Use offline files to allow caching of files for offline use

ONTAP 9

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Use offline files to allow caching of files for offline use

Use offline files to allow caching of files for offline use overview

ONTAP supports the Microsoft Offline Files feature, or *client-side caching*, which allows files to be cached on the local host for offline use. Users can use the offline files functionality to continue working on files even when they are disconnected from the network.

You can specify whether Windows user documents and programs are automatically cached on a share or whether the files must be manually selected for caching. Manual caching is enabled by default for new shares. The files that are made available offline are synchronized to the Windows client's local disk. Synchronization occurs when network connectivity to a specific storage system share is restored.

Because offline files and folders retain the same access permissions as the version of the files and folders saved on the CIFS server, the user must have sufficient permissions on the files and folders saved on the CIFS server to perform actions on the offline files and folders.

When the user and someone else on the network make changes to the same file, the user can save the local version of the file to the network, keep the other version, or save both. If the user keeps both versions, a new file with the local user's changes is saved locally and the cached file is overwritten with changes from the version of the file saved on the CIFS server.

You can configure offline files on a share-by-share basis by using share configuration settings. You can choose one of the four offline folder configurations when you create or modify shares:

- No caching

  Disables client-side caching for the share. Files and folders are not automatically cached locally on clients and users cannot choose to cache files or folders locally.

- Manual caching

  Enables manual selection of files to be cached on the share. This is the default setting. By default, no files or folders are cached on the local client. Users can choose which files and folders they want to cache locally for offline use.

- Automatic document caching

  Enables user documents to be automatically cached on the share. Only files and folders that are accessed are cached locally.

- Automatic program caching

  Enables programs and user documents to be automatically cached on the share. Only files, folders, and programs that are accessed are cached locally. Additionally, this setting allows the client to run locally cached executables even when connected to the network.

For more information about configuring offline files on Windows servers and clients, consult the Microsoft

TechNet Library.

Related information

Using roaming profiles to store user profiles centrally on a CIFS server associated with the SVM

Using folder redirection to store data on a CIFS server

Using BranchCache to cache SMB share content at a branch office

Microsoft TechNet Library: technet.microsoft.com/en-us/library/

Requirements for using offline files

Before you can use the Microsoft Offline Files feature with your CIFS server, you need to know which versions of ONTAP and SMB and which Windows clients support the feature.

ONTAP version requirements

ONTAP releases support offline files.

SMB protocol version requirements

For storage virtual machine (SVM), ONTAP supports offline files on all versions of SMB.

Windows client requirements

The Windows client must support the offline files.

For the latest information about which Windows clients supports the Offline Files feature, see the Interoperability Matrix.

mysupport.netapp.com/matrix

Guidelines for deploying offline files

There are some important guidelines you need to understand when you deploy offline files on home directory shares that have the `showsnapshot` share property set on home directories.

If the `showsnapshot` share property is set on a home directory share that has offline files configured, Windows clients cache all of the Snapshot copies under the `~snapshot` folder in the user's home directory.

Windows clients cache all of the Snapshot copies under the home directory if one of more of the following is true:

- The user makes the home directory available offline from the client.

  The contents of the `~snapshot` folder in the home directory is included and made available offline.

- The user configures folder redirection to redirect a folder such as `My Documents` to the root of a home directory residing on the CIFS server share.

Some Windows clients might automatically make the redirected folder available offline. If the folder is redirected to the root of the home directory, the `~snapshot` folder is included in the cached offline content.

> Offline file deployments where the `~snapshot` folder is included in offline files should be avoided. The Snapshot copies in the `~snapshot` folder contain all data on the volume at the point at which ONTAP created the Snapshot copy. Therefore, creating an offline copy of the `~snapshot` folder consumes significant local storage on the client, consumes network bandwidth during offline files synchronization, and increases the time it takes to synchronize offline files.

Configure offline files support on SMB shares using the CLI

You can configure offline files support using the ONTAP CLI by specifying one of the four offline files setting when you create SMB shares or at any time by modifying existing SMB shares. Manual offline files support is the default setting.

About this task

When configuring offline files support, you can choose one of the following four offline files settings:

Setting	Description
`none`	Disallows Windows clients from caching any files on this share.
`manual`	Allows users on Windows clients to manually select files to be cached.
`documents`	Allows Windows clients to cache user documents that are used by the user for offline access.
`programs`	Allows Windows clients to cache programs that are used by the user for offline access. Clients can use the cached program files in offline mode even if the share is available.

You can choose only one offline file setting. If you modify an offline files setting on an existing SMB share, the new offline files setting replaces the original setting. Other existing SMB share configuration settings and share properties are not removed or replaced. They remain in effect until they are explicitly removed or changed.

Steps

1. Perform the appropriate action:

If you want to configure offline files on…	Enter the command…
A new SMB share	`vserver cifs share create -vserver vserver_name -share-name share_name -path path -offline-files {none|manual|documents|programs}`

If you want to configure offline files on…	Enter the command…
An existing SMB share	`vserver cifs share modify -vserver vserver_name -share-name share_name -offline-files {none|manual|documents|programs}`

2. Verify that the SMB share configuration is correct: `vserver cifs share show -vserver vserver_name -share-name share_name -instance`

Example

The following command creates an SMB share named “data1” with offline files set to `documents`:

```
cluster1::> vserver cifs share create -vserver vs1 -share-name data1 -path
/data1 -comment "Offline files" -offline-files documents

cluster1::> vserver cifs share show -vserver vs1 -share-name data1
-instance

                          Vserver: vs1
                            Share: data1
         CIFS Server NetBIOS Name: VS1
                             Path: /data1
                Share Properties: oplocks
                                  browsable
                                  changenotify
              Symlink Properties: enable
          File Mode Creation Mask: -
     Directory Mode Creation Mask: -
                   Share Comment: Offline files
                       Share ACL: Everyone / Full Control
    File Attribute Cache Lifetime: -
                     Volume Name: -
                   Offline Files: documents
    Vscan File-Operations Profile: standard
Maximum Tree Connections on Share: 4294967295
       UNIX Group for File Create: -
```

The following command modifies an existing SMB share named “data1” by changing the offline files setting to `manual` and adding values for the file and directory mode creation mask:

```
cluster1::> vserver cifs share modify -vserver vs1 -share-name data1
-