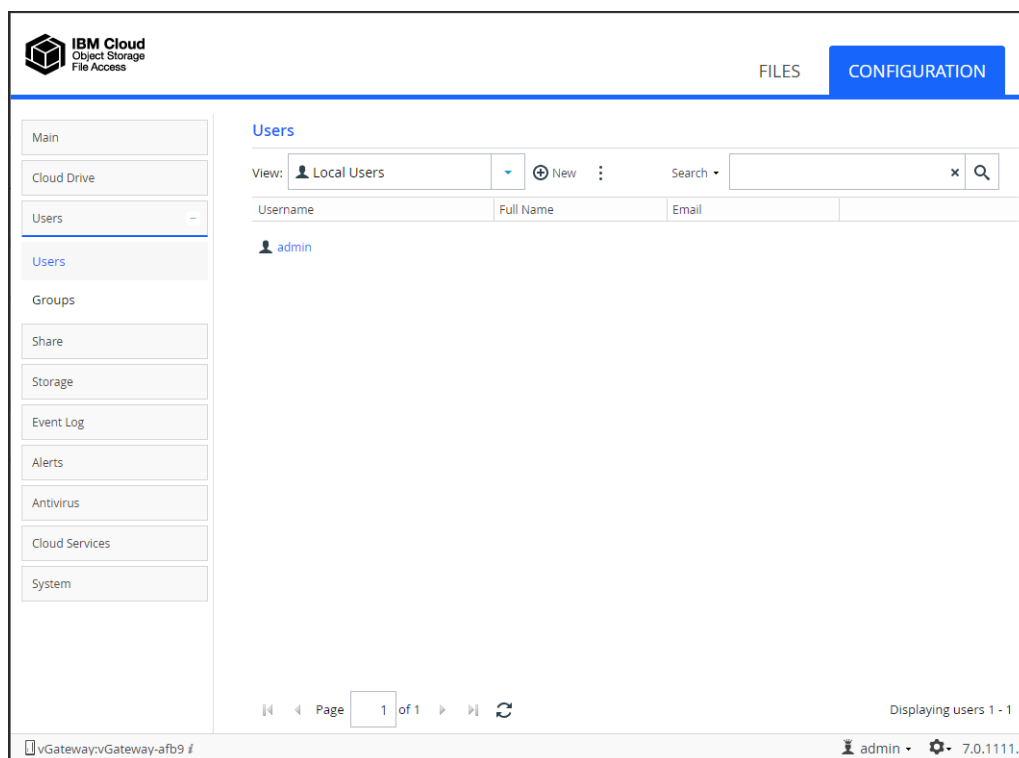
- 3 To re-order the domains, do any of the following:
  - To move a domain up in the table, click on the desired domain, then click **Move Up**.
  - To move a domain down in the table, click on the desired domain, then click **Move Down**.
 The order in which domains appear in the table represents the order in which the domains will appear in drop-down lists throughout the IBM COS FA Gateway interface, for example, when managing access rights to projects.
- 4 To remove a domain, in the domain row, click . The domain is not displayed in the table.
- 5 Click **Save**.

### Adding and Editing Local Users

You specify the local users who have access to the IBM COS FA Gateway.

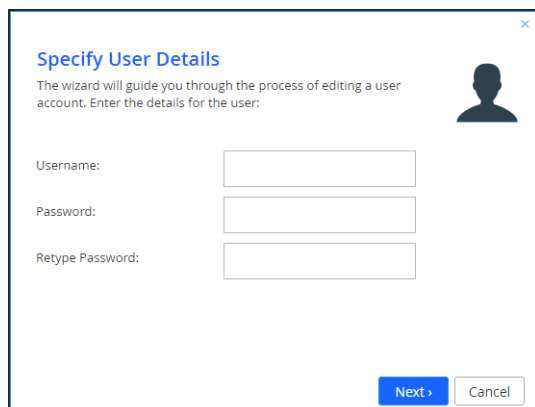
**To add or edit a user:**

- 1 In the **CONFIGURATION** tab, select **Users > Users** in the navigation pane. The **Users** page is displayed.



**Note:** After running a migration, a new **Migration Tool Service Admin Account** administrator is automatically added: `migration-service-n`, where *n* is a unique identifier. You must not delete this administrator.

- 2 To add a user, click **New**.  
Or,  
To edit a user, either click the user name or select the user row and click **Edit**.  
The **Specify User Details** window is displayed. If you are editing an existing user, the window is displayed with the user details.



**Specify User Details**

The wizard will guide you through the process of editing a user account. Enter the details for the user:

Username:

Password:

Retype Password:

**Next >** **Cancel**

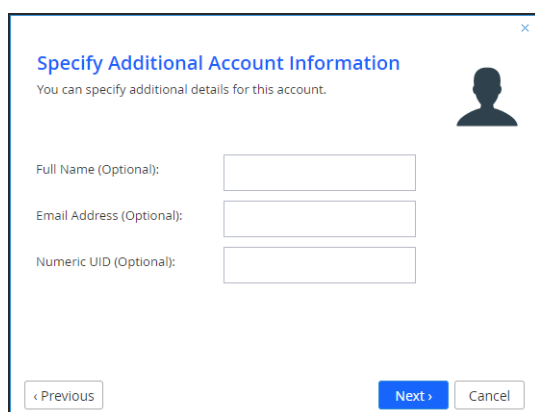
- 3 Specify the user details.

**Username** – A name for the user.

**Password** – A password for the user. The password must be at least eight characters and must include at least a letter, digit and special character, such as ~, @, #, \$, %, ^, &, (. The password cannot contain the **Username** as part or all of the password.

**Retype password** – The same password you entered in the **Password** field.

- 4 Click **Next** and optionally specify additional account information:



**Specify Additional Account Information**

You can specify additional details for this account.

Full Name (Optional):

Email Address (Optional):

Numeric UID (Optional):

**< Previous** **Next >** **Cancel**

**Full Name** – The full name of the user.

**Email Address** – The email address of the user.

**Numeric UID** – A numeric user ID (UID) to assign the user.

- 5 Click **Next** and then **Finish**.

The new user is displayed on the **Users** page:

## ADDING USERS TO USER GROUPS

Users are added to user groups during user group configuration. See [Managing User Groups](#).

## VIEWING USERS

To view existing users:

- 1 In the **CONFIGURATION** tab, select **Users > Users** in the navigation pane. The **Users** page opens, displaying all local users.
- 2 To display domain users, in the **Local Users** drop-down list, select **Domain domain Users**, where

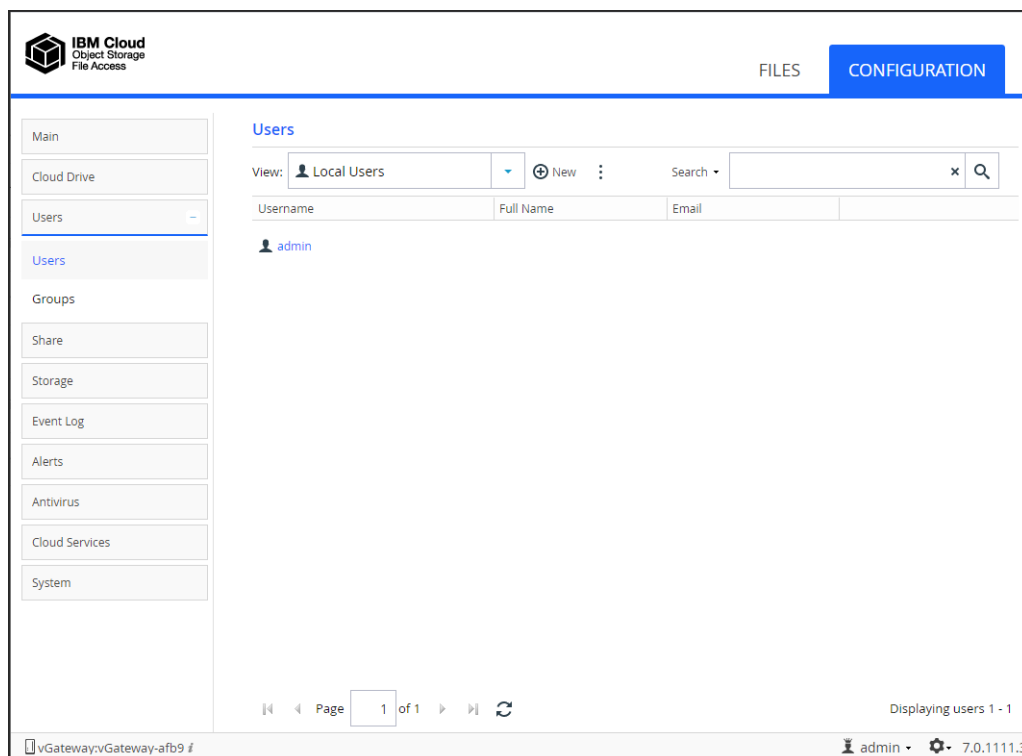
*domain* is the name of the domain.  
All domain users are displayed.

## EXPORTING USERS

You can export a list of users and their details to a Comma-Separated Values (CSV) file on your computer. You can then view the file as a worksheet in Microsoft Excel.

**To export a list of users:**

- 1 In the **CONFIGURATION** tab, select **Users > Users** in the navigation pane.  
The **Users** page is displayed.



- 2 Click **Export to Excel**. You are asked if you would like to save the file or open the file in Microsoft Excel.

**Note:** The **Export to Excel** option is in the line of options: **New, Edit, Delete, User Quotas** and **Export to Excel**. If it is not displayed, click the three vertical dots or widen the browser window.

The users list is exported.

## ALLOCATING USER QUOTAS

For information about activating this feature, contact IBM.



## DELETING USERS

**Note:** You cannot delete the main administrator account.

**To delete a user:**

1 In the **CONFIGURATION** tab, select **Users > Users** in the navigation pane.

2 Select the user row and click **Delete**.

**Note:** The **Delete** option is in the line of options: **New, Edit, Delete, User Quotas** and **Export to Excel**. If it is not displayed, click the three vertical dots or widen the browser window.

3 Click **Yes** to confirm.

The user is deleted.

## MANAGING USER GROUPS

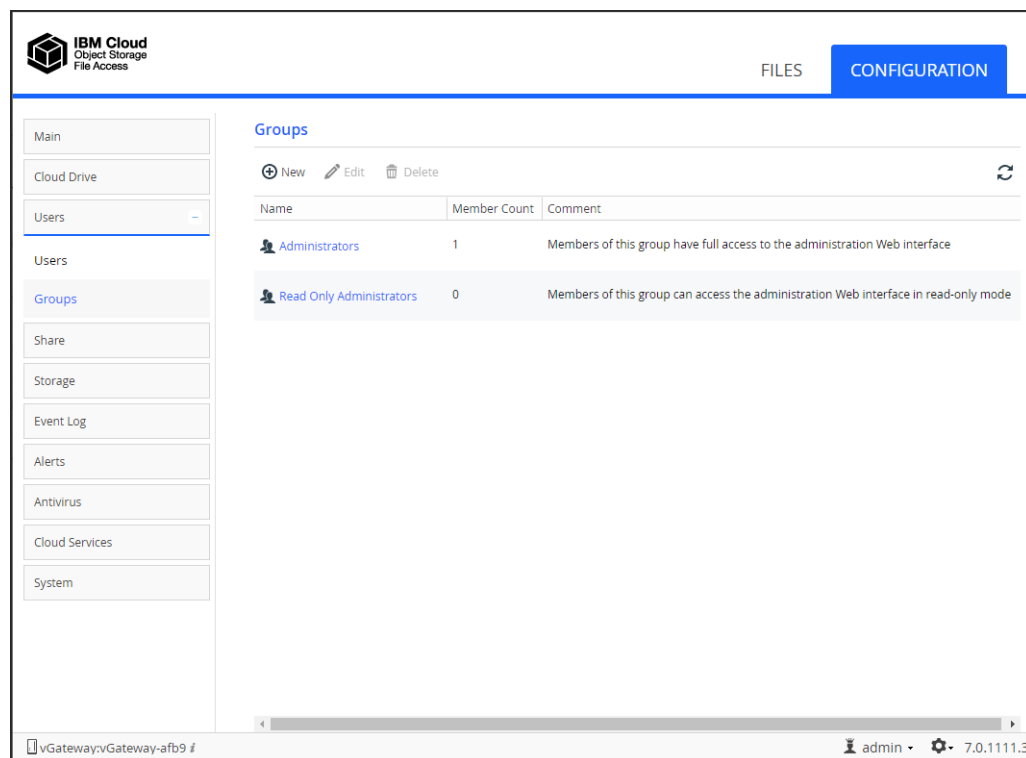
The IBM COS FA Gateway includes two built-in user groups: **Administrators** and **Read Only Administrators**. You can create additional user groups to meet your organization's requirements. It is possible to add each user to more than one group.

**Note:** IBM COS FA Gateway administrators can create local groups with nested AD groups. Nesting AD groups within local groups is useful when addressing frequent changes in branch user hierarchies.

**To add or edit a user group:**

1 In the **CONFIGURATION** tab, select **Users > Groups** in the navigation pane.

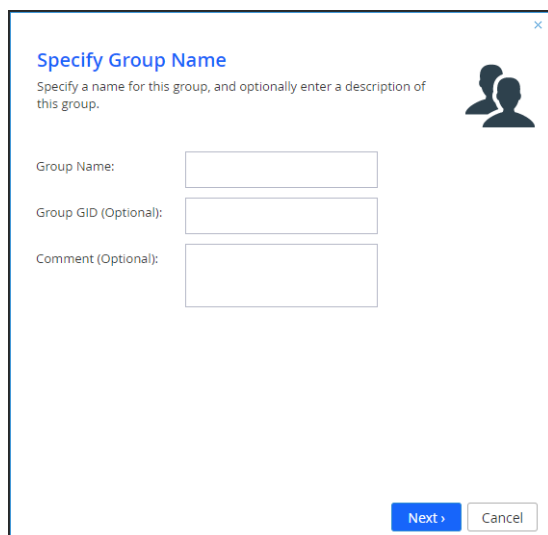
The **Groups** page is displayed.



2 To add a group, click **New**.

Or,

To edit a group, either click the group name or select the group row and click **Edit**. The **Specify Group Name** window is displayed. If you are editing an existing group, the window is displayed with the group details.



**Specify Group Name**

Specify a name for this group, and optionally enter a description of this group.

Group Name:

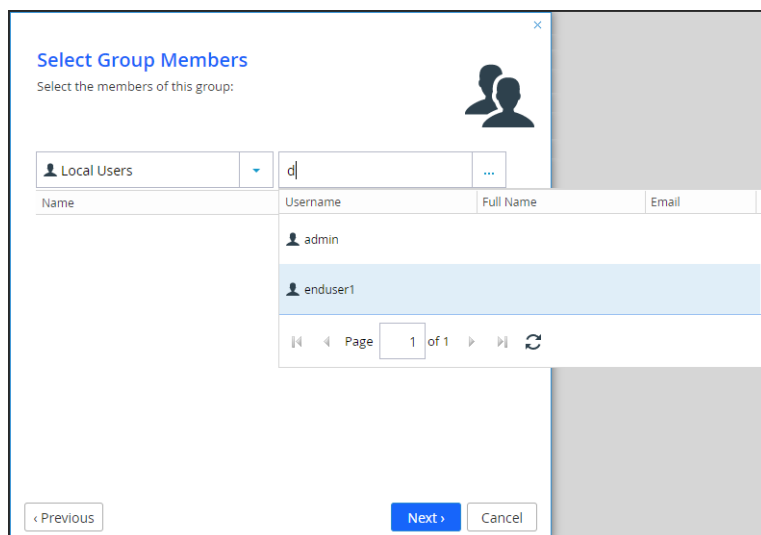
Group GID (Optional):

Comment (Optional):

**Next >** **Cancel**

**Note:** You cannot edit the **Administrators** and **Read Only Administrators** group names or descriptions.

- 3 Specify the group name and optionally, other details.
- 4 Click **Next** and select the group members.



**Select Group Members**

Select the members of this group:

Local Users  **...**

Name	Username	Full Name	Email
	admin		
	enduser1		

Page 1 of 1

**Previous** **Next >** **Cancel**

- a Select the group whose member you want to include.
- b Either start to enter a user name in the **Quick Search** text box or, click **...** and select the user from the list.
- 5 When you are done adding users, click **Next** and then **Finish**.

## DELETING USER GROUPS

---

To delete a user group, select the group row, click **Delete**, and then click **Yes** to confirm.

**Note:** Deleting a user group does not delete the group members.

The groups Read Only Administrators and Administrators are built-in. It is not possible to delete the built-in user groups.

If the deleted user group had been granted access rights to network shares, the group members will no longer have access rights to those network shares. To assign individual users access rights to network shares, see [Sharing Local Files](#).

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## CHAPTER 5. USING CLOUD SERVICES

IBM COS FA Gateway cloud services include remote monitoring, cloud drive caching and synchronization, and reporting.

In this chapter

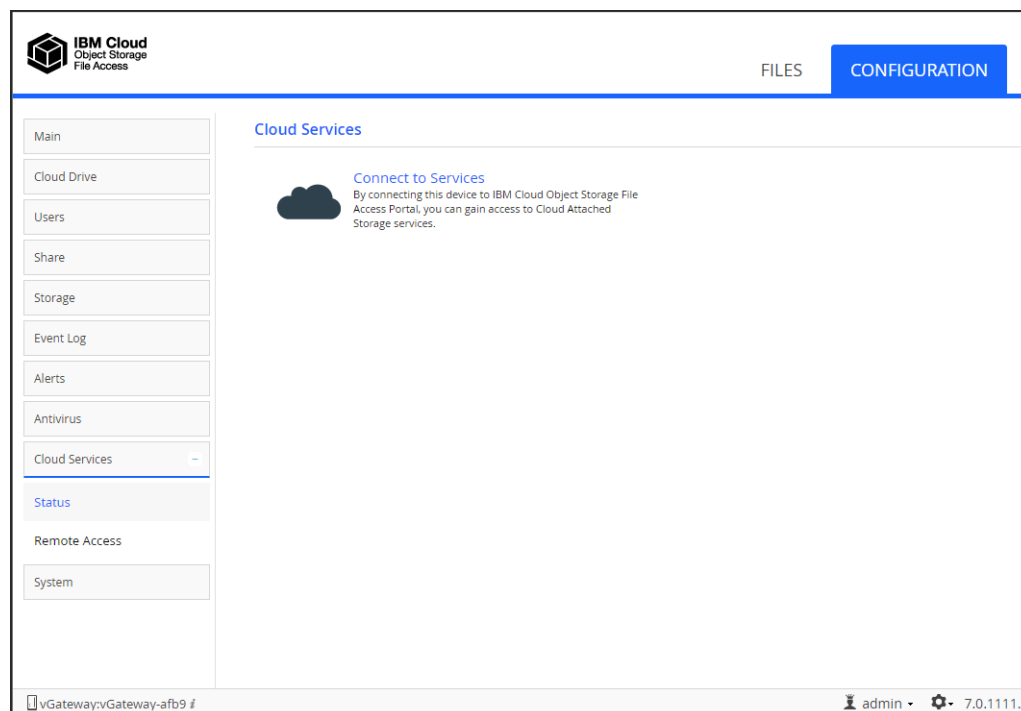
- [Connecting to an IBM COS FA Portal](#)
- [Viewing Cloud Services Status](#)
- [Reconnecting and Disconnecting to an IBM COS FA Portal](#)
- [Accessing the IBM COS FA Portal From the IBM COS FA Gateway](#)
- [Setting Up the IBM COS FA Gateway For Caching](#)
- [Pinning Folders so that Files are Always Available Locally](#)
- [What the User Sees With an IBM COS FA Gateway](#)
- [Managing the IBM COS FA Gateway](#)
- [Accessing Previous File Versions](#)
- [Searching for Files on a Mac Computer](#)

## CONNECTING TO AN IBM COS FA PORTAL

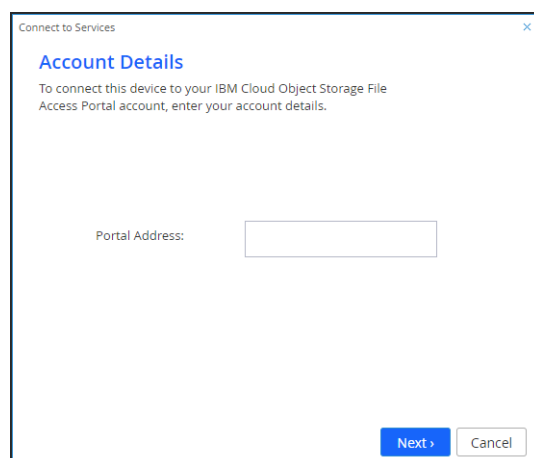
You connect the IBM COS FA Gateway to the IBM COS FA Portal using an administrator account. During the initial setup of the IBM COS FA Gateway, described in the *IBM COS FA Gateway Setup Guide*, you connect the IBM COS FA Gateway to the IBM COS FA Portal. This section describes the general procedure of how to connect to an IBM COS FA Portal.

**To connect the IBM COS FA Gateway to an IBM COS FA Portal:**

- 1 In the **CONFIGURATION** tab, select **Cloud Services > Status** in the navigation pane. The **Cloud Services** page is displayed.

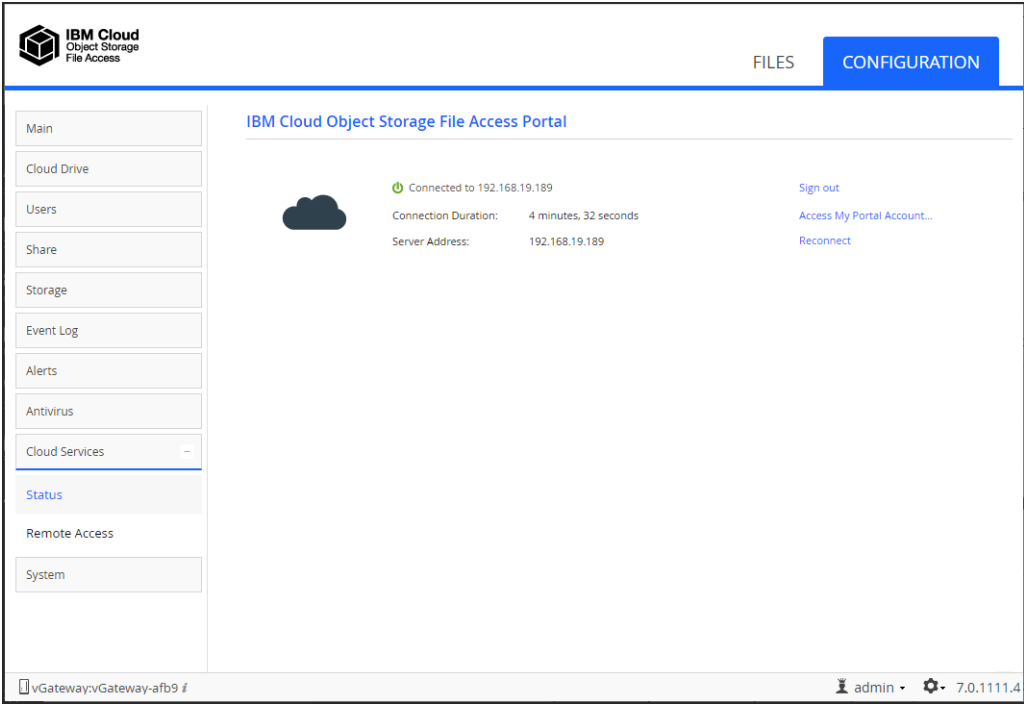


- 2 Click **Connect to Services**. The **Account Details** screen is displayed.



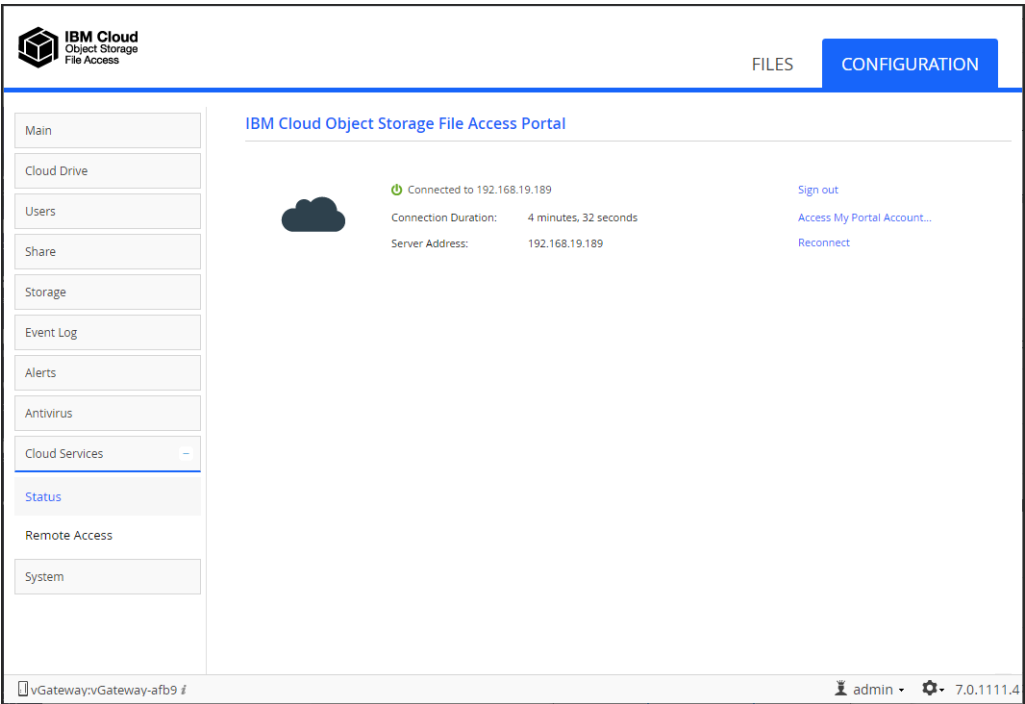
- 3 Enter the address of your IBM COS FA Portal, and then click **Next**. The **Sign In** screen is displayed.

- 4 Enter the IBM COS FA Portal designated user username and password to access the IBM COS FA Portal.  
**Note:** The designated user is the an owner of the cloud folders and data to manage the IBM COS FA Gateway connection to the IBM COS FA Portal for all users and not just the current user. This designated user has IBM COS FA Portal read/write administrator permissions.
- 5 Click **Next**.  
The **Select License** screen is displayed.
- 6 If required, select the license.
- 7 Click **Next**.  
Your IBM COS FA Gateway connects to the IBM COS FA Portal and is added to your IBM COS FA Portal account.  
A success screen is displayed.
- 8 Click **Finish**.  
The **IBM Cloud Object Storage File Access Portal** page is displayed, showing that your IBM COS FA Gateway is connected to the IBM COS FA Portal and displays **OK** next to the services to which you are subscribed.



## VIEWING CLOUD SERVICES STATUS

The **IBM Cloud Object Storage File Access Portal** page displays the following information about the IBM COS FA Gateway's connection to your IBM COS FA Portal account and your subscribed cloud services.



After connecting to an IBM COS FA Portal the IBM COS FA Gateway status panel shows the following:

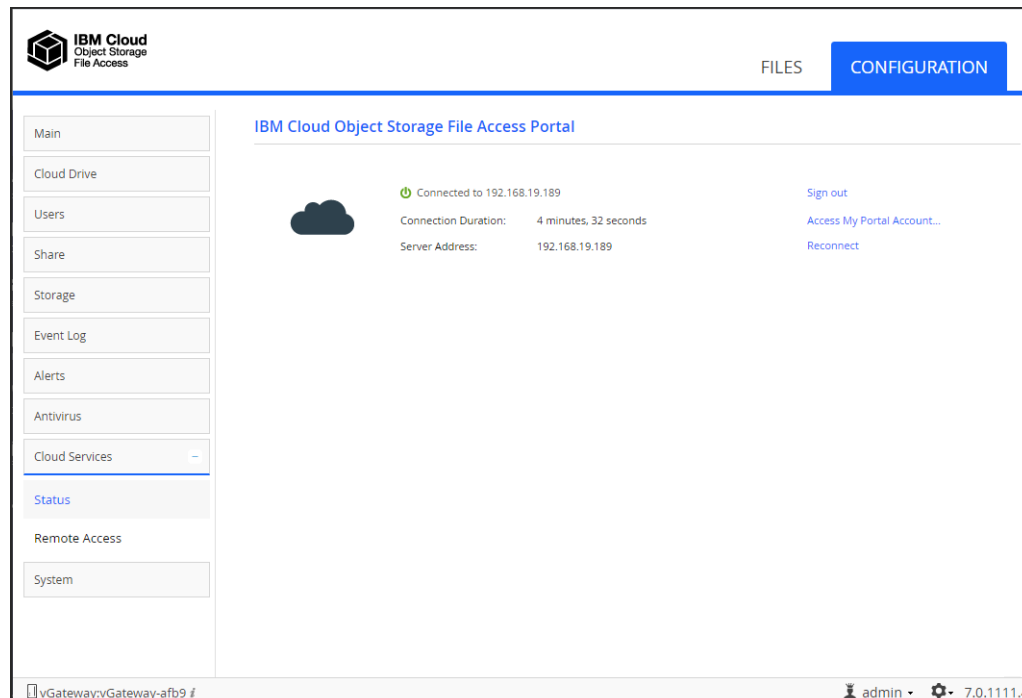
- The status of the connection to the IBM COS FA Portal can be one of the following:
  - Resolving the portal address** – The IBM COS FA Gateway is resolving the IBM COS FA Portal address.
  - Connected to *portalName*** – The IBM COS FA Gateway is connected to the IBM COS FA Portal named *portalName*, and the connection is currently in use.
  - Connecting** – The IBM COS FA Gateway is connecting to the IBM COS FA Portal.
  - Disconnected** – The IBM COS FA Gateway is disconnected from the IBM COS FA Portal. You can reconnect as described in [Reconnecting and Disconnecting to an IBM COS FA Portal](#).
  - Authenticating** – The IBM COS FA Gateway is authenticating to the IBM COS FA Portal.
  - Connection Failed** – The connection to the IBM COS FA Portal failed.
- The amount of time that the IBM COS FA Gateway has been connected to the IBM COS FA Portal.
- The IP address of the IBM COS FA Portal.

## RECONNECTING AND DISCONNECTING TO AN IBM COS FA PORTAL

If the connection to the IBM COS FA Portal is lost due to a connectivity failure, the IBM COS FA Gateway automatically reconnects when it detects that the IBM COS FA Portal is available. To force the IBM COS FA Gateway to immediately try to reconnect, click **Reconnect**. The connection status displays whether the reconnection attempt is successful or not.

**To disconnect from a IBM COS FA Portal:**

- 1 In the **CONFIGURATION** tab, select **Cloud Services > Status** in the navigation pane. The **IBM Cloud Object Storage File Access Portal** page is displayed.



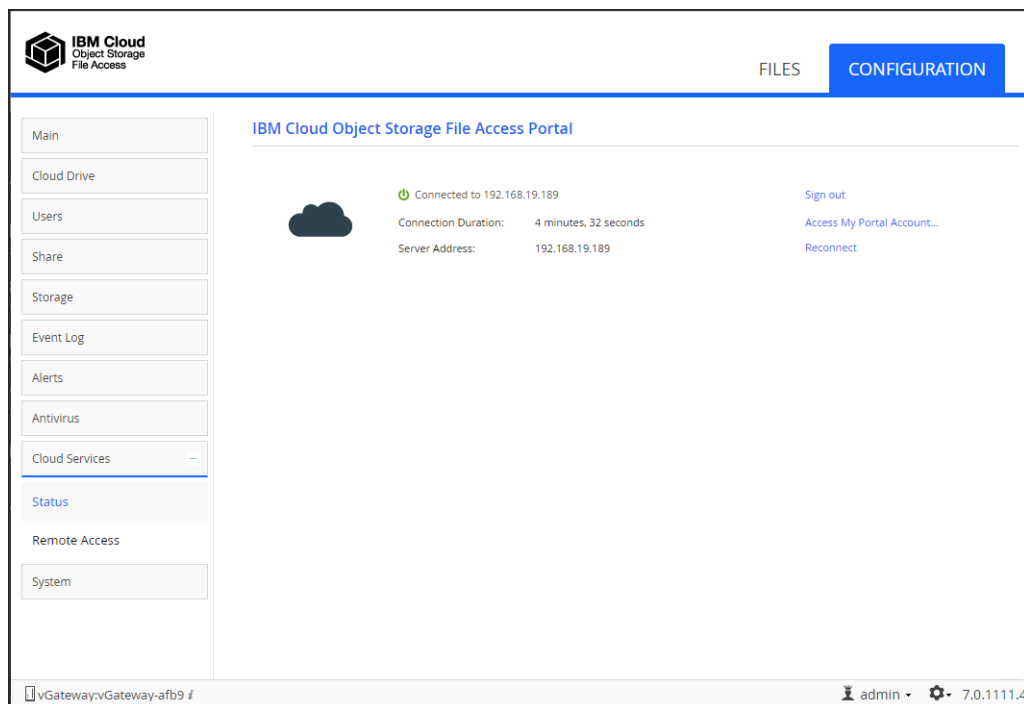
- 2 Click **Sign out** and **Yes** when the confirmation message is displayed.



## ACCESSING THE IBM COS FA PORTAL FROM THE IBM COS FA GATEWAY

To access your IBM COS FA Portal account:

- 1 In the **CONFIGURATION** tab, select **Cloud Services > Status** in the navigation pane. The **IBM Cloud Object Storage File Access Portal** page is displayed.



- 2 Click **Access My Portal Account**.

The IBM COS FA Portal sign in page is displayed in a new window, and you can sign in and access your account. For details about using your IBM COS FA Portal account, refer to the IBM COS FA Portal documentation.

## SETTING UP THE IBM COS FA GATEWAY FOR CACHING

Content is synced between the IBM COS FA Portal and the IBM COS FA Gateways connected to the IBM COS FA Portal. Whenever any change of any kind is made to any file in any of the synced folders, the same change is made immediately in the other synced folders. For example, if a file is deleted from one of the folders, the same file is deleted from the other synced folders. It makes no difference which user made the change or in which of the synced folders the change was made.

**Note:** Each IBM COS FA Portal user accesses the content that was synced to the IBM COS FA Gateway according to the permission set defined for their access on the IBM COS FA Portal.

When the IBM COS FA Portal is connected to the IBM COS FA Gateway, the folder structure defined in the IBM COS FA Portal, as described in the *IBM COS FA Gateway Setup Guide*, is created automatically on the IBM COS FA Gateway when the IBM COS FA Gateway syncs with the IBM COS FA Portal. Setting up the IBM COS FA Gateway to enable syncing is dependent on a number of considerations:

- Do you need to maintain the file structure and ACLs after migrating the data to an IBM COS FA Gateway?  
In this case, the setup should be done using nested shares.  
Even if a folder is shared with a user but the folder has no ACL access permissions, when the user

attempts to access the folder a message similar to the following is displayed: You have no permission to view this folder.

- Do you need to maintain the file structure, but not the ACLs, after migrating the data to an IBM COS FA Gateway?

In this case, the setup should be done using nested shares.

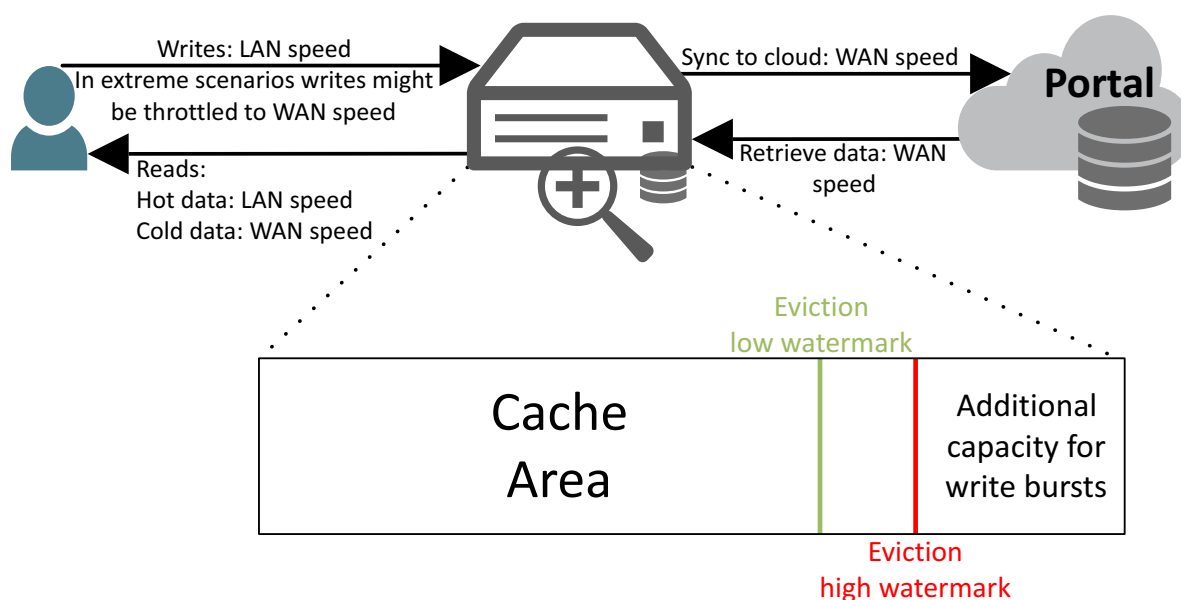
Access to files is determined by the authorization levels set in the IBM COS FA Portal, such as *Read/Write* or *Preview Only*.

IBM recommends whenever possible to set up the IBM COS FA Gateway using nested shares.

### Storage With an IBM COS FA Gateway

With an IBM COS FA Gateway, files are stored in cloud storage and only stored on the IBM COS FA Gateway when required. However, all the metadata is downloaded to the IBM COS FA Gateway so users have access to everything that they have permission to access on the IBM COS FA Portal. Changes to the metadata in the IBM COS FA Portal are reflected in the IBM COS FA Gateway, but the content itself is not stored on the IBM COS FA Gateway. Only what is being worked on at the moment is stored on the IBM COS FA Gateway. The files that have not been downloaded to the IBM COS FA Gateway are displayed in the IBM COS FA Gateway as stubs, which take up very little storage. When a user accesses a stub file, the file is downloaded and the file is *unstubb*ed. Any changes to the file are synced back to the IBM COS FA Portal.

Files on the IBM COS FA Gateway are referred to as *hot* files. Less frequently accessed files, that remain in the cloud managed by IBM COS FA Portal, are referred to as *cold* files. Files that have not been accessed recently are evicted when the amount of storage used reaches a high watermark. The IBM COS FA Gateway also has spare capacity to absorb common write bursts at LAN speed, so that users do not require access to the cloud and the additional slowness that is implied with this access, during these bursts. For more details about evicting files, see [File Eviction from the IBM COS FA Gateway](#).



Any file in the cache area is available at LAN speed.

Files that were updated in the IBM COS FA Portal and are defined as hot files, are downloaded automatically to the IBM COS FA Gateway in background, so that when they are required, the user will have access to the up-to-date version of the file at LAN speed.

### File Eviction from the IBM COS FA Gateway

As the IBM COS FA Gateway storage space gets used up, the IBM COS FA Gateway starts to remove, evict, files leaving stubs on the IBM COS FA Gateway. Files start to be evicted only when the amount of storage used reaches the high watermark, 75% of the total IBM COS FA Gateway storage. At this point files are evicted until the amount of storage used is equal to, or less than, the low water mark, 65% of the total IBM COS FA Gateway storage.

The following hot files are never evicted, so they are always available at LAN speed:

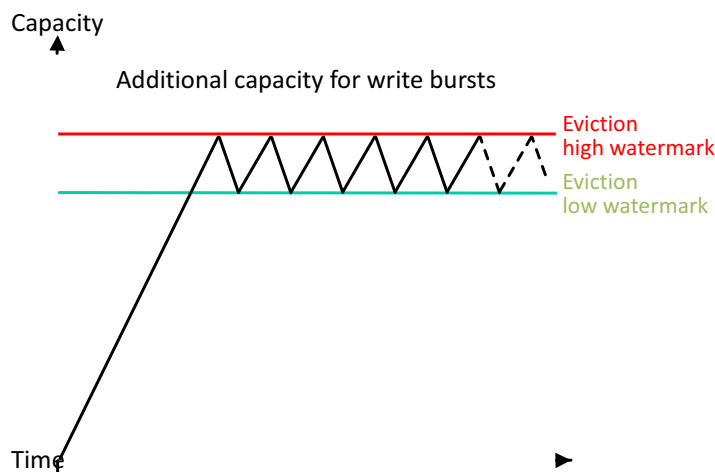
- Files that are currently open.
- Files that have not yet been synced to the IBM COS FA Portal. For example, a file that was edited but not yet synced.

Other hot files can be evicted. These files are grouped according to the time since they were last accessed. The files are evicted within these groups, the files in the oldest group first, followed by the files in the next oldest group.

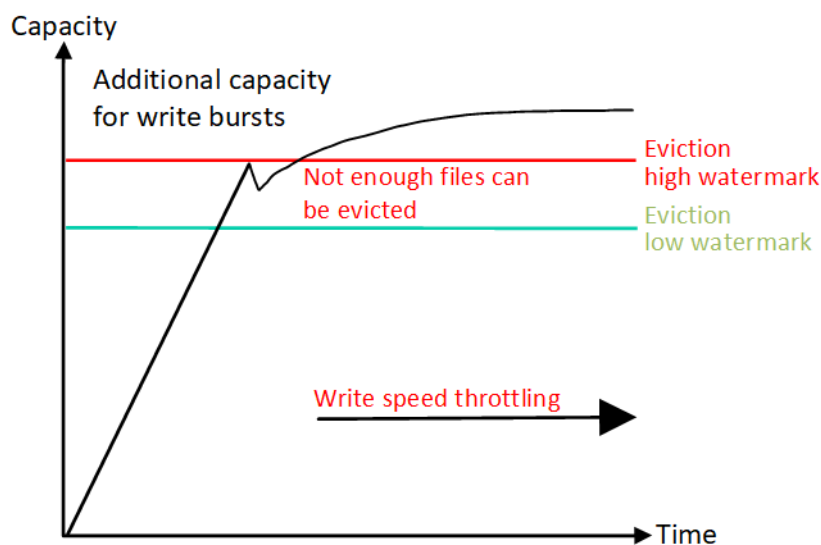
**Note:** Eviction is based on days and not file size. Also, there is no differentiation within a group of the length of time since a file was accessed.

The eviction policy can be configured. For details, contact IBM support.

The following graph shows expected disk space usage in a normal scenario.



If the available free space does become too small, throttling is implemented so that users can continue to write to their files, but the client's write speed is reduced to WAN speed so that the data being written is not faster than the data that is evicted to the cloud.



This type of scenario is not usual, except during a migration or a large amount of data or a very heavy write burst, using all the 25% storage space reserved for write bursts.

### What Files are Not Synced From the IBM COS FA Portal?

Temporary files on the IBM COS FA Portal are not synced to the IBM COS FA Gateway. The following are not synced:

- Files that begin with ~\$, tmp or . \_
- Files of type tmp, temp, swp, dwl, or dwl2
- Files named desktop.ini, Thumbs.db, .DS\_Store, .\_.DS\_Store, CredDB.ccf, .AppleDouble, .AppleSingle or .Parent
- Files that end with Zone.Identifier

**Note:** Windows ACL enabled folders on the IBM COS FA Portal cannot be synced unless the share is defined as **Windows ACL Emulation Mode**, as described in [Configuring IBM COS FA Gateway Shares](#).

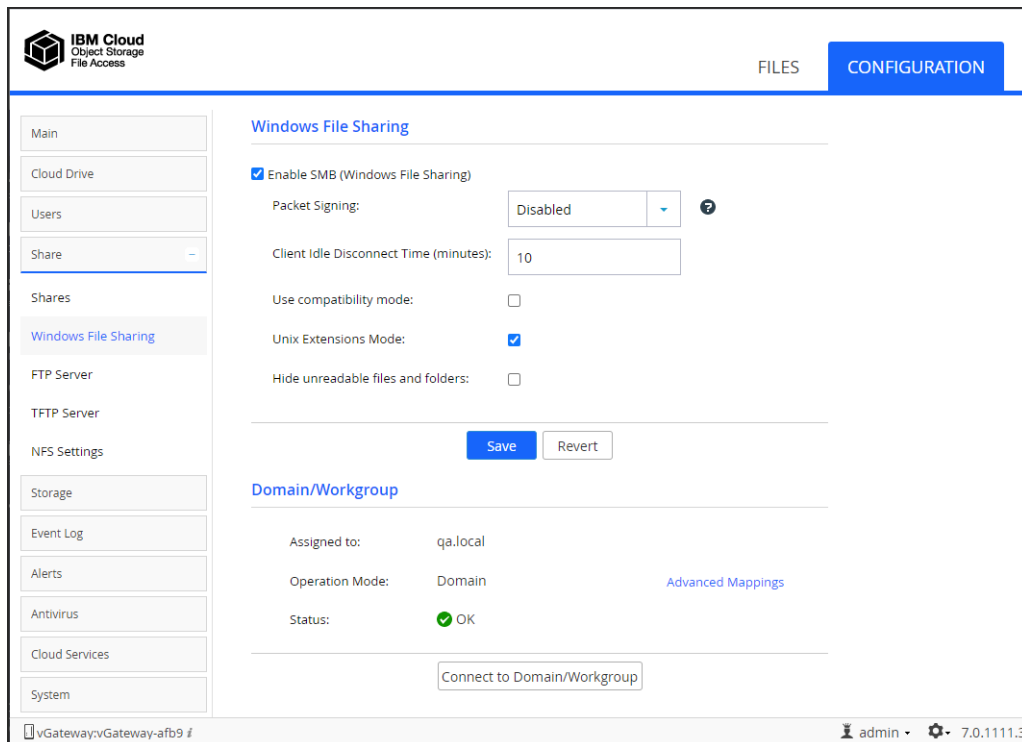
### Configuring IBM COS FA Gateway Shares

Files on a IBM COS FA Gateway can be shared by users both over a LAN and WAN and are synced to each IBM COS FA Gateway using a IBM COS FA Portal.

Configuring FSS requires that first the IBM COS FA Portal is configured and then the IBM COS FA Gateway. Configuring the IBM COS FA Portal and the initial IBM COS FA Gateway configuration is described in the *IBM COS FA Gateway Setup Guide*.

#### To configure IBM COS FA Gateway shares:

- 1 Verify that the IBM COS FA Gateway is connected to Active Directory, or other LDAP-based authentication service.
  - a Log on to the IBM COS FA Gateway as an administrator.
  - b In the **CONFIGURATION** tab, select **Share > Windows File Sharing** in the navigation pane. The **Windows File Sharing** page is displayed.

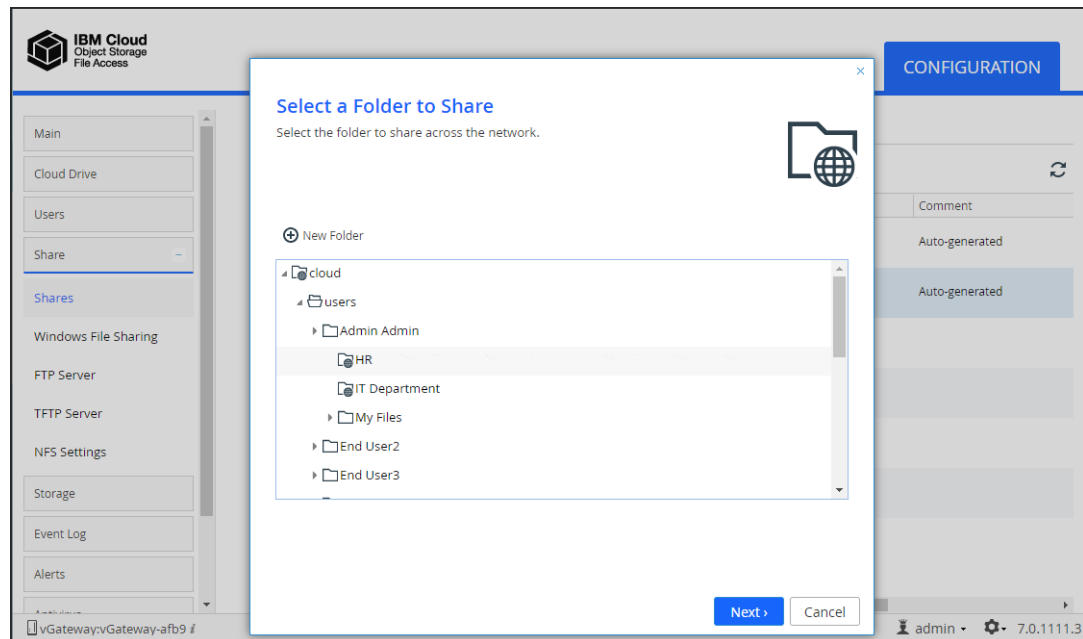


- c In the **Domain/Group** section, verify that the **Operation Mode** is **Domain** and that the **Status** is **OK**, otherwise, click **Connect to Domain/Workgroup** to connect to an LDAP-based authentication service such as an Active Directory domain.

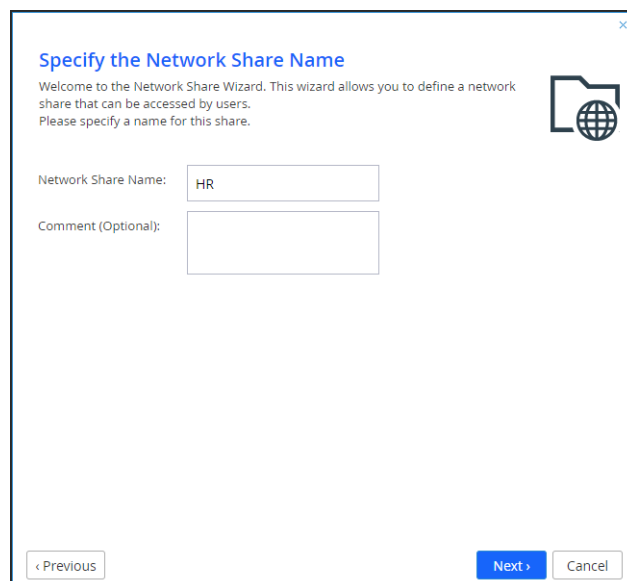
To work with Windows ACL, you must change the sharing protocol to **Windows ACL Emulation Mode**. Windows ACL enabled folders on the IBM COS FA Portal cannot be synced unless the cloud share is defined as **Windows ACL Emulation Mode**.

#### To configuring IBM COS FA Gateway shares with ACL support:

- 1 In the **CONFIGURATION** tab, select **Share > Shares** in the navigation pane.
- 2 Click the **cloud** share that was automatically created when it synced to the IBM COS FA Portal. The **Select a Folder to Share** wizard opens, displaying the volumes and folders on the IBM COS FA Gateway.



- 3 Select the cloud folder to share and click **Next**.  
The **Specify the Network Share Name** window is displayed.



- 4 Optionally, change the **Network Share Name** and click **Next**.  
The **Sharing Protocols** window is displayed.

**Note:** **Windows File Sharing** is checked by default and cannot be deselected.

- 5 From the drop-down, select **Windows ACL Emulation Mode**.

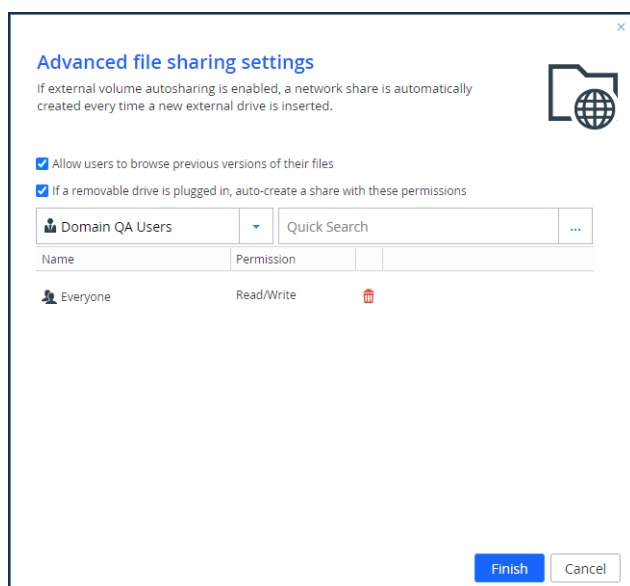
Users access the shared files and folders through standard Windows client computers; for example, using Windows Explorer through the SMB access provided by the IBM COS FA Gateway. Windows ACL Emulation Mode also allows you to block users from writing specific file types into the IBM COS FA Gateway share or gaining control of the content located on it.

- 6 Click **Next** and in the **Configure Permissions** window specify the share permissions.
- Note:** These permissions are not inherited from the IBM COS FA Portal.
- 7 Click **Next** and then click **Finish**.
- 8 Repeat step 3 for all the shares you want to work with Windows ACLs.

The nested shares are displayed in the **Network Shares** page.

Users can access there files directly with SMB by mapping the share name from step 4 in the file manager.

**Note:** The **public** share is a default share created by IBM COS FA Gateway. This share can be hidden from end users by editing the share and adding a dollar (\$) symbol at the end of the name. If you want, you can delete the **public** share. Another share, **PreviousVersions**, is also a default share created by IBM COS FA Gateway, allowing access to cloud snapshots. To hide this share from end users you need to uncheck the **Allow users to browse previous versions of their files** option in **Share > Shares > Advanced**.



You can achieve the nested sharing **without** imposing Windows ACLs.

#### To configuring IBM COS FA Gateway shares without ACL support:

- 1 When configuring the IBM COS FA Portal, on each cloud drive folder group that you do not want ACL support, uncheck **Enable Windows ACLs**.
- 2 When configuring the IBM COS FA Gateway, described in [To configuring IBM COS FA Gateway shares with ACL support](#), set **Only Authenticated Users** and not **Windows ACL Emulation Mode**, set in step 5.

## PINNING FOLDERS SO THAT FILES ARE ALWAYS AVAILABLE LOCALLY

For details about activating this feature, contact IBM.



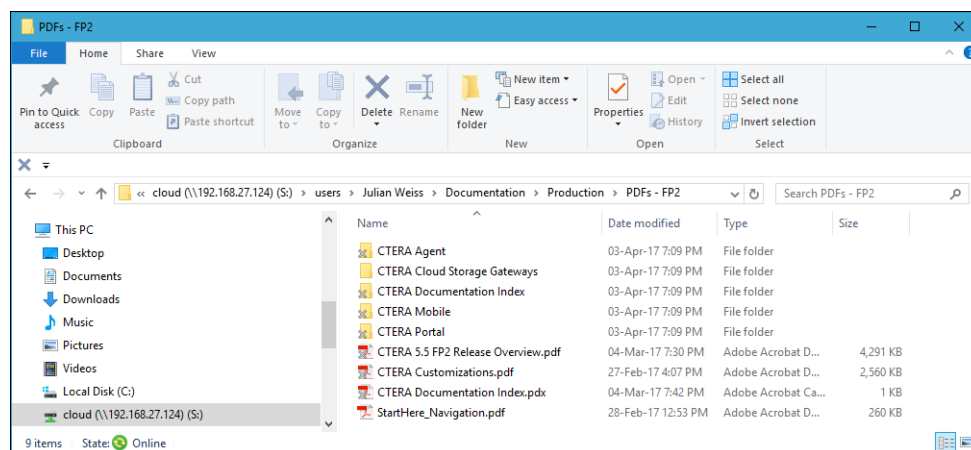
## WHAT THE USER SEES WITH AN IBM COS FA GATEWAY

To access the IBM COS FA Gateway cloud drive:

1 Either:

Access the folders and files from a file manager, for example, Windows File Explorer or Mac Finder, using the following address: `\\ IBM_COS_FA_Gateway_Ip \cloud`, where *IBM\_COS\_FA\_Gateway\_Ip* is the IP address of the IBM COS FA Gateway.

Folders and files that are cached on the IBM COS FA Gateway are represented in Windows File Explorer by a gray X:



**Note:** When accessing the IBM COS FA Gateway from a Mac machine you need to following the procedure in [Accessing an IBM COS FA Gateway From a Mac](#).

Or,

- a Log in to the IBM COS FA Gateway. Your user name must match your IBM COS FA Portal user name.
- b Select the **FILES** tab and navigate to the cloud share. You can also access those files using any of the file sharing protocols.
- c The folders and files stored in the cloud share are synced from your IBM COS FA Portal cloud drive.

### Accessing an IBM COS FA Gateway From a Mac


Before connecting a Mac to an IBM COS FA Gateway, you have to configure the Mac:

- Icon previews and size details are not set.
- Hidden `.DS_Store` files are not enabled.

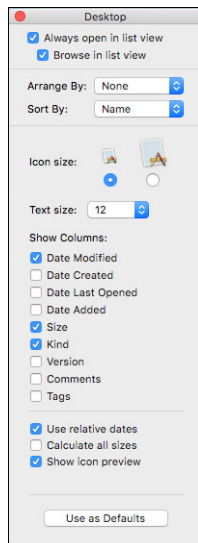
**Note:** Apple uses `.DS_Store` files to store the custom attributes of folders. By default, Finder creates a `.DS_Store` file in every folder that it accesses. Disabling the `.DS_Store` setting is required when connected to an IBM COS FA Gateway.

To configure the Mac when connecting to an IBM COS FA Gateway:

- 1 Update your Mac OS X to macOS 10.14 (Mojave) or higher.

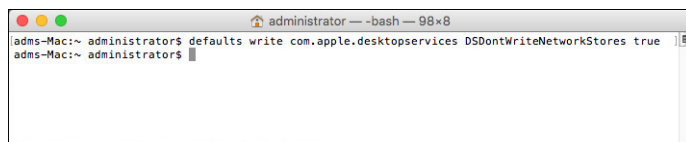
**Note:** You can check the version by right-clicking the Apple icon, , in the right of the menu bar and choosing **About This Mac** to display the version. If required you can also update the software from this window.

- 2 In **Finder** select Desktop and then choose **View > Show View Options** in the menu bar.



**Note:** The display can be different, dependent on your starting point.

- 3 Clear the **Calculate all sizes** and **Show icon preview** options. Depending on your Mac version, clearing **Show icon preview** also disables **Calculate all sizes**.
- 4 Click **Use as Defaults** and close the window.
- 5 Open the **Terminal** application, located under **Applications > Utilities**.
- 6 Execute the following command:  
`defaults write com.apple.desktopservices DSDontWriteNetworkStores true`



- 7 Restart the Mac.

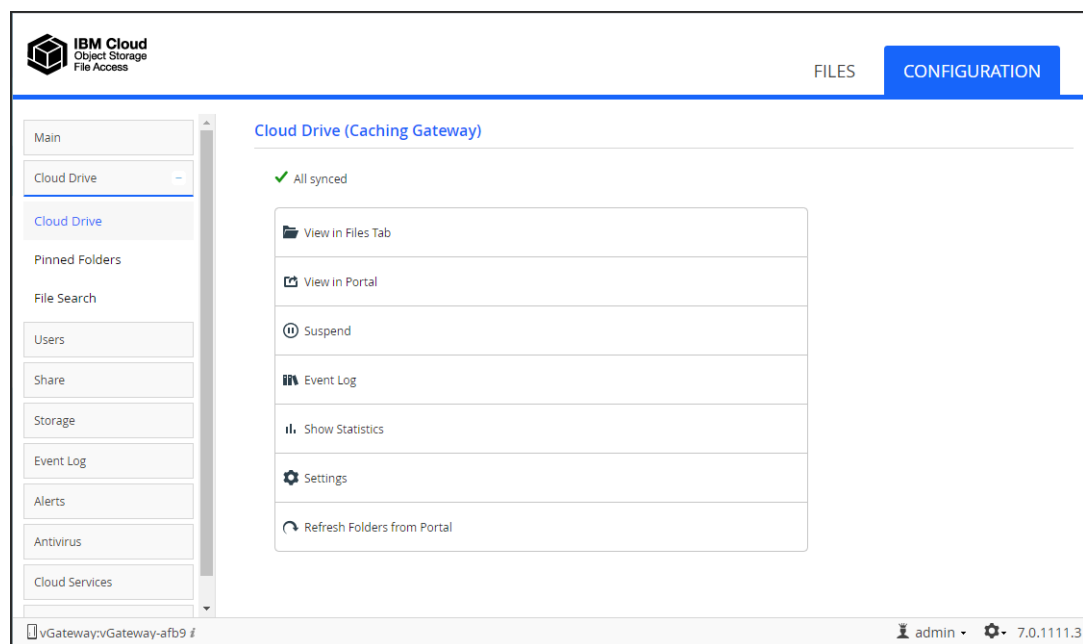
## MANAGING THE IBM COS FA GATEWAY

When the IBM COS FA Gateway is connected to an IBM COS FA Portal, you can:

- [Suspend and Unsuspend Cloud Sync](#)
- [Refresh the Folder List From the IBM COS FA Portal](#)
- [Control Cloud Sync Upload Speed](#)
- [Monitoring an IBM COS FA Gateway](#)

These operations are performed from the **Cloud Drive** page in the user interface.

- In the **CONFIGURATION** tab, select **Cloud Drive > Cloud Drive** in the navigation pane. The **Cloud Drive** page is displayed.



### Suspend and Unsuspend Cloud Sync

You can suspend or unsuspend cloud syncing at any time.

- To suspend syncing, in the **CONFIGURATION** tab, select **Cloud Drive > Cloud Drive** in the navigation pane, and then click **Suspend**.
- To resume syncing, in the **Cloud Drive** page click **Unsuspend**.

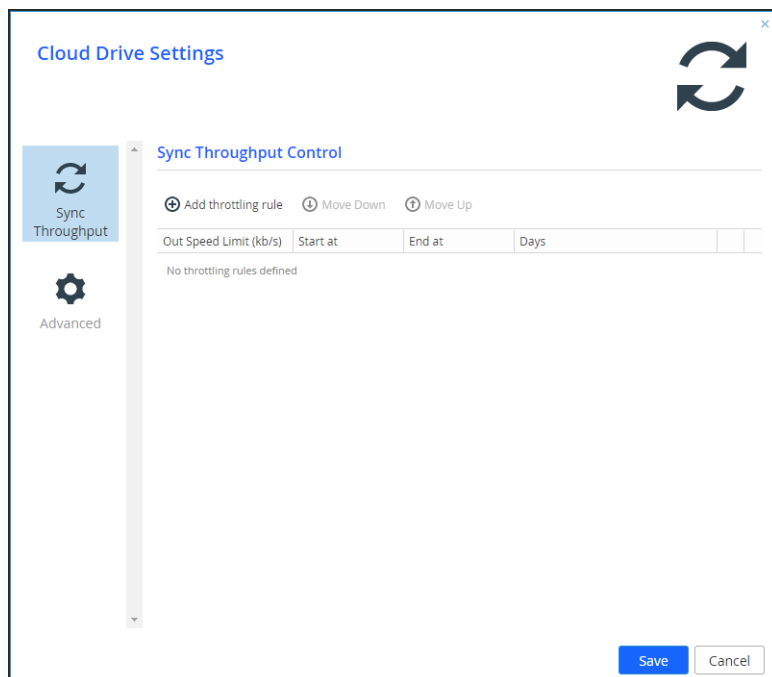
### Refresh the Folder List From the IBM COS FA Portal

You can refresh the folder list from the IBM COS FA Portal by clicking Refresh Folders from IBM COS FA Portal in the **Cloud Drive** page, accessed by selecting the **CONFIGURATION** tab, and then selecting **Cloud Drive > Cloud Drive**.

### Control Cloud Sync Upload Speed

You can limit the cloud sync upload speed.

- 1 In the **CONFIGURATION** tab, select **Cloud Drive > Cloud Drive** in the navigation pane.
- 2 Click **Settings**.  
The **Cloud Drive Settings** window is displayed.



When no throttling rules are defined, there is no speed restriction for uploading files to the Cloud Drive for syncing.

3 Click **Add throttling rule**.

4 Define the following for the throttling rule:

**Out Speed Limit (kb/s)** – The maximum speed to use for cloud drive sync upload in Kbits per second.


**Start at** – Specify the time when the bandwidth limit used for cloud drive sync upload starts.

**End at** – Specify the time when the bandwidth limit used for cloud drive sync upload ends. When the end time is before the start time, the end time is the next day.

**Days** – Specify that the bandwidth used for cloud drive sync upload should be restricted every day (the default) or only on specified days.

**Note:** A maximum of 50 rules can be defined.

When the start and end times for more than one rule overlap, the order of the rules in the list determines how they are implemented with the rule at the top of the list implemented first. Use **Move Down** and **Move Up** to change the order the rules are listed.

5 To remove a rule, select the rule row and click . The rule is removed.

6 Click **Save**.

### Monitoring an IBM COS FA Gateway

With an IBM COS FA Gateway, the following statistics are available:

- The number of files and amount of storage transferred between the IBM COS FA Gateway and the IBM COS FA Portal.
- The rate of transfer of data over time between the IBM COS FA Gateway and the IBM COS FA Portal.
- The amount of data currently in the cache.
- The amount of data in the cache over time.
- The number of currently active clients and the read and write rates between these client and the IBM

COS FA Gateway.

- The read and write rates between the clients and the IBM COS FA Gateway over time.

#### To display statistics:

- 1 In the **CONFIGURATION** tab, select **Cloud Drive > Cloud Drive** in the navigation pane.
- 2 Click **Show Statistics**.  
A new browser window is displayed with the IBM COS FA Portal sign in page.
- 3 Login to the IBM COS FA Portal and the statistics are displayed.  
The following shows the statistics for an IBM COS FA Gateway.



The graphs show the following:

**Cloud I/O** – Rate of transfer of data over time from the IBM COS FA Gateway to the IBM COS FA Portal (**Upload**) and the IBM COS FA Portal to the IBM COS FA Gateway (**Download**).

**Cache History** – The amount of data in the cache over time.

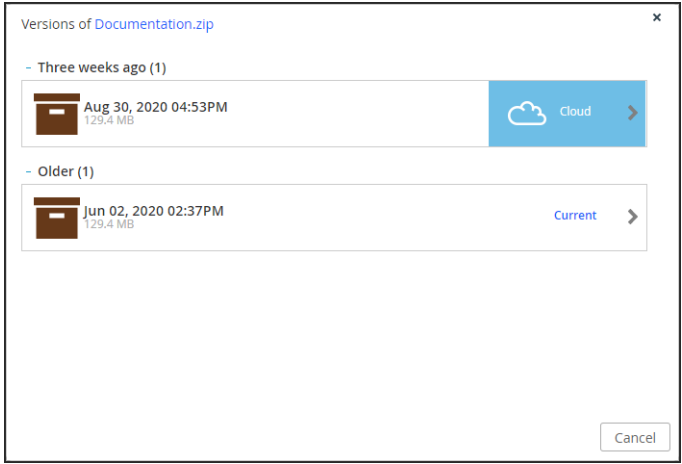
**Local I/O** – The write rate from the client to the IBM COS FA Gateway and the read rate from the IBM COS FA Gateway to the client, over time.

## ACCESSING PREVIOUS FILE VERSIONS

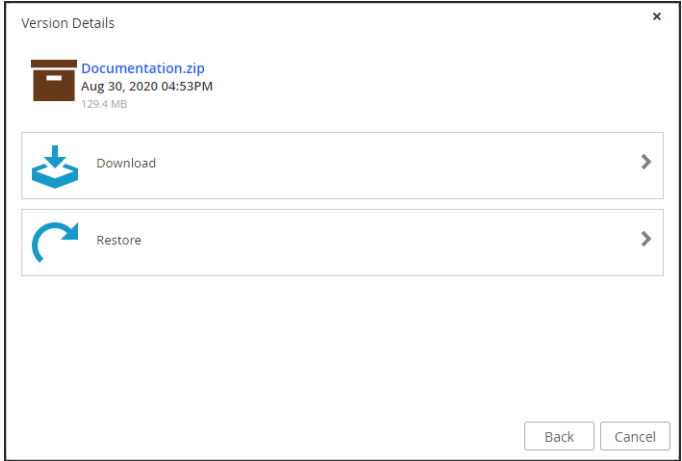
You can view and restore previous versions of the files and folders residing in the cloud on the IBM COS FA Portal.

#### To view and restore previous versions:

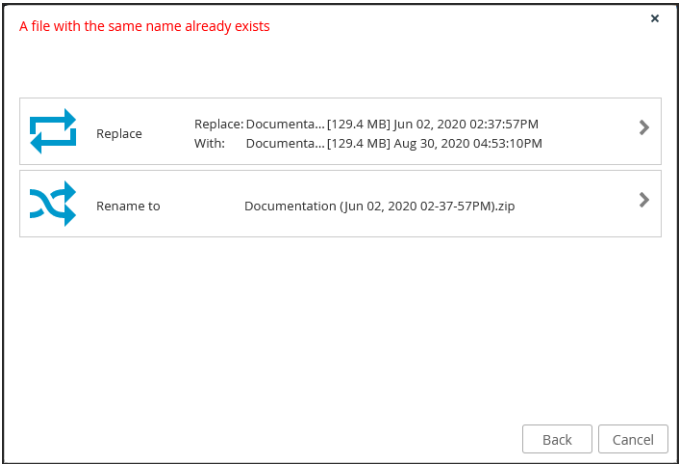
- 1 In the **FILES** tab, navigate to the file.
- 2 Right-click the file and select **Versions**.



3 Click the desired version of the file.



- 4 Select the action for the file version. The options include:
- Download** – Download the file to your local machine.
  - Preview** – If a preview of the file is possible, this option is displayed.
  - Restore** – Restore the version. If a version of the file exists, the following screen is displayed:



- i Select the option you want.  
A window is displayed when the restore has completed.
- ii Click **OK**.

## SEARCHING FOR FILES ON A MAC COMPUTER

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For details about activating this feature, contact IBM.

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## CHAPTER 6. SHARING LOCAL FILES

Folders and files that are required locally can be stored on the IBM COS FA Gateway and not synced with the IBM COS FA Portal. This content can be shared locally over the network. Files can be shared in any of the following ways:

- Using **Windows File sharing**. Every share is exposed through Windows File Sharing, so that Windows clients on the network can access the shares through Windows.
- Using **NFS**. You can use the IBM COS FA Gateway as an NFS server, enabling clients with specified IP addresses to access network shares on the IBM COS FA Gateway, as if the shares were located on the client's hard drive.

### In this chapter

- [Network Sharing Protocols](#)
- [Managing Network Shares](#)
- [Accessing Network Shares](#)
- [Modifying Advanced File Sharing Settings](#)

To make any local folder accessible to other IBM COS FA Gateway requires the following basic steps:

- 1 Assign the user a IBM COS FA Gateway user account. See [Managing IBM COS FA Gateway Users](#).
- 2 Configure the relevant protocol (Windows File Sharing, NFS) that you want your users to use to access the files. See [Network Sharing Protocols](#).
- 3 Make a *network share* on the folder you want to share. See [Managing Network Shares](#).
- 4 Provide access to the share. See [Accessing Network Shares](#).

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## NETWORK SHARING PROTOCOLS

IBM COS FA Gateways support the following protocols for sharing files and folders over the network:

**Windows File Sharing** – Enabled on all network shares and enables Windows clients on the network to access the shares through Windows. For more details, see [Configuring Windows File Sharing](#).

**NFS** (Network File System) – Clients with certain IP addresses can access network shares on the IBM COS FA Gateway, as if the shares were located on the client's hard drive. See [Configuring NFS Access](#).

### Configuring Windows File Sharing

Windows files that you want to share via the IBM COS FA Gateway can be protected using one of the following access levels:

- [Only Authenticated Users](#)
- [Windows ACL Emulation Mode](#)

### Only Authenticated Users

Users are required to authenticate using their IBM COS FA Gateway user name and password, in order to access the network share.

### Windows ACL Emulation Mode

The share is a Windows ACL emulation mode share supporting a full Windows file system folder structure and permissions, including enforcement and settings, known as NT ACLs, and extended attributes such as read-only and hidden.

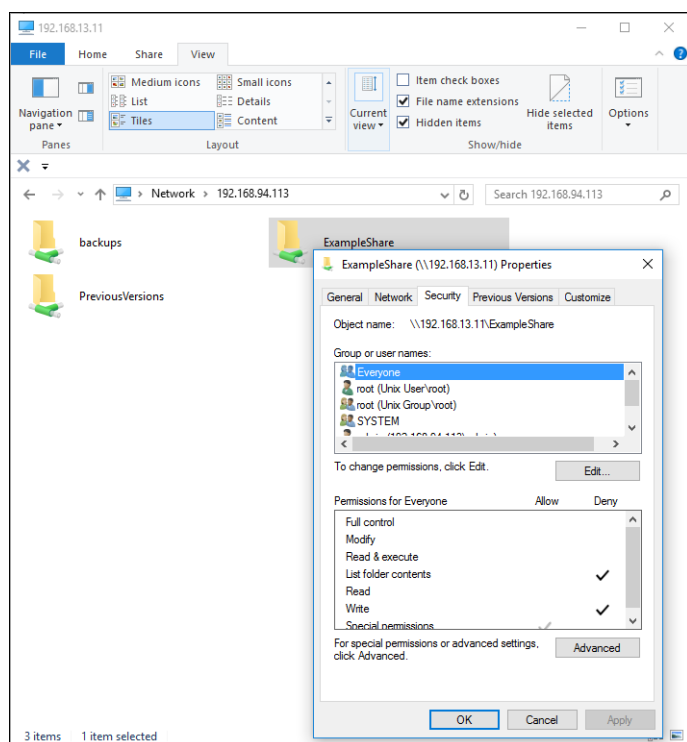


End users who are familiar with a given folder structure and shares, as well as a given permission scheme, while using the Windows file server, continue to see the same folder structure, shares, and permission scheme after migration to the IBM COS FA Gateway. This enables the migration from a current Windows Server-based file system to a IBM COS FA Gateway, without the need to apply any structural changes such as flattening the folder structure or simplifying the permissions scheme. The migration is entirely transparent to the end user.

Transition of the mapped network drives and share names available on the Windows client from the Windows file server location to the IBM COS FA Gateway location is performed seamlessly using AD GPO capabilities.

File and folder access continue to be available following the migration in the same way they were in the Windows Server-based file system. Access after the migration is through the SMB access provided by the IBM COS FA Gateway.

Users continue to access the files and folders through standard Windows client computers; for example, using Windows Explorer. You can manage and change permissions by right-clicking a file or folder and selecting **Properties** and then the **Security** tab, just like over a Windows File server.



To set up shares in the IBM COS FA Gateway with NT ACL permissions, you need to do the following:

- Set up the users that will access the file system. IBM recommends taking the users from your Active Directory. For more details, see [Configuring Windows File Sharing for Active Directory](#).
- Set up the share with ACL emulation in the IBM COS FA Gateway. For more details, see [Managing Network Shares](#).
- Copy the files from the Windows File Server. For more details, see [Copying Files From an External File Server to the IBM COS FA Gateway](#).

### To configure Windows File Sharing:

- 1 In the **CONFIGURATION** tab, select **Share > Windows File Sharing** in the navigation pane. The **Windows File Sharing** page is displayed.

The screenshot shows the IBM Cloud Object Storage File Access Configuration page. The left sidebar contains a navigation menu with options: Main, Cloud Drive, Users, Share (selected), Shares, Windows File Sharing (highlighted), FTP Server, TFTP Server, NFS Settings, Storage, Event Log, Alerts, Antivirus, Cloud Services, and System. The main content area is titled 'Windows File Sharing' and includes the following settings:

- Enable SMB (Windows File Sharing):** A checkbox that is checked.
- Packet Signing:** A dropdown menu set to 'Disabled' with a help icon.
- Client Idle Disconnect Time (minutes):** A text input field containing '10'.
- Use compatibility mode:** An unchecked checkbox.
- Unix Extensions Mode:** A checked checkbox.
- Hide unreadable files and folders:** An unchecked checkbox.

Below these settings are 'Save' and 'Revert' buttons. A section titled 'Domain/Workgroup' contains the following information:

- Assigned to:** WORKGROUP
- Operation Mode:** Workgroup
- Status:** OK (indicated by a green checkmark)

At the bottom of this section is a 'Connect to Domain/Workgroup' button. The footer of the page shows the user 'admin' and the version '7.0.1111.3'.

Where:

**Enable SMB (Windows File Sharing)** – Enable or disable Windows file sharing. If Windows file sharing is disabled, Windows shared folders, defined via **Share > Shares**, as described in [Managing Network Shares](#), are no longer accessible.

**Packet Signing** – Whether SMB packet signing is required or not, or whether it is dependent on the agreement of the client.

**Client Idle Disconnect Time (minutes)** – The amount of time in minutes after which a client should be disconnected, if the connection is idle. There is usually no need to change this setting. The default is 10 minutes.

**Use compatibility mode** – Enable access by Windows versions 2000 or earlier. Enabling this option reduces security.

**Unix Extensions Mode** – Enable clients running Unix-like operating systems (such as Linux and Mac OS/X) to set permission masks for files using the *chmod* utility, over the SMB protocol.

**Hide unreadable files and folders** – Hide unreadable files or folders, or shares to which users do not have access, when users access shares via Windows File Sharing.

- 2 Click **Save** to save the Windows File Sharing settings.

- 3 Specify the **Domain/Workgroup** information:

**Assigned to** – The name of an Active Directory domain or Windows workgroup to which the IBM COS FA Gateway's Windows File Sharing service is connected.

**Operation Mode** – Whether the IBM COS FA Gateway's Windows File Sharing service is connected to an Active Directory domain or to a Windows workgroup.

**Status** – The status of the connection to an Active Directory domain or Windows workgroup.

**Advanced Mappings** – When connected to an Active Directory domain. See [Defining Users From an Active Directory Domain, Tree or Forest](#).

- 4 Click **Connect to Domain/Workgroup** to join an Active Directory domain or Windows workgroup:
  - For a network with a Active Directory with either a single domain or multi-domain environment: a tree or forest, see [Configuring Windows File Sharing for Active Directory](#).
  - For a network with no domain controller, see [Configuring Windows File Sharing for a Workgroup](#) for details.

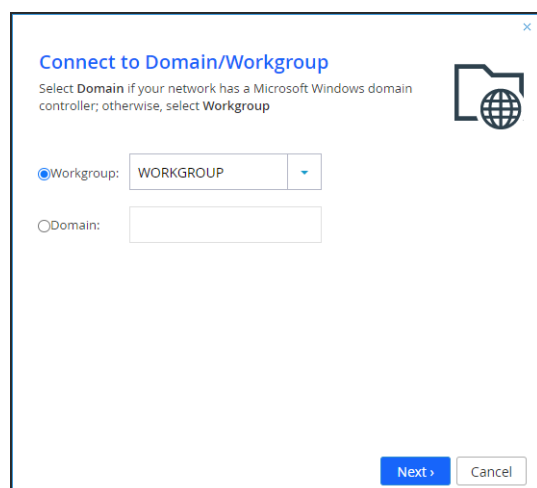
### Configuring Windows File Sharing for Active Directory

To configure Windows file sharing for an individual Active Directory domain and for an Active Directory tree or forest, see [Defining Users From an Active Directory Domain, Tree or Forest](#).

### Configuring Windows File Sharing for a Workgroup

To configure Windows file sharing for a workgroup:

- 1 In the **CONFIGURATION** tab, select **Share > Windows File Sharing** in the navigation pane. The **Windows File Sharing** page is displayed.
- 2 Click **Connect to Domain/Workgroup**. The **Windows File Sharing Wizard** opens, displaying the **Connect to Domain/Workgroup** window.



- 3 Choose **Workgroup**, and then select the workgroup you want or else type the name of the workgroup in the empty field.
 

**Note:** You must assign this same workgroup name to all of the computers in the network. In most Windows versions, the default workgroup name is WORKGROUP. The IBM COS FA Gateway automatically scans for available workgroups in the LAN. The results of these scans can be selected from the **Workgroup** list.
- 4 Click **Next** and then click **Finish**.

### Configuring FTP Access

For information about activating this feature, contact IBM.

### Configuring TFTP Access

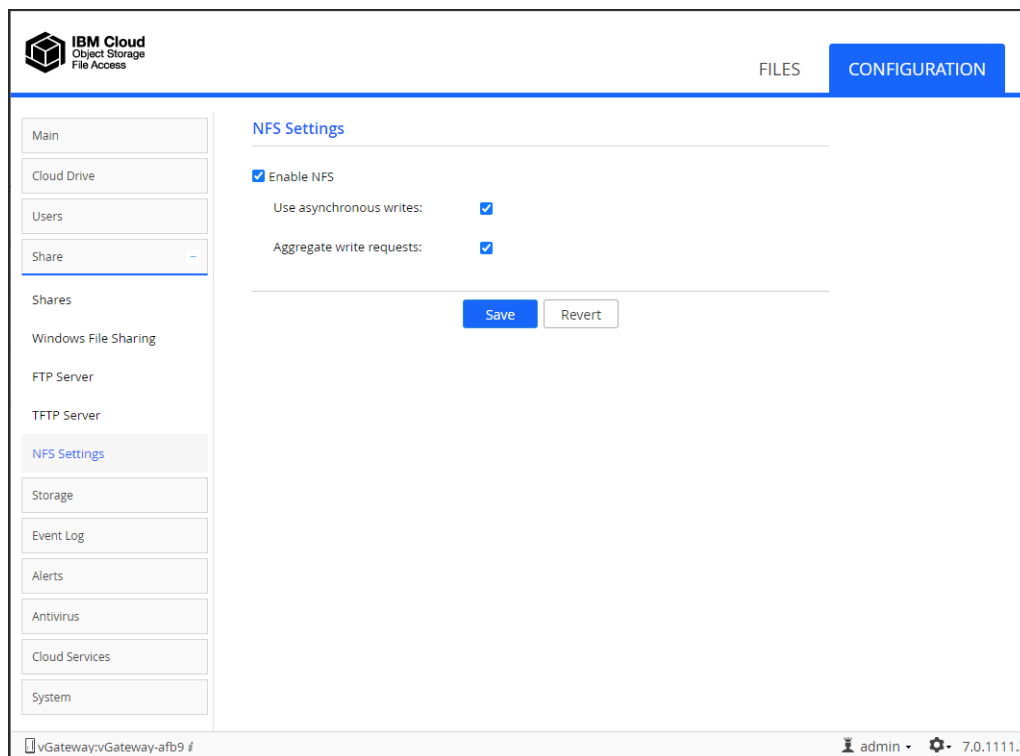
For information about activating this feature, contact IBM.

## Configuring NFS Access

When Network File System (NFS) access is enabled, clients with certain IP addresses can access network shares on the IBM COS FA Gateway as if the shares were located on the client's hard drive. For information, see [Mounting Network Shares Using NFS](#).

To configure NFS access:

- 1 In the **CONFIGURATION** tab, select **Share > NFS Settings** in the navigation pane. The **NFS Settings** page is displayed.



- 2 Check **Enable NFS** and specify the details.  
**Use asynchronous writes** – Enable asynchronous writes. When a client attempts to write data to the IBM COS FA Gateway, the IBM COS FA Gateway sends the client an acknowledgment of the write request, *before* actually writing the data to the disk. This enables the client to post additional write requests to the IBM COS FA Gateway, while the IBM COS FA Gateway is still writing data from the first request to disk, thereby improving throughput.  
**Aggregate write requests** – Write requests are aggregated and sent in a single batch, instead of one at a time, to improve throughput.
- 3 Click **Revert**, if you made changes that you did not save, to revert to display the saved values.
- 4 Click **Save**.

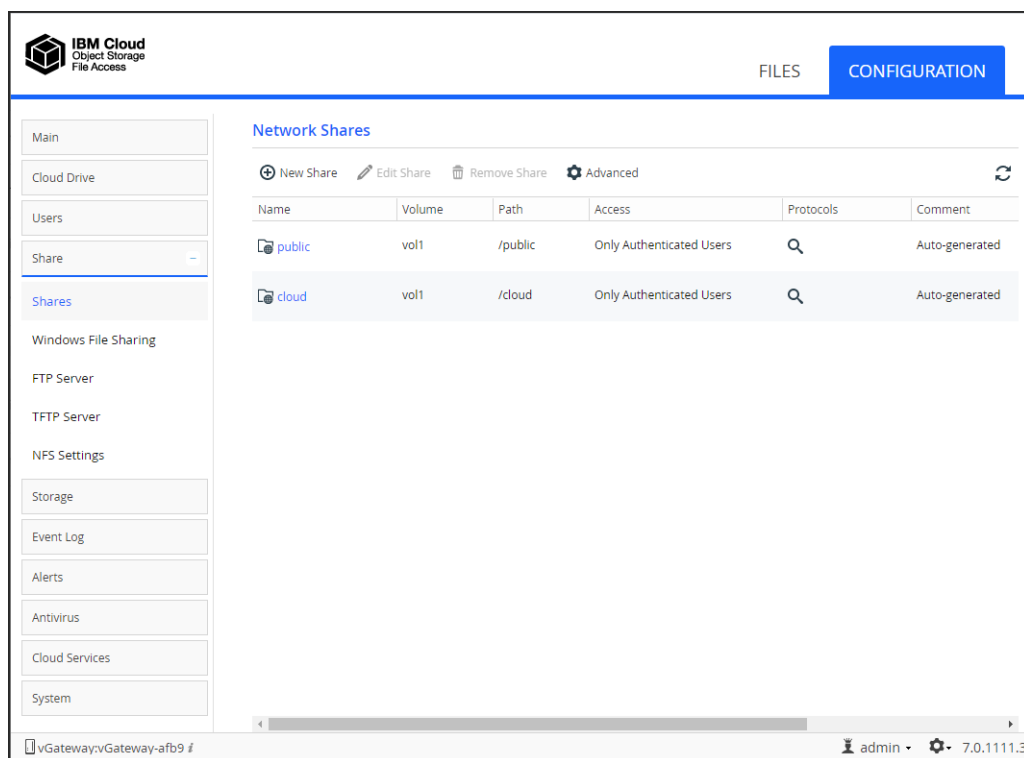
**Note:** Unix permissions on the files, *chmod*, are not currently supported, except for the *execute* bit.

## MANAGING NETWORK SHARES

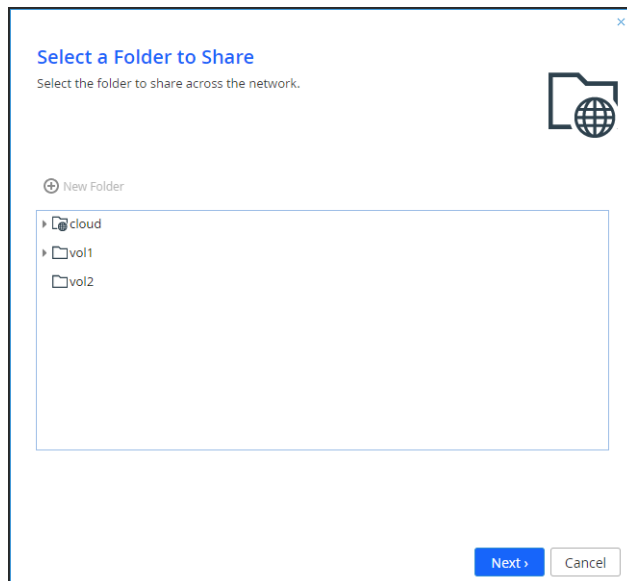
The **Network Shares** page allows you to manage all network shares on the IBM COS FA Gateway, both for content that is synced with a IBM COS FA Portal and content that is only available locally.

To define a network share:

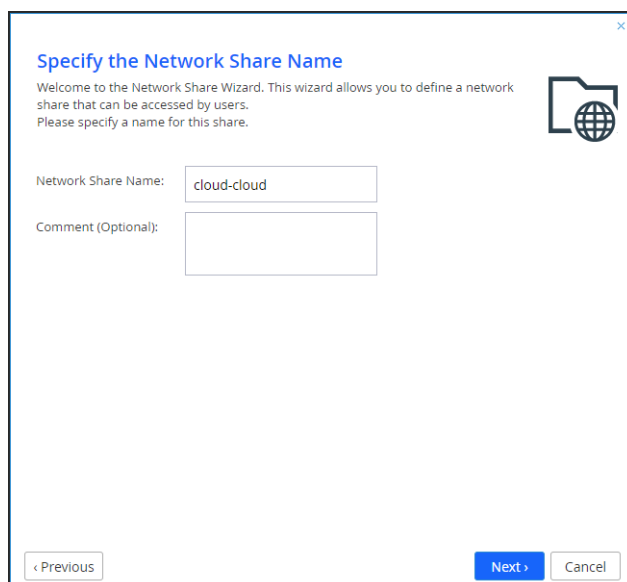
- 1 In the **CONFIGURATION** tab, select **Share > Shares** in the navigation pane. The **Network Shares** page is displayed.



- 2 Click **New Share**. The **Select a Folder to Share** wizard opens, displaying the volumes and folders on the IBM COS FA Gateway.



- 3 Select the volume, folder, or subfolder on which you want to define the share.
  - To create a new subfolder to select as a nested share, select the parent folder, click **New Folder**, and then assign the subfolder a name.
  - You can define nested shares based on subfolders within your own cloud drive, which are available to users based on the permissions defined when creating the share. If the share has NT ACL settings, these settings are applied to the nested share and to every share below this share.
- 4 Click **Next** and then assign the network share a name.



- 5 Click **Next** and choose through which sharing protocols to expose this share.

**Windows File Sharing** is checked by default and cannot be deselected. From the drop-down, select one of these access levels for the share:

- **Only Authenticated Users.** Users will be required to authenticate using their IBM COS FA Gateway user name and password, in order to access the network share.
- **Windows ACL Emulation Mode.** The share will be a Windows ACL emulation mode share.

Users access the shared files and folders through standard Windows client computers; for example, using Windows Explorer through the SMB access provided by the IBM COS FA Gateway.

Windows ACL Emulation Mode also allows you to block users from writing specific file types into the IBM COS FA Gateway share or gaining control of the content located on it.

To copy the files with their ACLs to the IBM COS FA Gateway, see [Copying Files From an External File Server to the IBM COS FA Gateway](#).

For more information, see [Configuring Windows File Sharing](#).

**Client Side Caching.** Server files are designated for off-line work so that a copy of the files is cached

on the client computer and can be accessed when the client is off line in exactly the same way as if they were stored on the Windows file server.

**Manual caching for documents** – Users must cache files manually.

**Automatic caching for documents** – A copy of the files is cached automatically.

**Disabled** – The client computer cannot cache files locally and the updated copy must be retrieved from the file server.

- 6 Specify how you want to share the files.

**FTP** – For details about activating this feature, contact IBM.

**Search** – Users will be able to search for files in this share.

- 7 Click **Next**.

The **NFS (UNIX File Sharing)** window is displayed.

**NFS (UNIX File Sharing)**

NFS access is based on client and host IP addresses. Choose the clients to which you want to offer access.

The NFS mount path for this share is: /shares/cloud

☐ Enable NFS Access

New Remove

Host	Netmask	Permission

Previous Next Cancel

- 8 Check the **Enable NFS Access** option to enable NFS clients to access the share. Either, click **New** to configure each client to which you want to grant access. A row is displayed in the table:

**a** Enter the client's IP address and netmask in the appropriate fields.

**b** Select the permitted level of access to the network share via NFS. Options are **None**, **PreviewOnly**, **Read Only**, or **Read/Write**.

**Note:** Preview Only permission prevents downloading, copying, or printing the file and content cannot be synchronized for offline access. For full details, refer to the *IBM COS FA Portal Team Administrator Guide*.

Or,

Click **Remove** and then select the client's IP address to remove the client from the list.

**Note:** The NFS mount path for the network share is specified at the top of the window.

- 9 Click **Next** and set which users can access this network share.



**Configure Permissions**

A person must have a user account in order to access this network share. Choose the users with whom to share these files:

Domain QA Users Quick Search

Name	Permission
Everyone	Read/Write

< Previous Next > Cancel

- a In the **Local Users** drop-down list, select one of the following:
  - Local Users** – Search the users defined locally on the IBM COS FA Gateway.
  - Domain *domain* Users** – Search the users belonging to the domain called *domain*.
  - Local Groups** – Search the user groups defined locally on the IBM COS FA Gateway.
  - Domain *domain* Groups** – Search the user groups belonging to the domain called *domain*.
- b In the **Quick Search** field, type a string that is displayed anywhere within the name of the user or user group you want to add, or click . . . to list the users.  
A list of users or user groups matching the search string is displayed.
- c Select the user or user group in the table.  
The user or user group is added to the list of users and user groups who should have access to the network share.
- d For each user and user group, click in the **Permission** field, and then select the access level from the drop-down list.

10 Click **Next** and then **Finish** to complete the wizard.

### Blocking File Types from Network Shares

IBM COS FA Gateway administrators can block users from writing specific file types into the IBM COS FA Gateway share or gaining control of the content located on it. The file types that are blocked are set per network share.

When file types are blocked, share users cannot write or create files with a blocked extension or rename a file to a forbidden extension. However, if you block extensions for a pre-existing share that already contains files with the forbidden extension, the pre-existing files are not deleted.

#### To block files:

- 1 In the **CONFIGURATION** tab, select **Share > Shares** in the navigation pane.
- 2 Click **New Share** to create a new share with blocked file type, or **Edit Share** to block file types on an existing share.
- 3 Proceed through the Network Share creation wizard as described in [Managing Network Shares](#). In the **Sharing Protocols** window:
  - a Define the access level for **Windows File Sharing** as **Windows ACL Emulation Mode**. Users will be able to access the share using the SMB protocol and configure permissions for files and

folders in the same way they would on a Windows file server.

- b** Select the **Block the following file extensions** check box, and then define the file extensions for the types of files you want to block.

You can block multiple file extensions, as shown in the image below. List only the letters of each file extension, using a comma to separate between them. For example, to block EXE files, list the `exe` file extension; to block PIF files, list the `pi f` file extension. To block both EXE and PDF files, list them as `exe, pdf`.

Blocked extensions are not case sensitive. Wildcards (for example, `*.exe`) are not supported.

- 4** Click **Next** and continue with the wizard to create the new share or edit the existing share.

### Copying Files From an External File Server to the IBM COS FA Gateway

**Note:** To copy a complete Windows or NetApp File Server by migrating it to an IBM COS FA Gateway requires in-depth planning and should be done in conjunction with IBM COS FA Gateway support. For details, see the *IBM COS FA Gateway Setup Guide*.

To copy individual shares from a Windows or NetApp File Server, use the following procedure.

#### To migrate shares to the IBM COS FA Gateway:

- 1** In the **CONFIGURATION** tab's **Main > Home** page, click **File Server Migration**. The **File Server Migration** page is displayed.
- 2** Click **+** to create a new job. The **Create Job** wizard is displayed showing the **Task Type** step.

**Create Job**

Task Type → Connect → Select Shares

**Discovery**  
Analyzing shares, you will get a report with information regarding each Share.

**Migration**  
Copying shares to Object Storage File Access

Cancel Next

The default job is a discovery job.

- Click the **Migration** job to change the job to migrate a file server.

**Create Migration Job**

Task Type → Connect → Select Shares → Select Options

**Discovery**  
Analyzing shares, you will get a report with information regarding each Share.

**Migration**  
Copying shares to Object Storage File Access

Cancel Next

- Click **Next**.  
The **Connect** step is displayed.

**Create Job**

Task Type → **Connect** → Select Shares

Server Type: Other

Source: Enter Source Server

Username: Enter Username

Password: Enter Password

Cancel Previous Next

- Enter the IP address or DNS name for the file server and an administrator user name and password to access this server.
- Click **Next**.  
The **Select Shares** step is displayed.

**Create Migration Job**

Task Type → Connect → **Select Shares** → Select Options

☐ Select All

<input type="checkbox"/> HR	C:\var\vol\2\HR
<input type="checkbox"/> Marketing	C:\var\vol\2\Marketing
<input type="checkbox"/> PreviousVersions	C:\var\vol\2\PreviousVersions
<input type="checkbox"/> Projects	C:\var\vol\2\Projects
<input type="checkbox"/> public	C:\var\vol\2\public
<input type="checkbox"/> Sales	C:\var\vol\2\Sales

Cancel Previous **Next**

- 7 Select the shares to migrate and click **Next**.  
The **Select Options** step is displayed.

**Create Migration Job**

Task Type → Connect → Select Shares → **Select Options**

☒ Migrate NT-ACLs

☐ Exclude these path patterns from migration: (use the colon character (':') as separator)

Example: \*.pdf;\*.jpg

☒ Start now

☐ Don't start

☐ Schedule: 09/24/2020 04:54 PM

☐ Limit bandwidth to: 1000 KB/Sec

☐ Limit during hours: 08:00 AM 05:00 PM

Cancel Previous **Create**

- 8 You can select to migrate the data from the file server with the ACLs and specify when to start the migration, either immediately or at a scheduled date and time.  
If you are migrating during working hours, you can throttle the bandwidth used for the migration so as not to adversely impact ongoing work.
- 9 Click **Create**.  
After migrating all the shares, the job completes.


The screenshot shows the IBM Cloud File Server Migration Dashboard. At the top, there's a header with the IBM Cloud logo, 'Object Storage File Access', and 'File Server Migration'. On the right, it says 'Hello admin' and 'Back to Administration'. Below the header, the 'Dashboard' title is followed by a filter bar with buttons for 'Discovery', 'Migration', 'Completed', and 'Deleted'. A table lists migration jobs with columns for 'Source', 'Type', 'Shares', and 'Status'. Two jobs are visible, both from '192.168.28.187' and both marked as 'Completed'. The first job completed 'at: 20 Minutes Ago' and the second 'at: 3 Hours And 56 Minutes Ago'.

Source	Type	Shares	Status
192.168.28.187	HR, Marketing and 2 more		Completed at: 20 Minutes Ago
192.168.28.187	HR, Marketing and 2 more		Completed at: 3 Hours And 56 Minutes Ago

If needed, scroll to the end of the job for buttons to access the migration report and shares details.

This screenshot shows the same dashboard but with the 'Actions' column visible. The 'Status' column shows 'Completed at: 20 Minutes Ago'. The 'Actions' column contains icons for editing (pencil), deleting (trash), viewing details (info), and running (play button).

Status	Actions
Completed at: 20 Minutes Ago	[Edit] [Delete] [Info] [Run]

- 10 Click  to edit the migration job schedule and throttling.

The 'Edit' form allows configuring the migration job. It includes checkboxes for 'Schedule', 'Limit bandwidth to', and 'Limit during hours'. The 'Schedule' section has fields for date (09/24/2020) and time (05:10 PM). The 'Limit bandwidth to' section has a field for 1000 KB/Sec. The 'Limit during hours' section has fields for 08:00 AM and 05:00 PM. At the bottom are 'Cancel' and 'Update' buttons.

**Edit**











☐ Schedule: 09/24/2020 05:10 PM

☐ Limit bandwidth to: 1000 KB/Sec

☐ Limit during hours: 08:00 AM 05:00 PM




Cancel Update


- 11 Click  to display the migration report.

Migration					
Source  192.168.28.187	Server Type Auto Detect	Log 			
Share	Status	Files Copied	Size Copied	Start Time	End Time
 HR	 Completed	25	67.8 MB	Aug 30, 2020, 01:40 PM	Aug 30, 2020, 03:52 PM
 Marketing	 Completed	303	239.4 MB	Aug 30, 2020, 03:52 PM	Aug 30, 2020, 03:52 PM
 Projects	 Completed	9	153.3 MB	Aug 30, 2020, 03:52 PM	Aug 30, 2020, 03:52 PM
 Sales	 Completed	302	28.6 MB	Mar 30, 2020, 03:52 PM	Mar 30, 2020, 03:52 PM

Job id: 5

[Details](#) [Close](#)

- Optionally, click  to export the migration log file to a .log text file.
- Click  to display the list of every time this job was run with the results of each run, including the start and end times for the job, the number of files migrated and the total size of the migration, access to the report and the ability to download the log, which provides information about the migration and any errors that occurred during the migration.
  - Optionally, in the dashboard you can select a job and click  to delete it. After deleting a job, you can display all the jobs including the deleted jobs by clicking the **Deleted** filter in the dashboard.

You can restore deleted jobs by selecting the deleted jobs to restore and clicking .

The share structure from the source is recreated on the IBM COS FA Gateway, including nested shares and their permissions. If there are any recoverable errors during the copy process, retry the migration for the failed shares.

**Note:** Only ACLs are migrated with the files. Extended attributes are not migrated. In the IBM COS FA Gateway the shares are defined with Windows ACL Emulation Mode, as in the following example.

## Modifying Shares

Select the share and click **Edit Share**. Proceed as for defining a new network share. See [Managing Network Shares](#).

## Removing Shares

Select the share, click **Remove Share** and then **Yes** to confirm. This removes the share from the volume or folder it was defined on.

## ACCESSING NETWORK SHARES

---

This section includes the following topics:

- [Viewing Network Shares Using Windows File Sharing](#)
- [Mounting Network Shares Using NFS](#)
- [Accessing the Volumes Share](#)

### Viewing Network Shares Using Windows File Sharing

Use this procedure to view network shares when Windows File Sharing is configured. For information, see [Configuring Windows File Sharing](#).

- 1 On a computer connected to the same switch as the IBM COS FA Gateway, view the network neighborhood. The network neighborhood is accessed in different ways, dependent on the operating system. For example, in Microsoft Windows 10, click **Start > Settings** and then click **Network & Internet**.
- 2 Double-click the IBM COS FA Gateway icon.  
A list of network shares is displayed.

**Note:** When accessing a network share, if your user name and password on the computer are identical to a user name and password on the IBM COS FA Gateway, the computer automatically logs in to the share using that user name and password. You will not be prompted to authenticate. In all other cases, a pop-up window will appear, and you must authenticate using a valid user name and password.

### Mounting Network Shares Using NFS

When NFS access is configured, use the following procedure to access network shares from a Linux/UNIX computer.

- Run the following command: `mount deviceIP:mountPath localFolder`

Where:

*deviceIP* – The IBM COS FA Gateway DNS namer or IP address.

*mountPath* – The network share's mount path.

*localFolder* – The name of the local folder.

**Note:** To view a network share's mount path, in the **Share > Shares** page, click the name of the network share. The **Network Share Wizard's NFS (UNIX File Sharing)** window displays the network share's mount path in title area.

For example, if the IBM COS FA Gateway IP address is 10.1.1.1, the mount path is `/shares/share9`, and you want to mount this network share on the local folder `/var/mnt/share9`, the relevant command would be:

```
mount 10.1.1.1:/shares/share9 /var/mnt/share9
```

For more information, see [Configuring NFS Access](#).

### Accessing the Volumes Share

Administrators can access a hidden administrative share called `/volumes` using Windows File Sharing. Alternatively, they can access this share via the IBM COS FA Gateway user interface's **FILES** tab.

The administrative share allows direct access to the files on each of the IBM COS FA Gateway's volume.

#### To access the volumes share via Windows File Sharing:

- On a computer connected to the same switch as the IBM COS FA Gateway, browse to `\\devicename\volumes\` where *devicename* is the name of your IBM COS FA Gateway.  
For information on viewing your IBM COS FA Gateway's name, see [Viewing IBM COS FA Gateway Details](#).

The administrative share is displayed.

**Note:** If your user name and password on the computer are identical to a user name and password on the IBM COS FA Gateway, the computer automatically logs in to the share using that user name and password. You will not be prompted to authenticate. In all other cases, a pop-up window will appear, and you must authenticate using a valid user name and password.

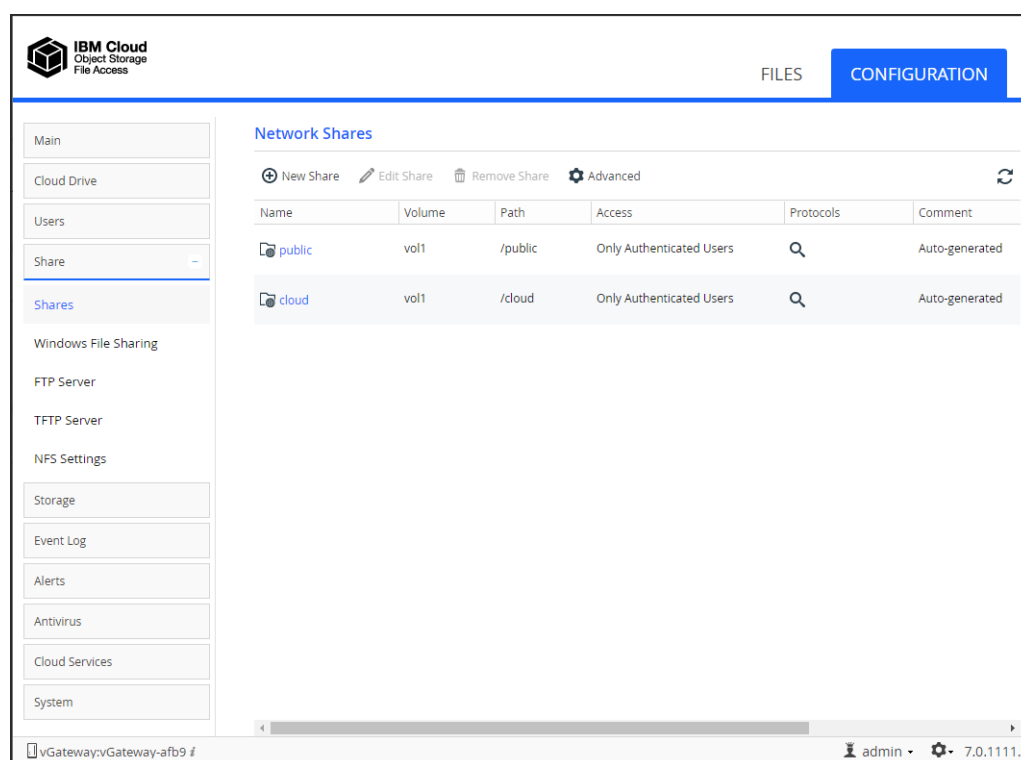
**To access the volumes share via the FILES tab:**

- In the FILES tab, change to the *Volumes* view.  
The administrative share opens, displaying all volumes.

## MODIFYING ADVANCED FILE SHARING SETTINGS

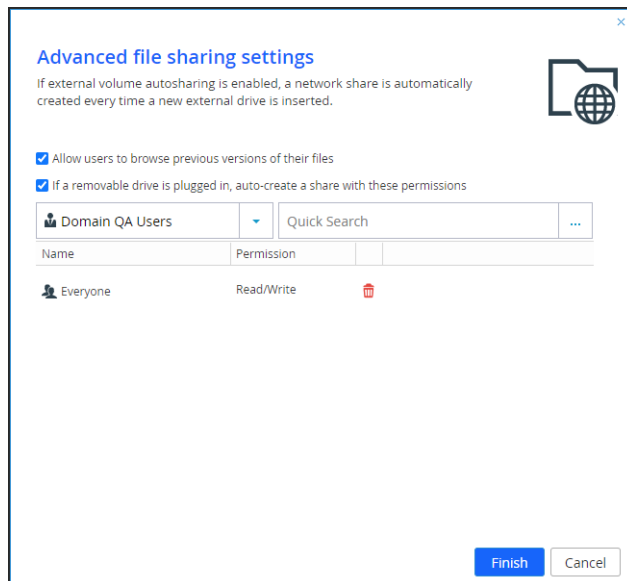
By default, only administrators can browse and retrieve previous file versions. You can enable non-administrator users to browse and retrieve previous versions of files that they have permissions to view.

- In the **CONFIGURATION** tab, select **Share > Shares** in the navigation pane.  
The **Network Shares** page is displayed.



- Click **Advanced**.  
The **Advanced file sharing settings** window is displayed.





- 3 Check **Allow users to browse previous versions of their files**.
- 4 Click **Finish**.

**To prevent users from browsing previous versions of their files:**

- 1 In the **CONFIGURATION** tab, select **Share > Shares** in the navigation pane. The **Network Shares** page is displayed.
- 2 Click **Advanced**. The **Advanced file sharing settings** window is displayed.
- 3 Uncheck **Allow users to browse previous versions of their files**.
- 4 Click **Finish**.

## CHAPTER 7. ANTIVIRUS FILE SCANNING

Antivirus software is used to prevent malware from infecting files in the organization. IBM COS FA Gateways integrate with *McAfee Endpoint Security for Linux Threat Prevention* to ensure data protection.

When antivirus is enabled, every file that is copied, moved, or edited on the IBM COS FA Gateway is automatically and transparently scanned for malware before the user can access the file.

**Note:** Stub files are not scanned for viruses until the actual files are downloaded from the IBM COS FA Portal.

If an infected file is found, it is quarantined so that it is no longer available and not synced to the IBM COS FA Portal, and the administrator is informed so that any action that might be necessary can be determined.

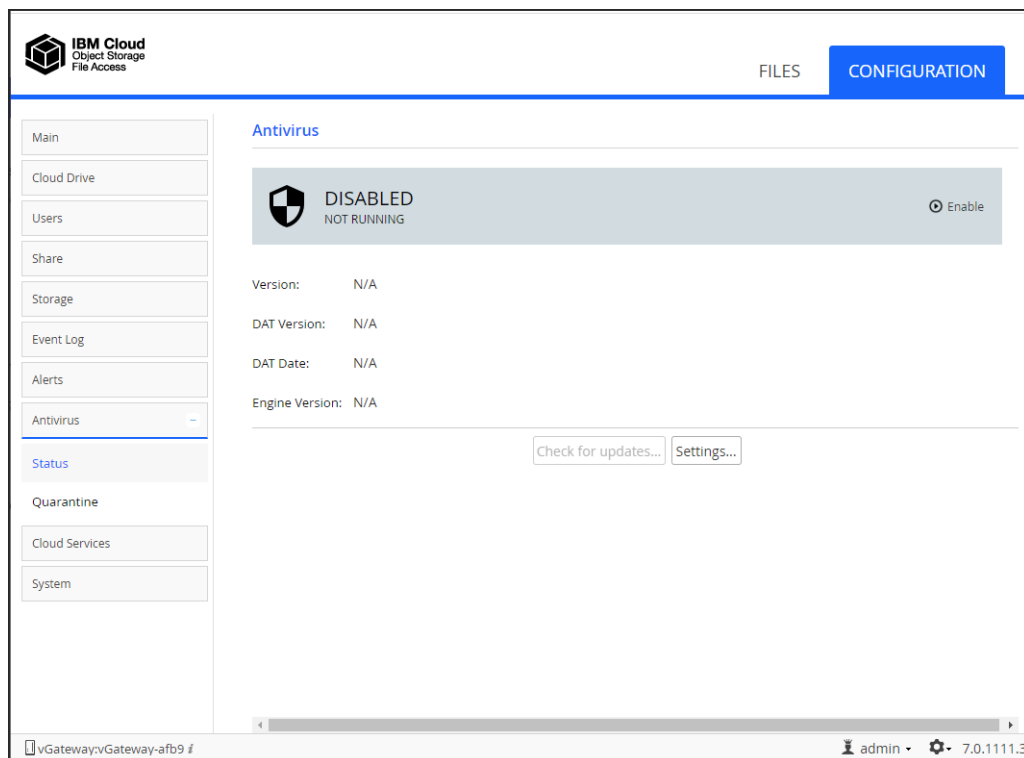
### In this chapter

- [Setting up Antivirus File Scanning](#)
- [Updating the Antivirus DAT File](#)
- [Managing Quarantined Files](#)
- [Antivirus Logs](#)

## SETTING UP ANTIVIRUS FILE SCANNING

To enable antivirus scanning:

- 1 In the **CONFIGURATION** tab, select **Antivirus > Status** in the navigation pane. The **Antivirus** page is displayed.

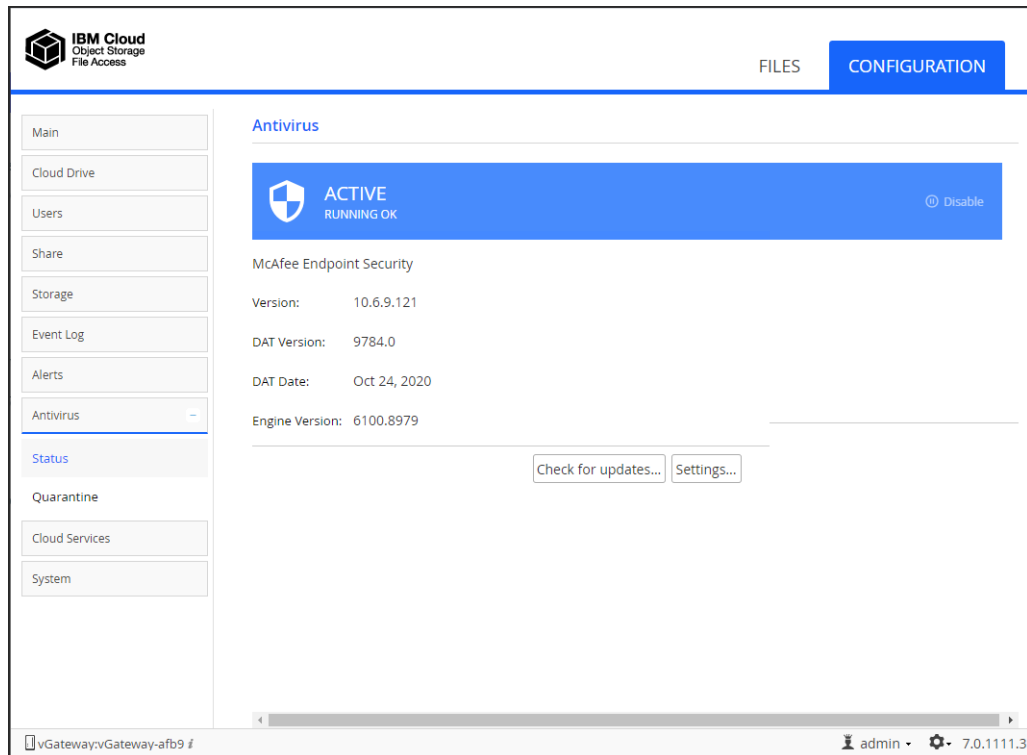


- 2 Click **Enable** to enable antivirus scanning.

Antivirus scanning is enabled. Scanning for malware will occur on every file that is accessed from the IBM COS FA Gateway.

**To disable antivirus scanning:**

- 1 In the **CONFIGURATION** tab, select **Antivirus > Status** in the navigation pane. The **Antivirus** page is displayed.



- 2 Click **Disable** to enable antivirus scanning.

Antivirus scanning is disabled.

## UPDATING THE ANTIVIRUS DAT FILE

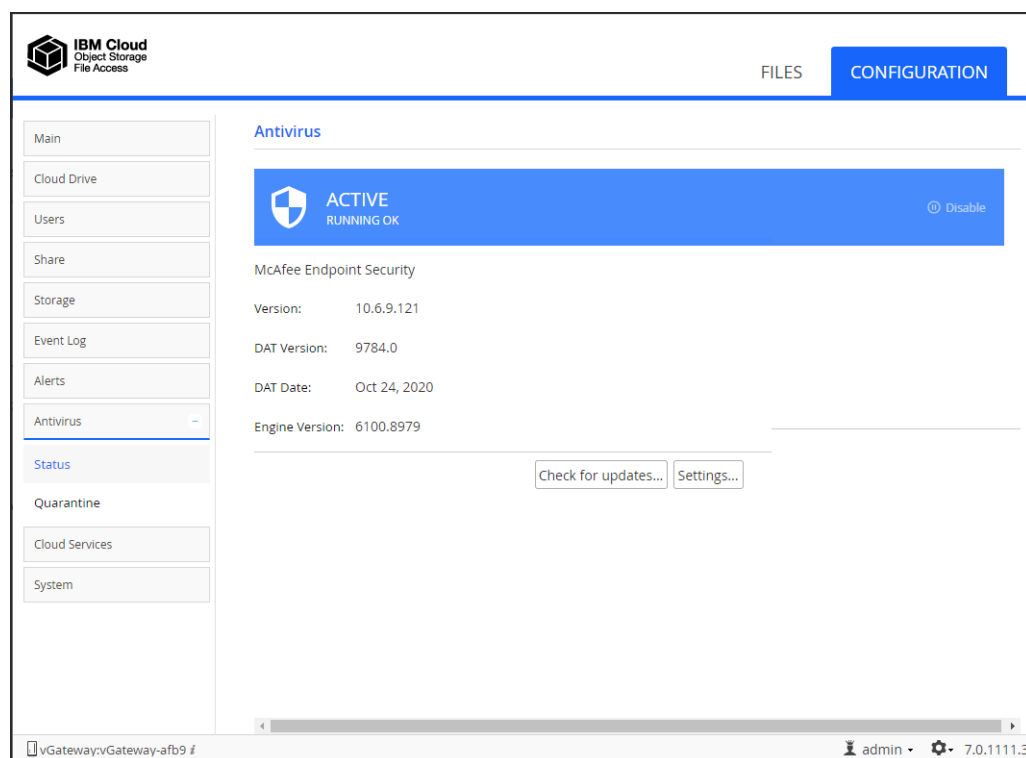
Antivirus software is constantly being updated to be able to identify the new viruses. Virus definition or DAT files contain virus signatures and other information used to protect the IBM COS FA Gateway against existing and new potential threats. Generally, DAT files are released daily.

You can schedule the IBM COS FA Gateway to check for new DAT files which are then used when scanning files for viruses. You can also manually check for updates, for example when you think a new DAT file has been released before the scheduled update is set to run.

**Note:** To check for updates to DAT files, the IBM COS FA Gateway must be able to connect to antivirus update site.

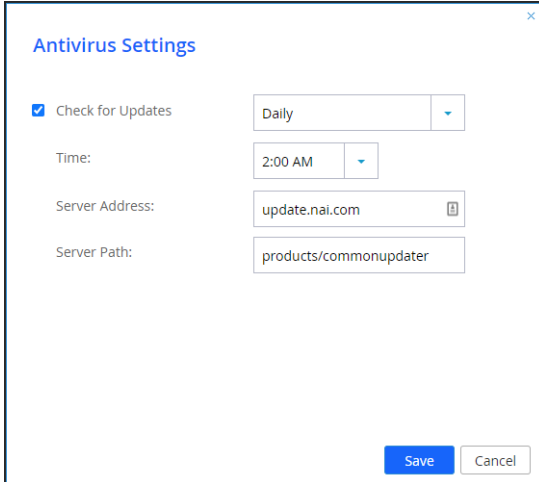
**To schedule checking for DAT updates:**

- 1 In the **CONFIGURATION** tab, select **Antivirus > Status** in the navigation pane. The **Antivirus** page is displayed.



- 2 Click **Settings**.

The **Antivirus Settings** window is displayed.

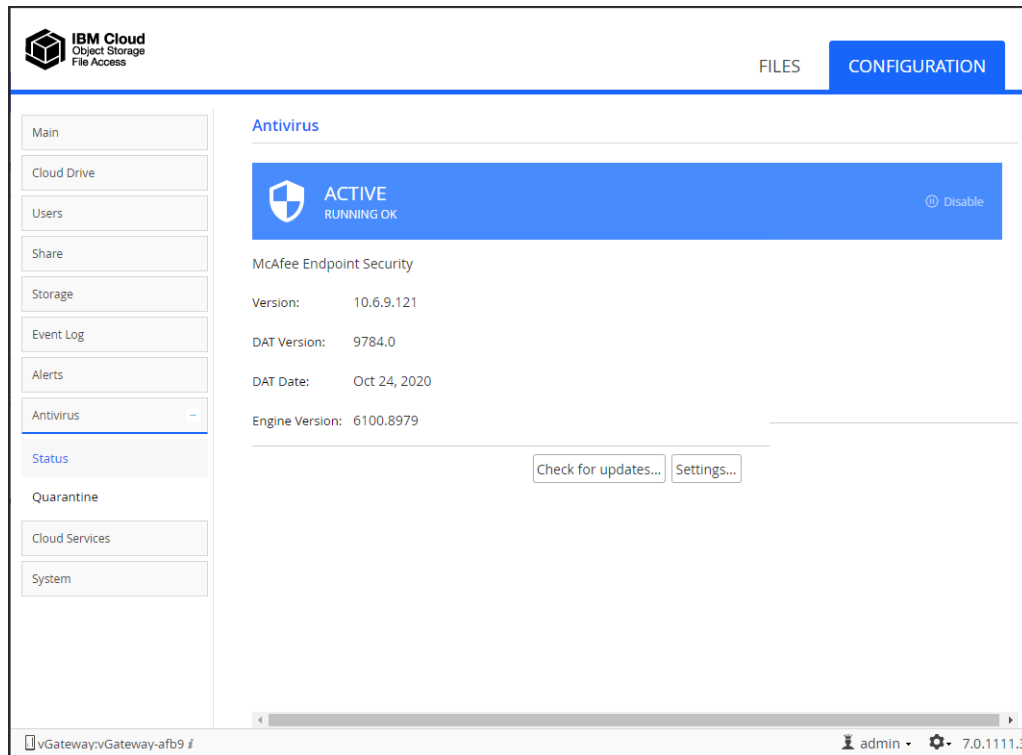
The image shows a screenshot of the 'Antivirus Settings' window. The window has a title bar with a close button (X) in the top right corner. The title 'Antivirus Settings' is in blue text at the top left. Below the title, there are four settings: 1. 'Check for Updates' is checked with a blue checkbox. To its right is a dropdown menu currently showing 'Daily'. 2. 'Time:' is followed by a dropdown menu showing '2:00 AM'. 3. 'Server Address:' is followed by a text box containing 'update.nai.com' and a small icon to its right. 4. 'Server Path:' is followed by a text box containing 'products/commonupdater'. At the bottom right of the window are two buttons: 'Save' (in blue) and 'Cancel' (in white with a grey border).

- 3 Make sure **Check for Updates** is checked and then set the update details.  
You can set the scheduler to check for new DAT files daily, weekly or monthly. IBM recommends keeping the default daily check.  
You set the scheduler to access the antivirus provider to use the latest DAT file from the relevant server, specifying the server address and path.
- 4 Click **Save**.

When the selected time The system checks for the latest DAT file to use when scanning files.

**To manually check for DAT updates:**

- 1 In the **CONFIGURATION** tab, select **Antivirus > Status** in the navigation pane. The **Antivirus** page is displayed.



- 2 Click **Check for updates**.

The system checks for the latest DAT file to use when scanning files.

## MANAGING QUARANTINED FILES

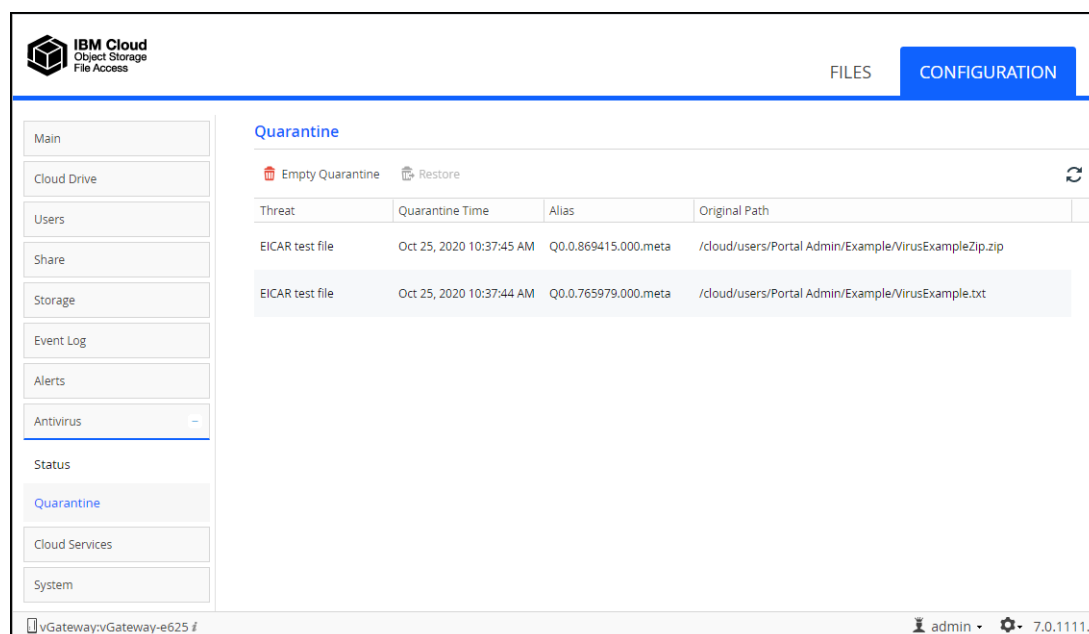
Files that have been identified as a threat to the system are placed in quarantine and removed from their source location. These files are also not synced to the IBM COS FA Portal.

An administrator is alerted when a file is quarantined. The administrator can check the list of quarantined files and either delete files permanently or restore them. Quarantined files are only displayed when antivirus has been enabled. If the signature for the file has not changed, it will immediately be added back to quarantine, but a file that an updated DAT file recognizes as not being a virus, can be restored.

**Note:** Rarely, a file that is not a virus can be

### To manage quarantined files:

- Select **Antivirus > Quarantine** in the navigation pane. The **Quarantine** page is displayed.



Each quarantined file is displayed with the following information:


**Threat** – The name of the threat.

**Quarantine Time** – The time the file was accessed and then moved to quarantine.

**Alias** – The virus alias recognized by the DAT file.


**Original Path** – The name and location of the file before it was quarantined.

### To empty the quarantine of all files:

- 1 Without selecting any of the quarantined files, click .
- 2 Click **Yes** to confirm the delete.


All the quarantined files are permanently deleted. The quarantine folder is cleaned every 30 days.

### To select one or more quarantined files to permanently delete:

- 1 Select the files to delete and click .
- 2 Click **Yes** to confirm the delete.

The quarantined files are permanently deleted.

**To restore one or more quarantined files to their original location:**

- 1 Select the files to restore and click .
- 2 Click **Yes** to confirm the restore.




The quarantined files are restored to their original location. If the signature for the file has not changed, it will immediately be added back to quarantine.

## ANTIVIRUS LOGS

---

Log entries for the antivirus are part of the system log. The system log shows whether a file is in quarantine or has been restored from quarantine.

**To view logs:**

- 1 In the **CONFIGURATION** tab, select **Event Log > Log Viewer** in the navigation pane, The **Event Log** page is displayed.
- 2 Select **System** from the **Select Topic** drop-down list:
- 3 Optionally, change the minimum severity that is displayed. Ordered from most severe to least severe:
  -  - Error
  -  - Warning
  -  - Info

The **System** log displays the following details:

**Date** - The date and time at which the event occurred.

**Details** - A description of the event

**More Info** - Additional information about the event.



## CHAPTER 8. MANAGING NETWORK SETTINGS

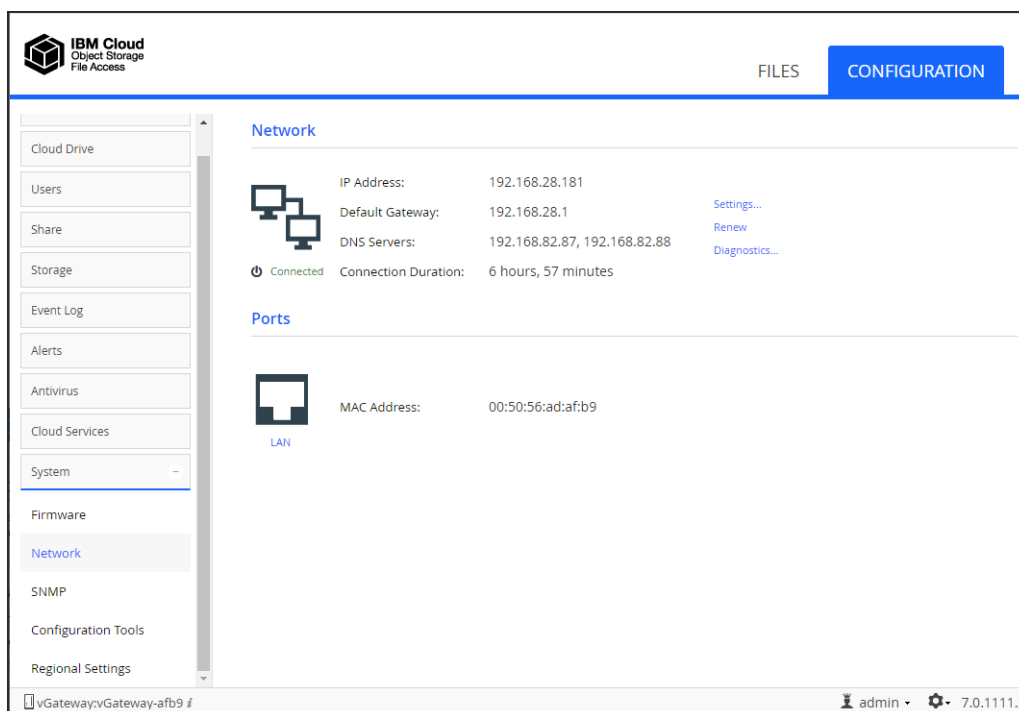
In this chapter

- [Viewing Network and Port Settings](#)
- [Configuring Network Settings](#)
- [Configuring Proxy Settings](#)
- [Configuring Ethernet Port Settings](#)
- [Renewing the DHCP Lease](#)
- [Network Diagnostics](#)
- [Remotely Awakening Computers](#)

### VIEWING NETWORK AND PORT SETTINGS

To view the IBM COS FA Gateway's network and port settings, in the **CONFIGURATION** tab select **System > Network** in the navigation pane.

The **Network** page is displayed.



The **Network** page displays the following:

- The IBM COS FA Gateway's IP address.
- The IP address of the default IBM COS FA Gateway.
- The IP addresses of the primary and secondary DNS servers.
- The status of the IBM COS FA Gateway's network connection: **Connected** or **Disconnected**.
- The amount of time that the IBM COS FA Gateway has been connected to the network.
- The current Ethernet link speed, in Mbps, and duplex.
- The MAC address of this IBM COS FA Gateway.

## CONFIGURING NETWORK SETTINGS

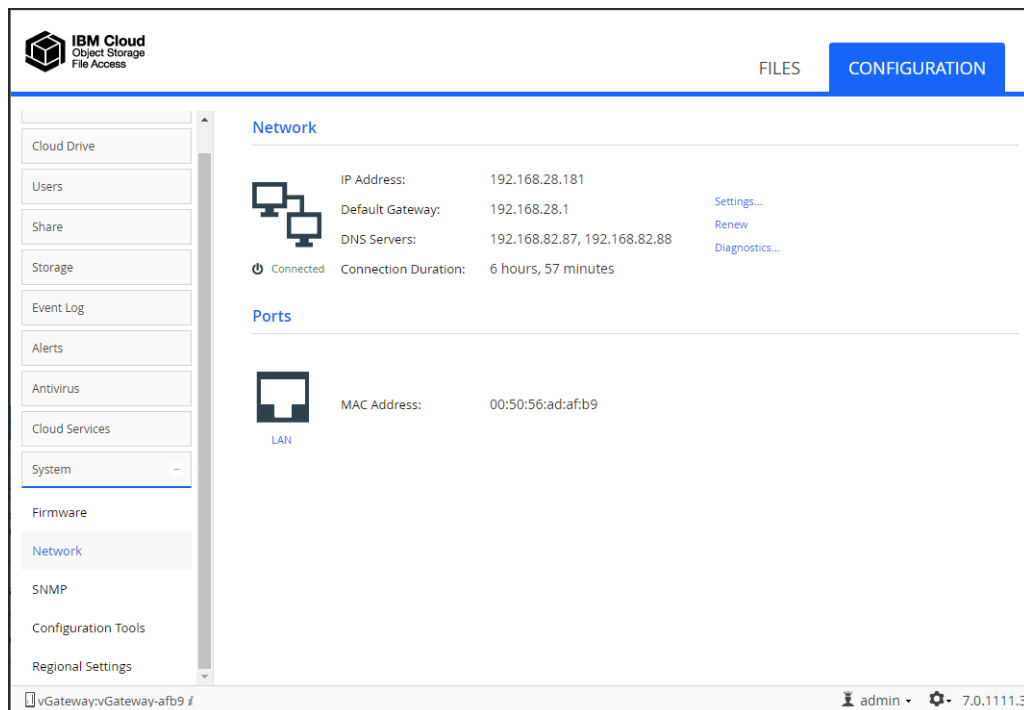
By default, the IBM COS FA Gateway is automatically assigned an IP address and DNS settings by the DHCP server. If your network uses static IP addresses instead of DHCP, you must configure the IBM COS FA Gateway's network settings.

**Note:** If a DHCP server is not available, then, after one minute, the IBM COS FA Gateway uses IP address 192.168.192.5.

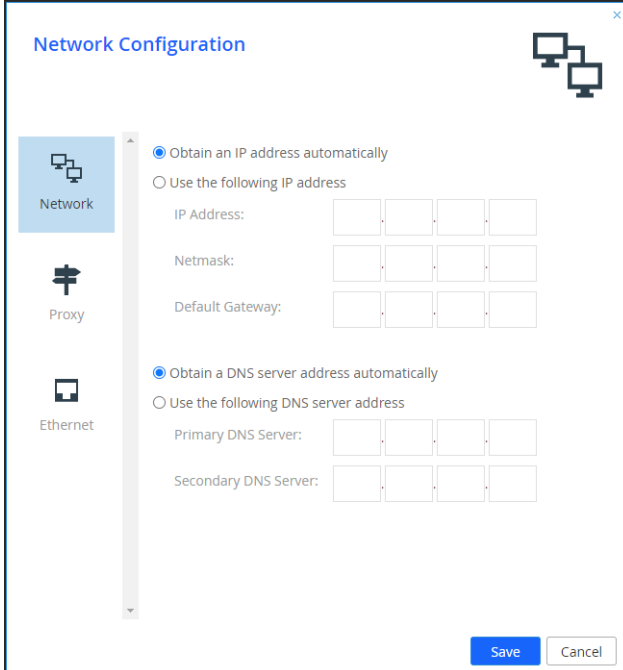
You can apply a custom DNS configuration to each IBM COS FA Gateway according to its DHCP class identifier.

**To configure network settings:**

- 1 In the **CONFIGURATION** tab, select **System > Network** in the navigation pane. The **Network** page is displayed.



- 2 Click **Settings**. The **Network Configuration** window is displayed.



The image shows a 'Network Configuration' dialog box with a sidebar on the left containing three icons: 'Network' (selected), 'Proxy', and 'Ethernet'. The main area has two sections. The first section is for IP configuration, with radio buttons for 'Obtain an IP address automatically' (selected) and 'Use the following IP address'. Below are input fields for 'IP Address', 'Netmask', and 'Default Gateway', each consisting of four small boxes. The second section is for DNS configuration, with radio buttons for 'Obtain a DNS server address automatically' (selected) and 'Use the following DNS server address'. Below are input fields for 'Primary DNS Server' and 'Secondary DNS Server', each consisting of four small boxes. At the bottom right are 'Save' and 'Cancel' buttons.

3 Configure the settings.

**Obtain an IP address automatically** – The IBM COS FA Gateway obtains an IP address automatically from the DHCP server in the network.

**Use the following IP address** – Assign the IBM COS FA Gateway a static IP address and specify the IP address, netmask, and default IBM COS FA Gateway.

**Obtain a DNS server address automatically** – The IBM COS FA Gateway obtains DNS server addresses automatically from the DHCP server in the network.

**Use the following DNS server address** – Specify DNS servers for the IBM COS FA Gateway and specify the address of the primary and secondary DNS servers.

**Note:** If you configure these settings incorrectly, you may lose network connectivity to your IBM COS FA Gateway.

4 Click **Save**.

## CONFIGURING PROXY SETTINGS

The IBM COS FA Gateway can be configured to connect to the network via a proxy server. HTTPS proxies that support the CONNECT method may be used. For details about setting proxy settings, see [Configuring Proxy Settings](#).

## CONFIGURING ETHERNET PORT SETTINGS

By default, the IBM COS FA Gateway automatically detects the Ethernet port's link speed and duplex. If desired, you can manually restrict the Ethernet port to a specific link speed and duplex.

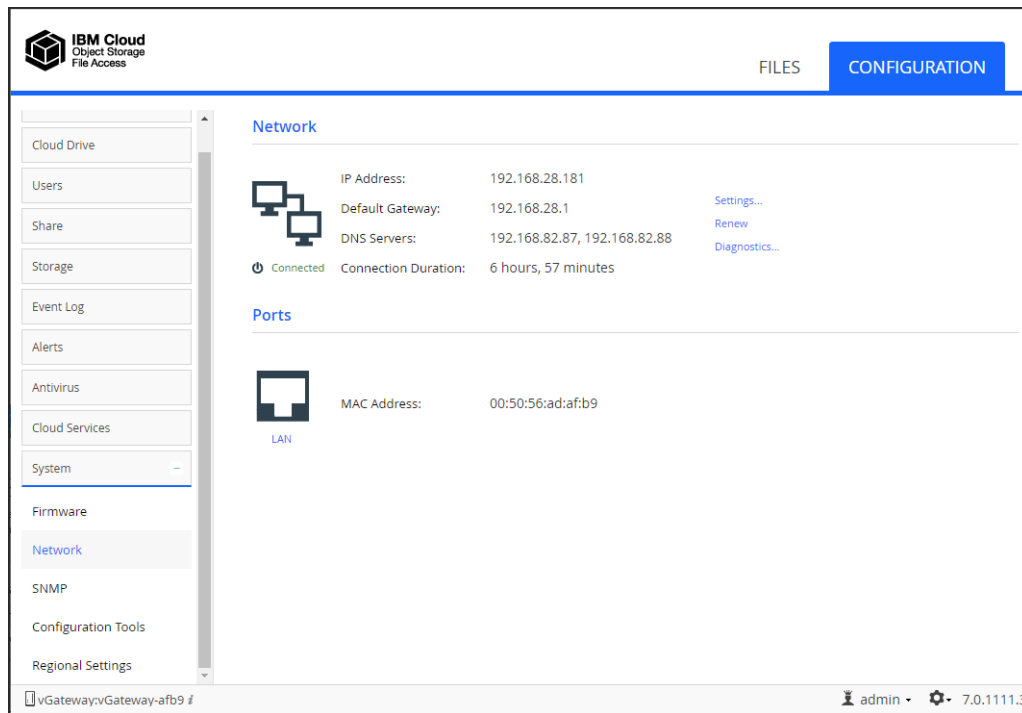
You can also configure IBM COS FA Gateway to use jumbo frames. While the standard Ethernet frame is 1500 bytes, jumbo frames are larger, with the conventional jumbo frame size being 9000 bytes.

**Warning:** If you enable jumbo frames, you must configure all computers in the IBM COS FA Gateway's network segment to use the same Ethernet frame size (maximum transmission unit, or MTU). If

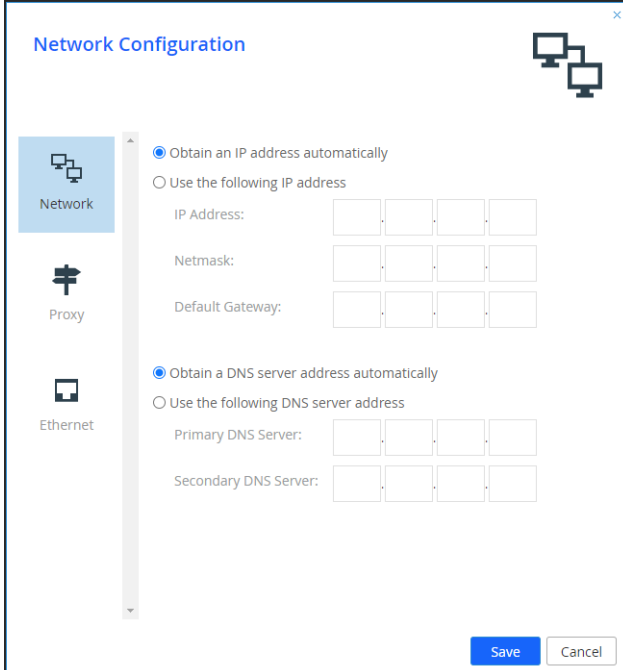
you do not set all computers to the same MTU, you may lose connectivity to the IBM COS FA Gateway.

To configure the Ethernet port settings:

- 1 In the **CONFIGURATION** tab, select **System > Network** in the navigation pane. The **Network** page is displayed.



- 2 Click **Settings**. The **Network Configuration** window is displayed.



**Network Configuration**

Network

Proxy

Ethernet

☒ Obtain an IP address automatically

☐ Use the following IP address

IP Address:

Netmask:

Default Gateway:

☒ Obtain a DNS server address automatically

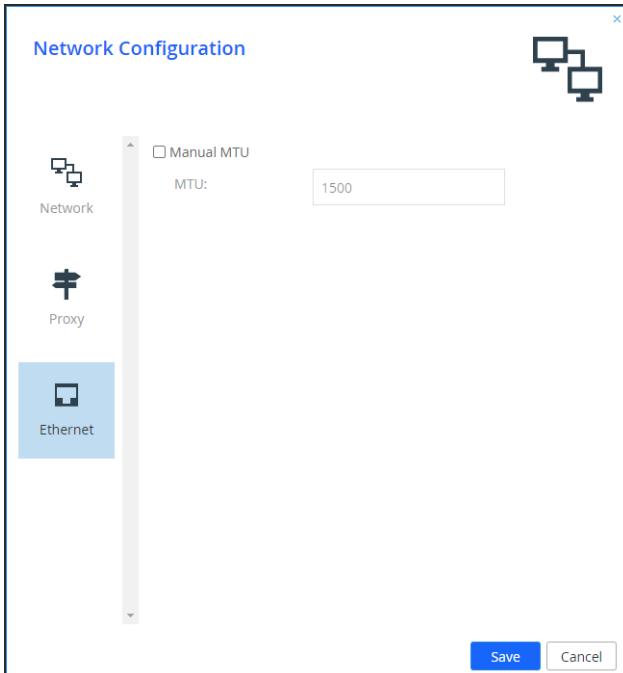
☐ Use the following DNS server address

Primary DNS Server:

Secondary DNS Server:

Save Cancel

- 3 Select the **Ethernet** option.



**Network Configuration**

Network

Proxy

Ethernet

☒ Manual MTU

MTU:

Save Cancel

- 4 Specify the Ethernet settings.  
**Manual MTU** – Manually set the maximum transmission unit (MTU), for example for jumbo frames.  
**MTU** – The maximum transmission unit in bytes. The minimum MTU for jumbo frames is 1500.
- 5 Click **Save**.

## RENEWING THE DHCP LEASE

The DHCP lease is renewed automatically as needed. However, you can manually renew the DHCP lease, if necessary.

**To manually renew the DHCP lease:**

- 1 In the **CONFIGURATION** tab, select **System > Network** in the navigation pane. The **Network** page is displayed.

- 2 Click **Renew**.

## NETWORK DIAGNOSTICS

The IBM COS FA Gateway provides diagnostic tools directly through the user interface for network troubleshooting:

**ping** – Tests the reachability of a host on the network.

**DNS lookup** – Queries the DNS.

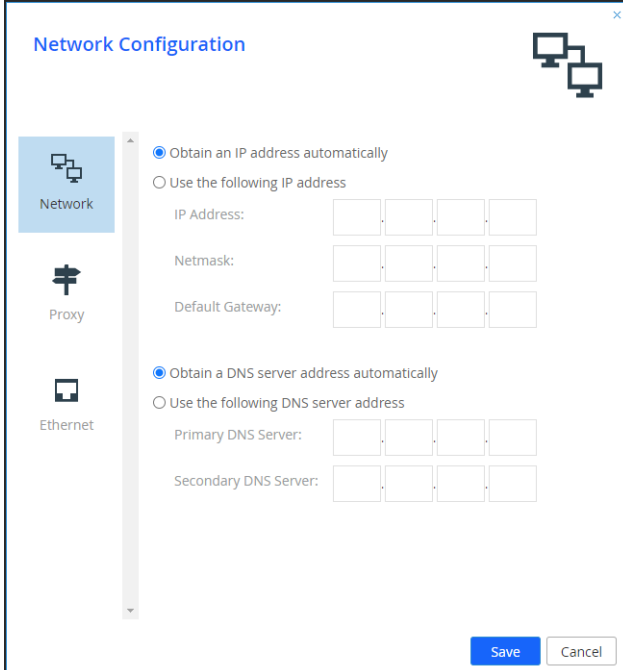
**tracert** – Displays the route packets across the network.

**TCP Connect** – Tests whether a specific TCP port is open.

**Wake** – Remotely awakens computers using the WoL (Wake on LAN) command.

**To use network diagnostics:**

- 1 In the **CONFIGURATION** tab, select **System > Network** in the navigation pane. The **Network** page is displayed.



**Network Configuration**

Network

Proxy

Ethernet

☒ Obtain an IP address automatically  
☐ Use the following IP address

IP Address:

Netmask:

Default Gateway:

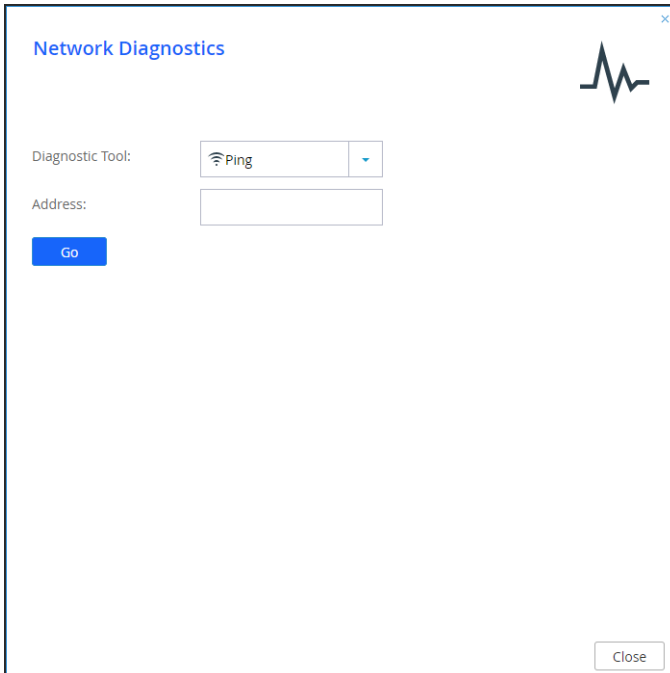
☒ Obtain a DNS server address automatically  
☐ Use the following DNS server address

Primary DNS Server:

Secondary DNS Server:

Save Cancel

- 2 Click **Diagnostics**.  
The **Network Diagnostics** window is displayed.



**Network Diagnostics**

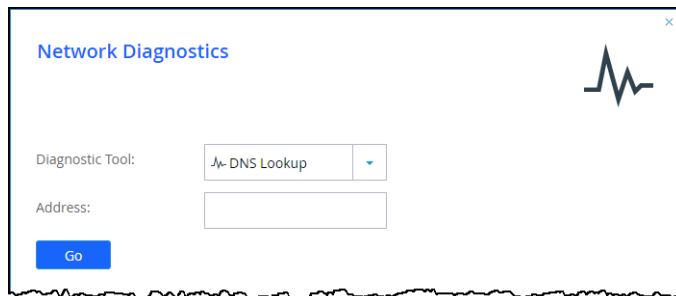
Diagnostic Tool:

Address:

Go

Close

- 3 In the **Diagnostic Tool** field, select the tool you want to use.  
The window changes to reflect the diagnostic test requested.  
**Ping** – Tests the reachability of a host on the network.  
**DNS Lookup** – Queries the DNS.

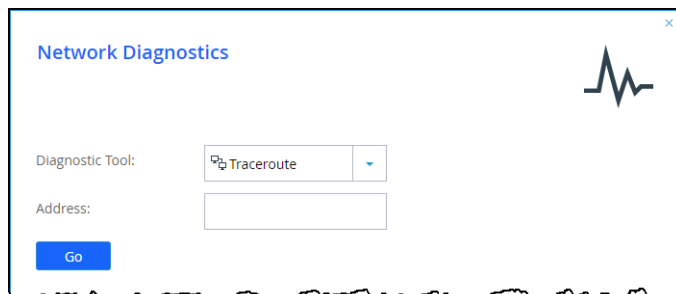


**Network Diagnostics**

Diagnostic Tool: DNS Lookup

Address:

**Traceroute** – Displays the route packets across the network.

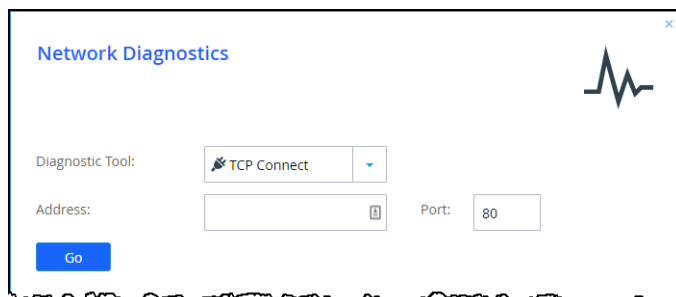


**Network Diagnostics**

Diagnostic Tool: Traceroute

Address:

**TCP Connect** – Tests whether a specific TCP port is open.

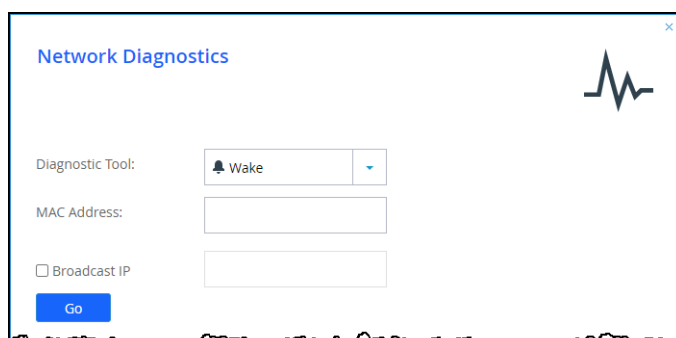


**Network Diagnostics**

Diagnostic Tool: TCP Connect

Address:  Port:

**Wake** – Remotely awakens computers using the WoL (Wake on LAN) command based on the MAC address of the computer. For more details, see [Remotely Awakening Computers](#).



**Network Diagnostics**

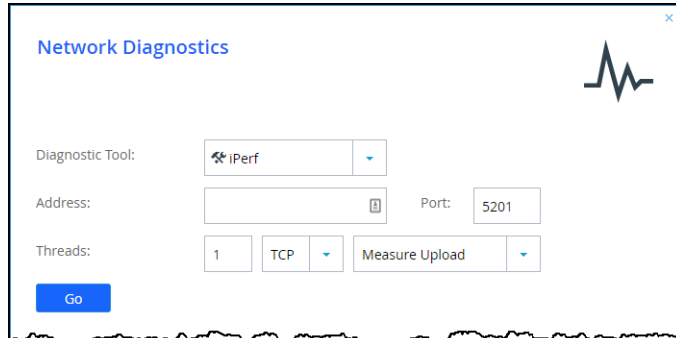
Diagnostic Tool: Wake

MAC Address:

☐ Broadcast IP



**iPerf** – Measures the maximum achievable upload and download bandwidths using either TCP or UDP.



The screenshot shows a window titled "Network Diagnostics" with a close button (X) in the top right corner. Inside the window, there is a "Diagnostic Tool:" dropdown menu set to "iPerf". Below it, the "Address:" field is empty with a copy icon, and the "Port:" field is set to "5201". The "Threads:" field is set to "1". There are two dropdown menus for "TCP" and "Measure Upload". A blue "Go" button is at the bottom left.

where:

**Address** – The address of the computer to measure.

**Port** – The port to measure.

**Threads** – The number of threads to test the connection.

**TCP or UDP** – The protocol to measure.

**Measure Upload or Measure Download** – The direction to measure.

The following command is run: `iperf -c {Address} -fM -m -i5 -t25 -p {Port}`

if the number of threads is changed from the default, 1, the command is run with the `-P` flag with the thread number. For example, `iperf -c {Address} -fM -m -i5 -t25 -p {Port} -P 10`

if UDP is specified, the command is run with the `-u` flag. For example:

`iperf -c {Address} -fM -m -i5 -t25 -p {Port} -u`

- 4 Enter the information required for the test, such as the IP address you want to ping.
- 5 Click **Go**.  
The test results appear in the **Network Diagnostics** window.
- 6 Click **Close** when you have completed the diagnostic tests.

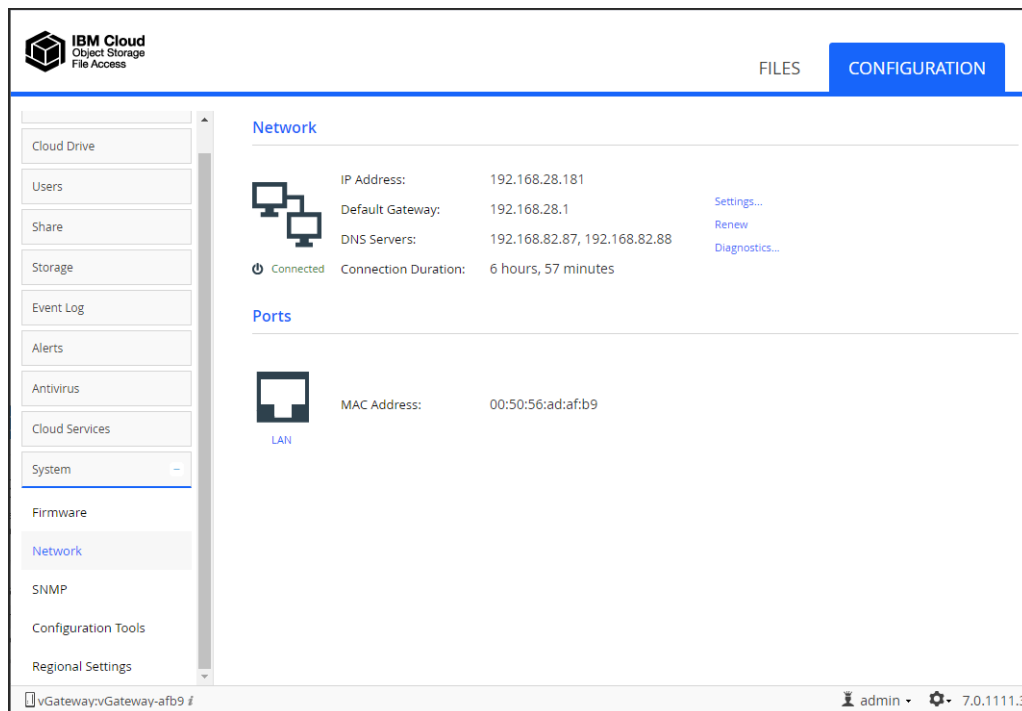
## REMOTELY AWAKENING COMPUTERS

Administrators can remotely turn on or awaken computers in the branch via the IBM COS FA Gateway using the WoL (Wake on LAN) command. This is useful, for example, when there is a need to release a software update.

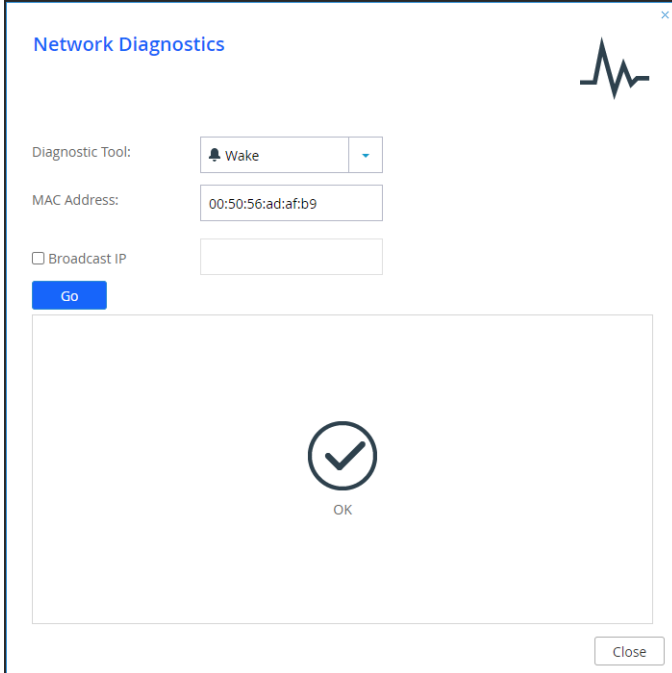
The command wakes up a single device.

### To wake up a device:

- 1 In the **CONFIGURATION** tab, select **System > Network** in the navigation pane. The **Network** page is displayed.



- 2 Click **Diagnostics**.  
The **Network Diagnostics** window is displayed.
- 3 In the **Network Diagnostics** window, select **Wake** as the diagnostic tool.
- 4 Enter the device's MAC address.
- 5 Optionally, check **Broadcast IP** and enter an broadcast address for the broadcast.
- 6 Click **Go**.
- 7 An **OK** message is displayed when the device is awakened.




**Network Diagnostics**

Diagnostic Tool: Wake

MAC Address: 00:50:56:ad:af:b9

☐ Broadcast IP

Go

  
OK

Close

- 8 Click **Close**.

## CHAPTER 9. MONITORING IBM COS FA GATEWAY LOGS

This chapter describes how to cleanly restart or shutdown the IBM COS FA Gateway and the available monitoring and logging options:

- Status dashboard. [Viewing the Status Dashboard](#).
- Viewing hard disk drive information. See [Viewing Hard Disk Drive Information](#).
- Monitoring IBM COS FA Gateway activity. See [Viewing the Activity Monitor](#).
- SNMP monitoring. See [Using SNMP Monitoring](#).
- IBM COS FA Gateway logs. See [Configuring Logging](#) and [Viewing Logs](#).
- Auditing file access. See [Auditing File Access](#).
- Email alerts. See [Configuring Email Alerts](#).
- Troubleshooting. See [Generating a Support Report](#).

### VIEWING THE STATUS DASHBOARD

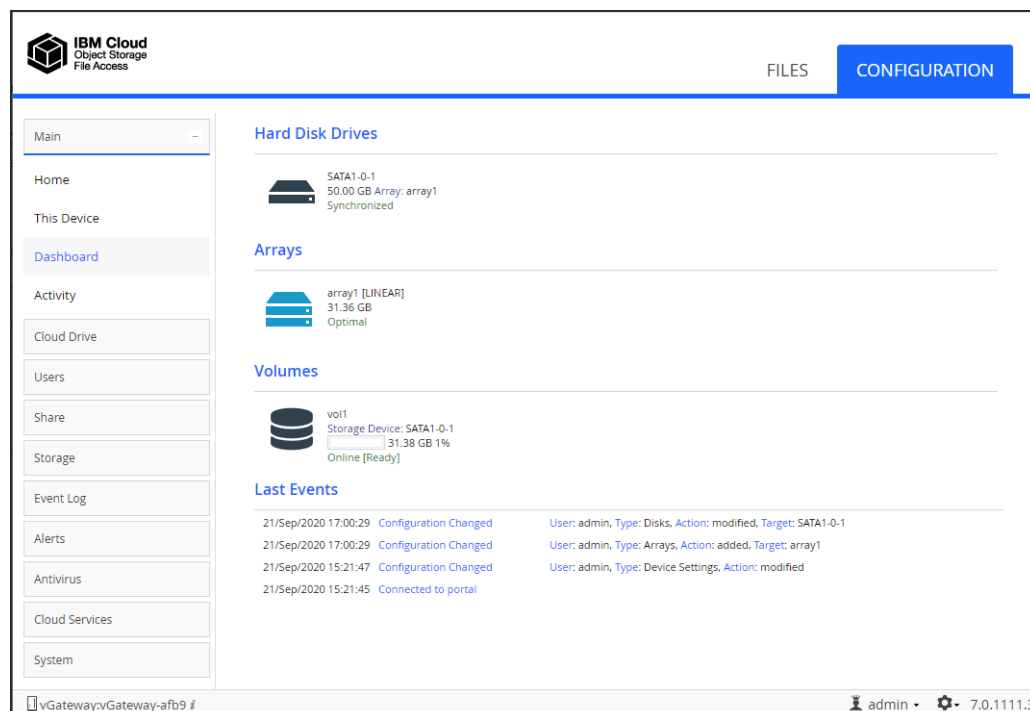
The IBM COS FA Gateway dashboard provides an overview of the IBM COS FA Gateway's current status, including the following:

- Disk drive and volume information
- Resource utilization information
- Recent logged events

In addition, it provides shortcuts to configuring arrays, drives, and volumes.

**To view the Status Dashboard:**

- In the **CONFIGURATION** tab, select **Main > Dashboard** in the navigation pane,



The dashboard displays the following information:

**Hard Disk Drives** – All disk drives installed on the IBM COS FA Gateway. For each drive:

- The disk type. Click this link to view additional information about the drive.
- The disk size.
- The array to which the disk is assigned.
- The disk status:
  - Synchronized** – This drive is in an array and is in optimal condition.
  - OK** – The drive is not in an array and is in optimal condition.
  - FAIL** – The drive has failed.
  - Unrecognized** – The drive contains unrecognized data. You must format the drive before it can be used.
  - Inactive** – This drive is in an array, but is currently not in use.
  - Rebuilding** – This drive is in an array that is currently being rebuilt.
  - In Use** – The drive is currently in use.

**Arrays** – All arrays defined on the IBM COS FA Gateway. For each array:

- The array name. You can click this link to edit the array.
- The array size in GB.
- The array status:
  - Optimal** – The array is in optimal condition.
  - Degraded** – The array is accessible and there is no data loss; however, a disk failed or missing. Performance and reliability may be reduced. Replace the failed drive as soon as possible.
  - Fail** – The array is not accessible.
  - Recovering** – A degraded array is being repaired. The IBM COS FA Gateway is currently synchronizing out-of-sync members of the array, and performance of the IBM COS FA Gateway may be reduced. Once the recovery is finished, the array will return to optimal state.

**Volumes** – All volumes defined on the IBM COS FA Gateway. For each volume:

- The volume name.
- The storage device on which the volume is located. Click on this link to edit the volume. See [Creating and Editing Volumes](#) for further details.)
- The volume's status in the format: Mode [Status]. The mode can be **Online** or **Offline**. The status can be:
  - Key required** – Volume encryption. For details about activating this feature, contact IBM.
  - Contains errors** – The file system needs to be repaired.
  - Read only** – The file system is incompatible with current firmware.
  - Corrupted** – Failed to read the file system status.
  - Unknown** – No file system was found in the volume.
  - Ready** – The volume is ready for use.
  - Recovering** – The file system is being recovered after a non-clean shutdown.
  - Mounting** – Routine cleanup is being performed after a non-clean shutdown.
  - Formatting** – The volume is being formatted.
  - Resizing** – The volume is being resized.
  - Repairing** – The volume is being repaired.
  - Checking** – The volume is being scanned for errors.
  - Checking Quota** – The volume's storage quotas are being recalculated.
- A bar representing of the percentage of the volume currently in use, followed by the volume size, followed by the percentage of the volume currently in use.

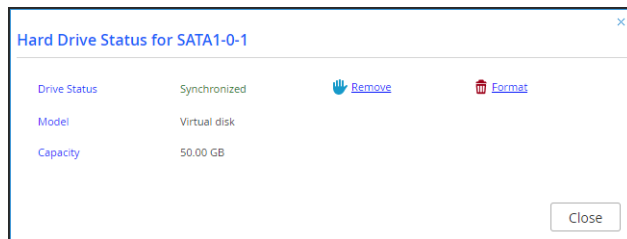
**Last Events** – The last five important events in the IBM COS FA Gateway Event Log. For information on log fields, see [Viewing Logs](#).

**Note:** The data is refreshed automatically every few seconds.

## VIEWING HARD DISK DRIVE INFORMATION

To view hard disk information:

- 1 In the **CONFIGURATION** tab, select **Main > Dashboard** in the navigation pane.
- 2 In the **Hard Disk Drives** area, click the drive to investigate.  
The **Hard Drive Status** window is displayed for the selected drive.



The window's **Summary** tab displays the following information:

**Drive Status** – The disk drive's current status.

**Disk Health** – The disk's health status. If the disk is healthy, this entry is not displayed.

**Model** – **Virtual disk** is displayed.

**Capacity** – The disk drive's capacity.

**Warning:** Formatting erases all data on the drive.

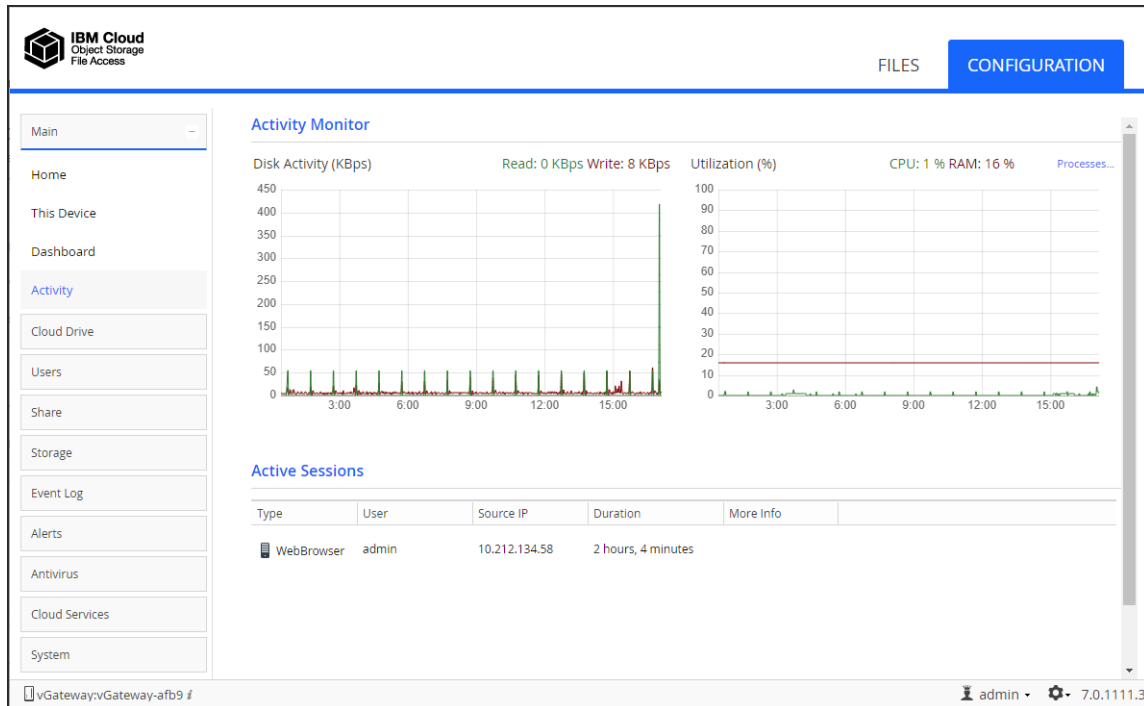
- 3 Click **Close** when you're done.

## VIEWING THE ACTIVITY MONITOR

The Activity Monitor provides an overview of the IBM COS FA Gateway's recent activity, including:

- The disk read rate in KBps (kilobytes per second)
- The disk write rate in KBps (kilobytes per second)
- The percentage of CPU in use
- The percentage of memory in use
- A list of active user sessions
- Details about the top twenty processes running on the appliance

To view the Activity Monitor, in the **CONFIGURATION** tab, select **Main > Activity** in the navigation pane.



Under **Active Sessions**, the following information is displayed:

**Type** – The session type:

- **SMB** (Windows File Sharing)
- **Web Browser**

**User** – The user connected to the IBM COS FA Gateway.

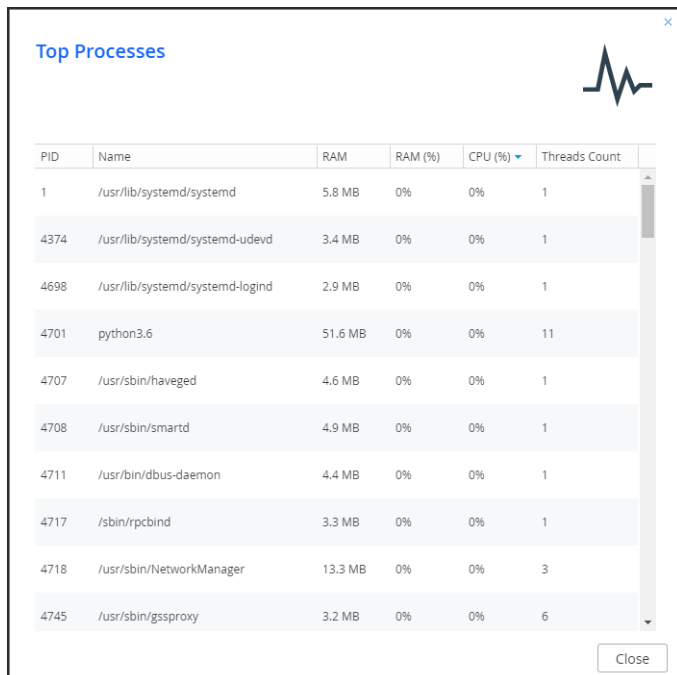
**Source IP** – The IP address from which the user connected to the IBM COS FA Gateway.

**Duration** – The amount of time that the user has been connected to the IBM COS FA Gateway.

**More Info** – Additional information about the session.

**Note:** The data is refreshed automatically every few seconds.

Click **Processes...** to access the **Top Processes** window. Top Processes provides information about the top twenty processes currently running on the IBM COS FA Gateway; data about the processes, and statistics about memory and processor performance.



**Top Processes**

PID	Name	RAM	RAM (%)	CPU (%)	Threads Count
1	/usr/lib/systemd/systemd	5.8 MB	0%	0%	1
4374	/usr/lib/systemd/systemd-udev	3.4 MB	0%	0%	1
4698	/usr/lib/systemd/systemd-logind	2.9 MB	0%	0%	1
4701	python3.6	51.6 MB	0%	0%	11
4707	/usr/sbin/haveged	4.6 MB	0%	0%	1
4708	/usr/sbin/smartd	4.9 MB	0%	0%	1
4711	/usr/bin/dbus-daemon	4.4 MB	0%	0%	1
4717	/sbin/rpcbind	3.3 MB	0%	0%	1
4718	/usr/sbin/NetworkManager	13.3 MB	0%	0%	3
4745	/usr/sbin/gssproxy	3.2 MB	0%	0%	6

Close

Where:

**PID** – The process identifier.

**Name** – The process name.

**RAM** – The percentage of the RAM used by this process.

**CPU** – The percentage of CPU used by this process.

**Threads Count** – The number of threads spawned by the process.

## USING SNMP MONITORING

You can configure the IBM COS FA Gateway for monitoring using SNMP. This enables you to gather a wide range of information about your devices.

SNMP can be used with all IBM COS FA Gateways. SNMP v1, v2c, and v3 are supported. SNMPv3 security level is set to *Authentication and Privacy* with SHA + AES algorithms.

IBM COS FA Gateway includes Net-SNMP. For details, refer to <http://www.net-snmp.org>.

Information is collected for the following MIBs:

- **MIB-II (IF-MIB):** Basic description of the monitored system, such as the system name, uptime, and network interfaces. For details of this MIB, refer to <http://www.net-snmp.org/docs/mibs/interfaces.html> and <http://www.net-snmp.org/docs/mibs/ifMIBObjects.html>.
- **HOST-RESOURCES-MIB:** Computer management information, hardware and software configuration, such as information regarding system initialization, processes, storage, memory, processors, and devices. For details of this MIB, refer to <http://www.net-snmp.org/docs/mibs/host.html>.
- **UCD-SNMP-MIB:** System performance data, such as system statistics and performance. For details of this MIB, refer to <http://www.net-snmp.org/docs/mibs/ucdavis.html>.



The MIBs are stored on the SNMP server on the IBM COS FA Gateway. You can monitor the IBM COS FA Gateway MIBs using a management tool, such as the tool from <https://www.paessler.com/>.

### Setting Up SNMP Monitoring on the IBM COS FA Gateway

To set up SNMP monitoring:

- 1 In the **CONFIGURATION** tab, select **System > SNMP** in the navigation pane. The SNMP configuration page is displayed.

The screenshot shows the IBM Cloud Object Storage File Access Configuration page. The left navigation pane includes options like Main, Cloud Drive, Users, Share, Storage, Event Log, Alerts, Antivirus, Cloud Services, System (selected), Firmware, Network, and Configuration Tools. The main content area is titled 'SNMP' and contains the following settings:

- ☐ **SNMP Enabled**
  - SNMP Port: 161
  - SNMP Engine ID: (empty field)
  - Read Community: (empty field)
- ☐ **Enable SNMPV3**
  - Username: (empty field)
  - Privacy Password: (empty field)

At the bottom of the configuration area are 'Save' and 'Revert' buttons. The status bar at the bottom shows 'vGateway:vGateway-afb9 #', 'admin', and version '7.0.1111.3'.

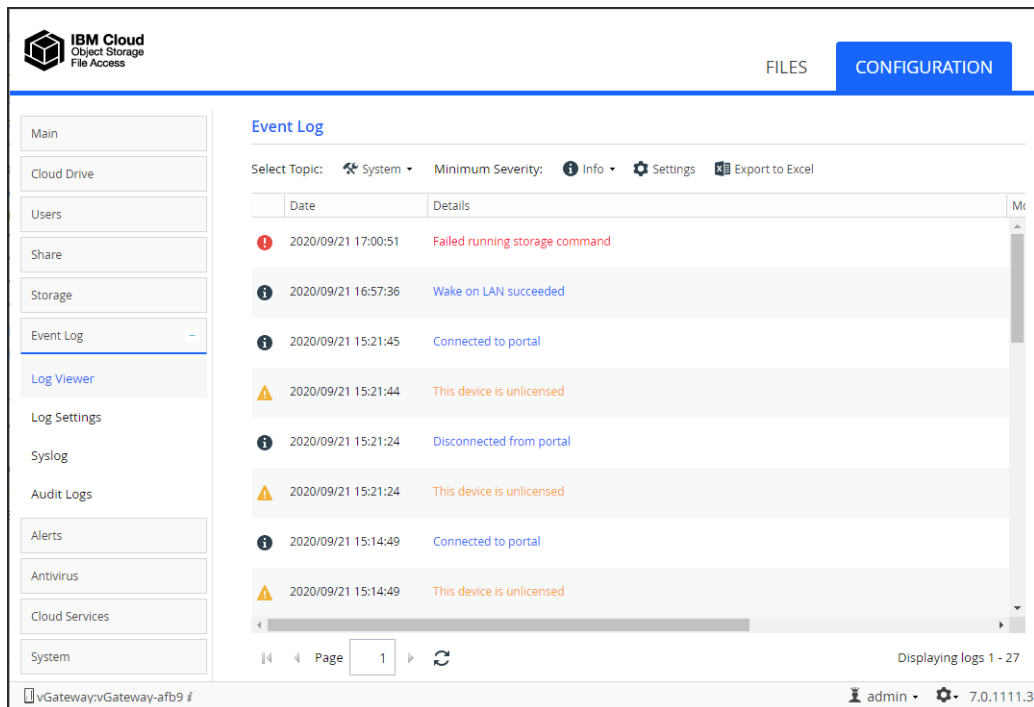
- 2 Check the **SNMP Enabled** check box to activate SNMP, and then configure the following settings:
  - SNMP Port** – The default is TCP 161.
  - Read Community** – Configure as Read-Only. The SNMP Read-Only Community String is like a password. It is sent along with each SNMP Get-Request and allows or denies access to device.
  - Note:** **SNMP Engine ID** is defined automatically based on the MAC address and cannot be changed.

If you are using SNMP v3, check the **Enable SNMPV3** check box, and then enter a user name and password.
- 3 Click **Save** to save the settings and activate SNMP monitoring.

## CONFIGURING LOGGING

The IBM COS FA Gateway contains an event log that displays the different actions on the IBM COS FA Gateway. You can specify the location of the event log on the IBM COS FA Gateway. You can also configure log settings, such as which types of logs to display in the user interface.

To view event logs, in the **CONFIGURATION** tab, select **Event Log > Log Viewer** in the navigation pane. The **Event Log** page is displayed:



You can also configure the IBM COS FA Gateway to send logs to a syslog server. While the IBM COS FA Gateway event log is limited by the amount of available storage space, a syslog server can store an unlimited number of logs.

**Note:** Free syslog servers are available, such as Kiwi Syslog Daemon: <http://www.kiwisyslog.com/>.

### Configuring Event Log Settings

- 1 Either,
  - In the **CONFIGURATION** tab, select **Event Log > Log Settings** in the navigation pane.
  - Or,
  - In the **CONFIGURATION** tab, select **Event Log > Log Viewer** in the navigation pane and click **Settings**.
 The **Log Settings** page is displayed.

The screenshot shows the IBM Cloud Object Storage File Access Configuration page. The left sidebar contains a navigation menu with options: Main, Cloud Drive, Users, Share, Storage, Event Log (highlighted), Log Viewer, Log Settings (highlighted), Syslog, Audit Logs, Alerts, Antivirus, Cloud Services, and System. The main content area is titled 'Log Settings' and contains three configuration fields: 'Keep logs for:' set to 10 days, 'Store logs in:' set to Automatic, and 'Log Level:' set to Info. Below these fields are 'Save' and 'Revert' buttons. The top right of the page has tabs for 'FILES' and 'CONFIGURATION' (selected). The bottom status bar shows 'vGateway:vGateway-afb9 #', a user dropdown set to 'admin', a gear icon, and the version '7.0.1111.3'.

- 2 Configuring the settings as required:
  - Keep logs for** – The number of days that the IBM COS FA Gateway stores logs.
  - Store logs in** – The volume where the IBM COS FA Gateway stores logs. If you choose **Memory**, the logs are deleted each time you reboot the IBM COS FA Gateway.
  - Log Level** – The minimum log level to display in the IBM COS FA Gateway user interface. For example, if you select **Critical**, then only **Critical**, **Alert**, and **Emergency** logs are displayed in the IBM COS FA Gateway user interface. The logs are filtered accordingly.
- 3 Click **Save**.

## Configuring Syslog Logging

To configure syslog logging:

- 1 In the **CONFIGURATION** tab, select **Event Log > Syslog** in the navigation pane, The **Syslog** page is displayed.

The screenshot shows the IBM Cloud Object Storage File Access Configuration interface. The top navigation bar includes 'FILES' and 'CONFIGURATION' tabs. The left sidebar contains a navigation menu with options: Main, Cloud Drive, Users, Share, Storage, Event Log (highlighted), Log Viewer, Log Settings, Syslog (highlighted), Audit Logs, Alerts, Antivirus, Cloud Services, and System. The main content area is titled 'Syslog' and contains the following configuration options:

- ☐ Use Syslog
- Minimum Event Severity: Info (dropdown menu)
- Server Address: (text input field)
- Syslog Port: 514 (text input field)
- Protocol Type: UDP (dropdown menu)

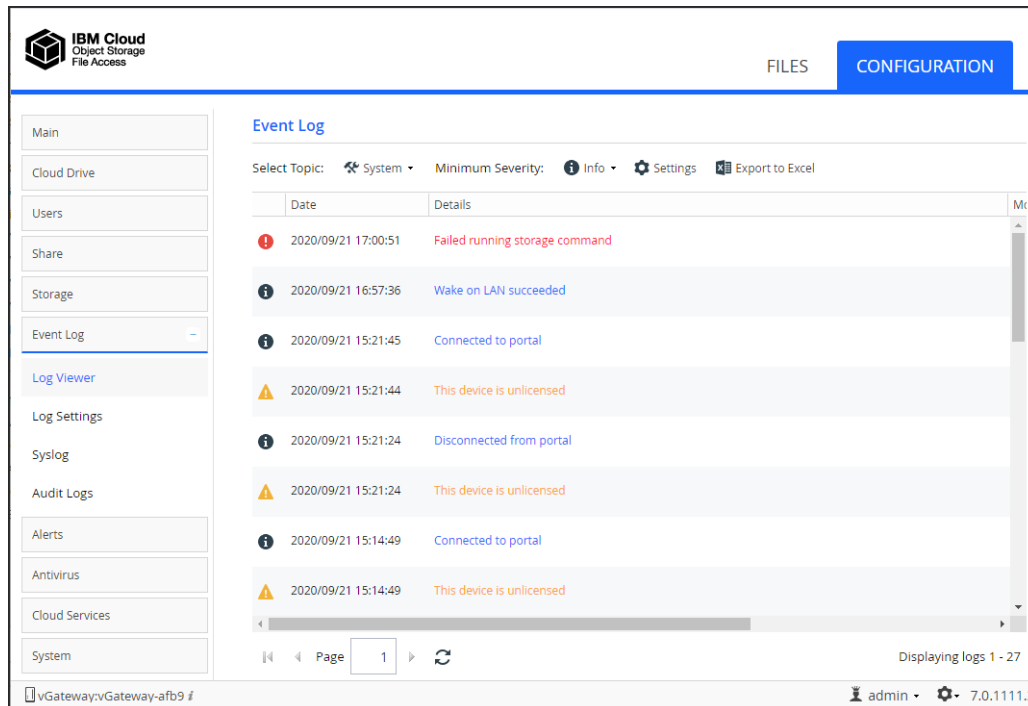
At the bottom of the configuration area are 'Save' and 'Revert' buttons. The footer of the interface shows the user 'admin' and the version '7.0.1111.3'.

- 2 Select the **Use Syslog** option to enable syslog logging.
- 3 Configure the syslog:
  - Minimum Event Severity** – The minimum event level to send to the Syslog server. For example, if you select **Critical**, then only **Critical**, **Alert**, and **Emergency** log entries are sent to the syslog server.
  - Server Address** – The syslog server's IP address.
  - Syslog Port** – The syslog server's port number. The default port is 514.
  - Protocol Type** – The protocol to use for sending logs to the syslog server: TCP or UDP.
- 4 Click **Save**.

## VIEWING LOGS

To view logs:

- 1 In the **CONFIGURATION** tab, select **Event Log > Log Viewer** in the navigation pane, The **Event Log** page is displayed.



- 2 Select the category you want to view from the **Select Topic** drop-down list:  
**System** – General IBM COS FA Gateway events, including starting up, connecting to the network and the IBM COS FA Portal, disconnecting from the network and the IBM COS FA Portal, and so on.  
**Cloud Sync** – Events related to cloud drive synchronization operations.  
**Access** – Events related to user access to the IBM COS FA Gateway.  
**Audit** – Changes to the IBM COS FA Gateway configuration.
- 3 Optionally, change the minimum severity that is displayed. Ordered from most severe to least severe:

- Error
- Warning
- Info

### System Logs

The **System** log displays the following details:

- Date** – The date and time at which the event occurred.
- Details** – A description of the event
- More Info** – Additional information about the event.

## Cloud Sync Logs

The **Cloud Sync** log displays the following details:

- Operation** – The synchronization operation performed.
- Direction** – The direction of the synchronization operation.
- File Name** – The name of the file transferred during the synchronization operation.
- Folder Name** – The name of the folder that contains the file.
- Path** – The path to the file transferred during the synchronization operation.
- Start Time** – The date and time at which the synchronization operation started.
- Duration** – The amount of time the synchronization operation took.
- Size** – The size of the synchronized file.
- Transferred Size** – The actual amount of data transferred.
- Dedup** – The deduplication ratio for the file transferred during the synchronization operation.
- Result** – The result of the synchronization operation.
- More Info** – Additional information about the event.

## Access Logs


The **Access** log displays the following details:


- Date** – The date and time at which the event occurred.
- User** – The user who triggered the event.
- Protocol** – The protocol used when triggering the event:
  - GUI
  - SMB (Windows File Sharing)
  - NFS
  - WebDAV
- Details** – A description of the event.
- Client IP** – The IP address from which the user triggered the event.
- More Info** – Additional information about the event.


## Audit Logs

The **Audit** log displays the following details regarding the IBM COS FA Gateway:

**Action** – The action type, such as:

**Added** () – An object was added to the IBM COS FA Gateway user interface.

**Deleted** () – An object was deleted from the IBM COS FA Gateway user interface.

**Modified** () – An object was modified.

**Formatted** () – A disk was formatted.

**Date** – The date and time at which the event occurred.

**User** – The user who performed the action.

**Type** – The type of setting that was affected by the action. For example, if user JohnS was deleted, this column displays *Users*.

**Target** – The object that was affected by the action. For example, if user JohnS was deleted, this column displays *JohnS*.

**More Info** – Additional information about the event.

### Filtering Logs

In any log category, you can filter the logs so that only those with a specific minimum log level are displayed.

**Note:** For information on configuring the default minimum log level to display in *all* log pages, see [Configuring Event Log Settings](#).

**To filter logs:**

- 1 View the log category.
- 2 Click **Minimum Severity** and select from the list the minimum log level to display in this category. For example, if you select **Critical**, then only **Critical**, **Alert**, and **Emergency** logs are displayed. The logs are filtered accordingly.

### Exporting Logs

You can export logs or log details for a specific event in any category to a Comma-Separated Values (CSV) file on your computer. You can then view the file as a worksheet in Microsoft Excel.

**To export logs in a log category:**

- 1 In the **CONFIGURATION** tab, select **Event Log > Log Viewer** in the navigation pane, The **Event Log** page is displayed.
- 1 Select the log topic.
- 2 Click **Export to Excel**.

## AUDITING FILE ACCESS

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For details about activating this feature, contact IBM.

## CONFIGURING EMAIL ALERTS

You can configure the IBM COS FA Gateway to send alerts upon important events. The alerts can be sent to up to two email addresses.

To configure the IBM COS FA Gateway to send email alerts, configure mail server settings and email alert settings.

- 1 In the **CONFIGURATION** tab, select **Alerts > Mail Server** in the navigation pane. The **Messaging** page is displayed.

- 2 Configure the settings according to your requirements:
  - Deliver email using a custom SMTP server** – Enable email alerts.
  - SMTP Server** – The SMTP server's IP address.
  - SMTP Port** – The SMTP server's port number. The default is 25.
  - Server requires authentication** – The SMTP server requires authentication.
  - Username** – The user name when authenticating to the SMTP server.
  - Password** – The password for the user.
  - Enable TLS** – Use Transport Layer Security (TLS) encryption for sending email messages from the IBM COS FA Gateway.
- 3 Click **Save**.
- 4 In the **CONFIGURATION** tab, select **Alerts > Email Alerts** in the navigation pane. The **Email Alerts** page is displayed.



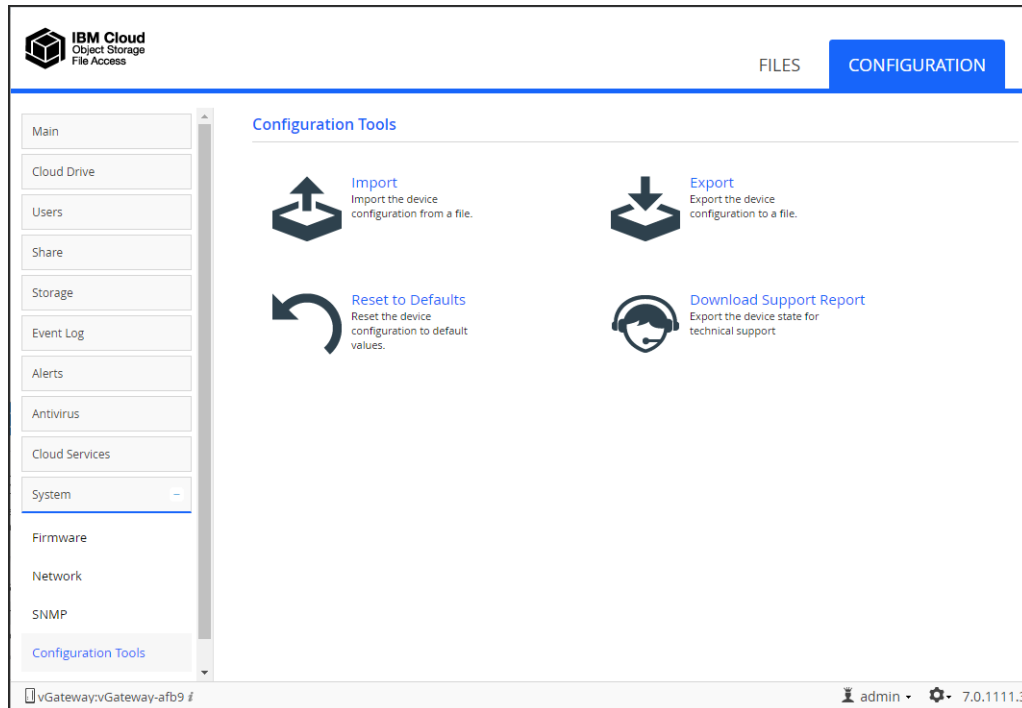
- 5 Configure the settings according to your requirements:
  - Email Recipient 1** – An email address to which email alerts are sent.
  - Email Recipient 2** – A second email address to which email alerts are sent.
  - Sender Email** – The email address for the **From** field of email alerts.
  - Log message of severity** – The minimum event severity level for which to send email alerts. For example, if you select **Critical**, then only **Critical**, **Alert**, and **Emergency** logs are sent to the email recipients.
  - Select each type of alert event for which you want emails to be sent:
    - No cloud connectivity** – When there is no cloud connectivity for more than the specified number of hours.
    - Last Cloud Sync was more than** – When the last cloud synchronization operation was performed more than the specified number of hours ago.
    - Volume Full** – When a volume is more than the specified percentage full.
    - User near storage quota** – When the specified percentage of a user's disk storage quota has been consumed.
  - Select each type of additional event for which you want emails to be sent:
    - Firmware Updated** – When the IBM COS FA Gateway firmware has been updated.
    - Device shutdown/started** – When the IBM COS FA Gateway starts up and shuts down.
- 6 Click **Revert**, if you made changes that you did not save, to revert to display the saved values.
- 7 Click **Save**.
- 8 To test the configuration, click **Test**.  
A test email is sent to the specified email addresses.

## GENERATING A SUPPORT REPORT

If a problem arises with your IBM COS FA Gateway you can generate a report for IBM support to use to identify and resolve the problem.

**To generate a support report:**

- 1 In the **CONFIGURATION** tab, select **System > Configuration Tools** in the navigation pane.



- 2 Click **Support Report**.

The report is generated in ZIP file in your computer's download folder.

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## CHAPTER 10. MAINTAINING THE IBM COS FA GATEWAY

In this chapter


- [Restarting the IBM COS FA Gateway](#)
- [Shutting Down the IBM COS FA Gateway](#)
- [Creating Redundancy Capabilities in the IBM COS FA Gateway](#)
- [Resetting the IBM COS FA Gateway to Its Default Settings](#)
- [Increasing Storage On an IBM COS FA Gateway Volume](#)
- [Updating the Firmware](#)

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### RESTARTING THE IBM COS FA GATEWAY

If you are experiencing problems with your IBM COS FA Gateway, restarting it may solve the problems.

**To restart the IBM COS FA Gateway via the user interface:**


- 1 In the status bar, click  and then click **Restart**.  
A confirmation message is displayed.
- 2 Click **Yes**.

The IBM COS FA Gateway restarts.

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### SHUTTING DOWN THE IBM COS FA GATEWAY

**To shut down a IBM COS FA Gateway via the user interface:**

- 1 In the status bar, click  and then click **Shutdown**.  
A confirmation message is displayed.
- 2 Click **Yes**.

The IBM COS FA Gateway shuts down.

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### CREATING REDUNDANCY CAPABILITIES IN THE IBM COS FA GATEWAY

The IBM COS FA Gateway redundancy capabilities should be handled by the storage infrastructure upon which the virtual disks are defined.

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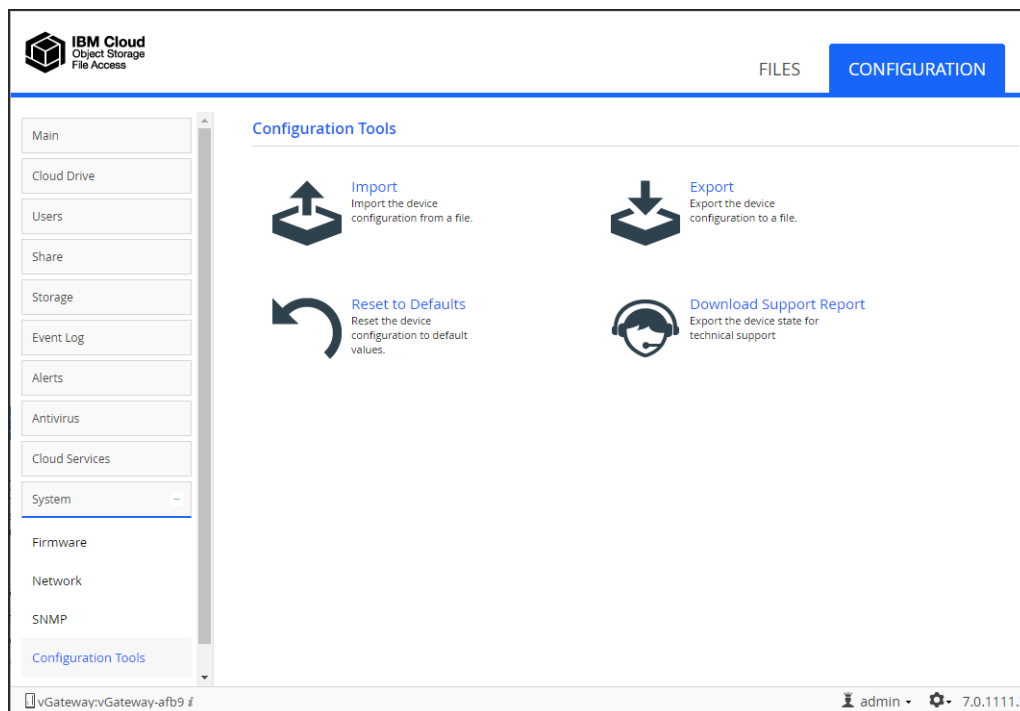
### RESETTING THE IBM COS FA GATEWAY TO ITS DEFAULT SETTINGS

You can reset the IBM COS FA Gateway to its factory default settings.

**Warning:** This action erases all of your passwords and settings, and you will need to reconfigure the IBM COS FA Gateway. To reconfigure, run the setup wizard, described in the initial setup section of the *IBM COS FA Gateway Setup Guide*.

**To reset the IBM COS FA Gateway to its default settings via the user interface:**

- 1 In the **CONFIGURATION** tab, select **System > Configuration Tools** in the navigation pane.  
The **Configuration Tools** page is displayed.



- 2 Click **Reset to Defaults**.  
A confirmation message is displayed.
- 3 Click **Yes**.

The IBM COS FA Gateway is reset to its default settings, and the **Login** page is displayed.

To reconfigure the IBM COS FA Gateway, run the setup wizard, described in the initial setup section of the *IBM COS FA Gateway Installation and Maintenance*.

## INCREASING STORAGE ON AN IBM COS FA GATEWAY VOLUME

You can increase the volume size when the volume defined in the IBM COS FA Gateway does **not** use all the available storage, as described in [Increasing a Volume Size When Additional Storage is Available for the Volume](#).

IBM recommends that the maximum storage is defined as a single disk when the IBM COS FA Gateway is created.

When the volume defined in the IBM COS FA Gateway **does** use all the available storage and the initial storage allocated was not the maximum and needs to be increased up to the maximum, you can increase the storage by either increasing the size of the disk or adding another existing disk. IBM recommends increasing the size of the disk rather than adding another disk. See [Increasing a Volume Size When Additional Storage is Not Available For the Volume](#).

The amount of storage that can be used by a IBM COS FA Gateway is 8TB.

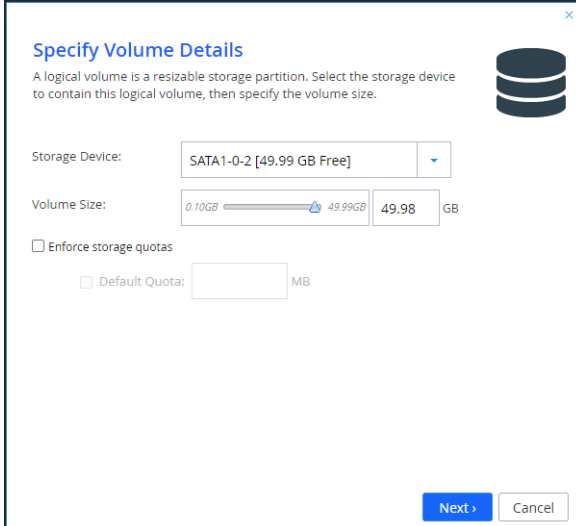
### Increasing a Volume Size When Additional Storage is Available for the Volume

To enlarge a volume in the IBM COS FA Gateway:

- 1 Log on to the IBM COS FA Gateway as an administrator.
- 2 In the **CONFIGURATION** tab, select **Storage > Volumes** in the navigation pane.

The **Volumes** page is displayed.


- 3 Select the volume and click **Edit**.  
The **Specify Volume Details** screen is displayed.



**Specify Volume Details**

A logical volume is a resizable storage partition. Select the storage device to contain this logical volume, then specify the volume size.

Storage Device: SATA1-0-2 [49.99 GB Free]

Volume Size: 0.10GB  49.99GB 49.98 GB

☐ Enforce storage quotas

☐ Default Quota:  MB

Next > Cancel

- 4 Move the **Volume Size** slider to increase the volume storage.

**Note:** The volume size cannot be decreased.

### Increasing a Volume Size When Additional Storage is Not Available For the Volume

#### For an IBM COS FA Gateway in ESXi

##### To enlarge a volume:

- 1 In the vSphere Client, power **off** the virtual machine.  
**Note:** You **must** power off the virtual machine before continuing with the procedure.
- 2 Right-click the IBM COS FA Gateway VM and select **Edit Settings**.  
The configuration is displayed for the IBM COS FA Gateway.
- 3 Specify the disk size greater than the current size. IBM COS FA Portal recommends storage at least 20% of the IBM COS FA Portal storage. The maximum disk size is 8TB.
- 4 Click **OK**.
- 5 Power on the virtual machine and follow the instructions in [Increasing a Volume Size When Additional Storage is Available for the Volume](#).

#### For an IBM COS FA Gateway in Hyper-V

##### To enlarge a volume:

- Note:** You can only expand a disk in Hyper-V if it was initially defined as **Dynamically expanding**. If it was defined as **Fixed size**, you can add another disk but you cannot expand the existing disk.
- 1 In the Hyper-V Manager, **shut down** the virtual machine.  
**Note:** You **must** shut down the virtual machine before continuing with the procedure.
  - 2 Right-click the IBM COS FA Gateway VM and select **Settings**.  
The configuration is displayed for the Virtual Gateway.
  - 3 Choose the hard disk and click **Edit**.

The **Edit Virtual Hard Disk Wizard** is displayed.

- 4 In the **Choose Action** page, select **Expand** and click **Next**.
- 5 Enter a new size greater than the current size. The maximum disk size is 8TB.
- 6 Click **Finish**.
- 7 Start the virtual machine and follow the instructions in [Increasing a Volume Size When Additional Storage is Available for the Volume](#).

## UPDATING THE FIRMWARE

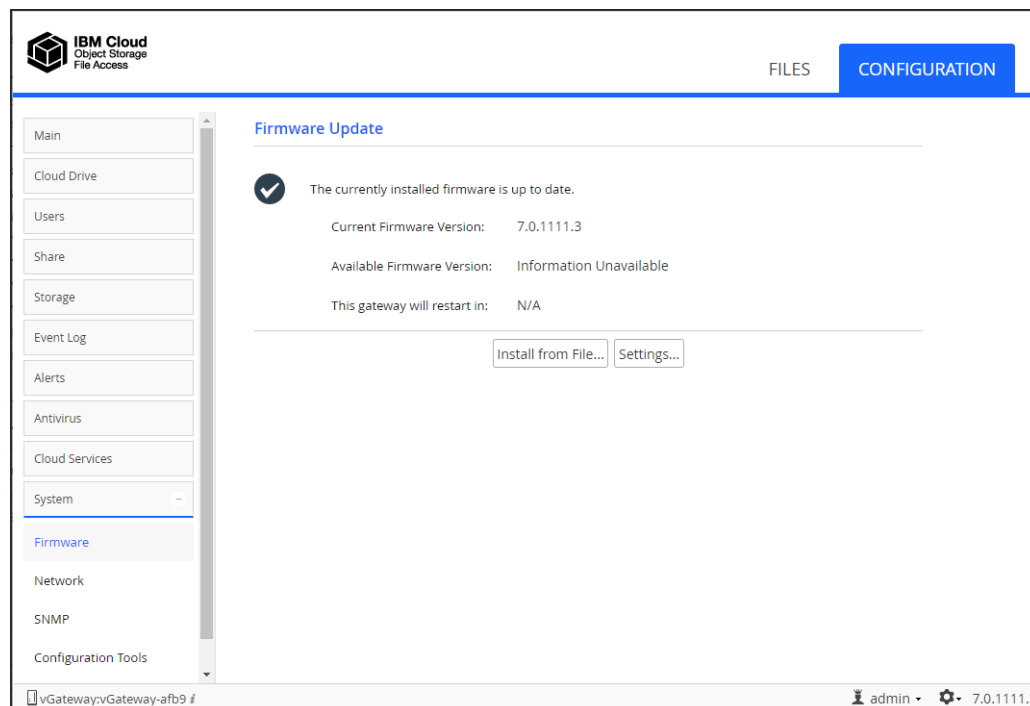
You can configure your IBM COS FA Gateway to automatically download firmware updates from the IBM COS FA Portal it is connected to and install this download. Alternatively, you can install firmware updates manually.

**Note:** The recommended method to update the IBM COS FA Gateway firmware is by pushing new firmware from the IBM COS FA Portal. For details refer to the IBM COS FA Portal documentation.

### Configuring Automatic Firmware Updates

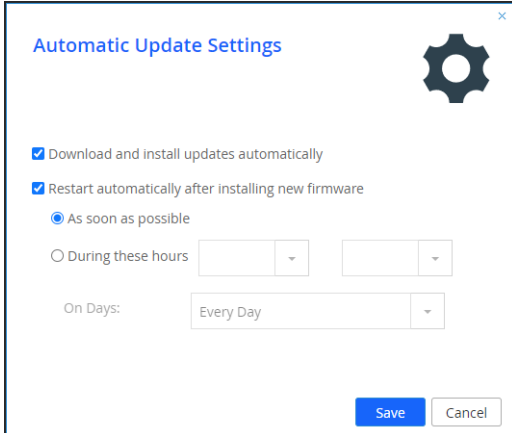
To configure automatic firmware updates:

- 1 In the **CONFIGURATION** tab, select **System > Firmware** in the navigation pane. The **Firmware Update** page opens, displaying the following information:
  - The currently installed firmware version
  - The most recent available firmware version
  - The amount of time remaining until the IBM COS FA Gateway restarts. This information is displayed if a firmware has been downloaded, and the IBM COS FA Gateway is configured to reboot automatically.



- 2 Click **Settings**.

The **Automatic Update Settings** window is displayed.



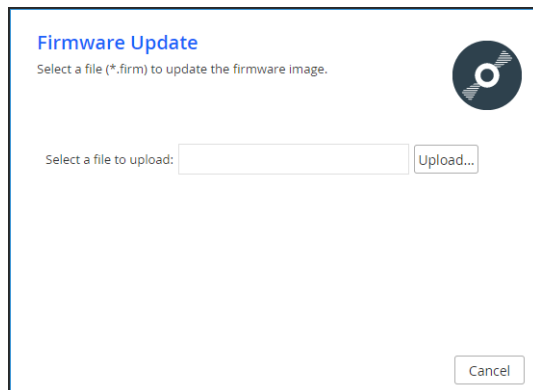
The image shows a window titled "Automatic Update Settings" with a gear icon in the top right corner. Inside the window, there are two checked checkboxes: "Download and install updates automatically" and "Restart automatically after installing new firmware". Below these, there are three options for when to restart: "As soon as possible" (selected with a radio button), "During these hours" (with two empty time input fields), and "On Days:" (with a dropdown menu showing "Every Day"). At the bottom right, there are "Save" and "Cancel" buttons.

- 3 To specify that the IBM COS FA Gateway should download and install firmware updates automatically, click **Download and install updates automatically**.  
If you do not select this option, you must perform firmware updates manually, as described in [Manually Upgrading the Firmware](#).
- 4 To specify that the IBM COS FA Gateway should automatically reboot after installing new firmware updates, do the following:
  - a Click **Restart automatically after installing new firmware**.
  - b Specify when automatic rebooting should occur, by doing one of the following:
    - To reboot as soon as possible after a firmware update, choose **As soon as possible**.  
In this case, the IBM COS FA Gateway will reboot as soon as it is recommended to do so. For example, the automatic reboot might be deferred, if the IBM COS FA Gateway is undergoing system maintenance that should not be interrupted.
    - To reboot only during specific hours, choose **During these hours**, then use the drop-down lists to specify the desired time range.

If you do not enable automatic rebooting, then you will need to reboot the IBM COS FA Gateway as described in [Restarting the IBM COS FA Gateway](#), when this page indicates that a new update has been installed.
- 5 Click **Save**.

### Manually Upgrading the Firmware

- 1 In the **CONFIGURATION** tab, select **System > Firmware** in the navigation pane.  
The **Firmware** page opens, displaying the currently installed firmware version, as well as the IBM COS FA Gateway model.
- 2 Click **Install from file**.  
The **Firmware Update Wizard** opens, displaying the **Firmware Update** window.



- 3 Click **Upload** and browse to the required firmware (\*.firm) file.  
The firmware file is uploaded, and the **Wizard Completed** screen is displayed.  
The IBM COS FA Gateway automatically reboots.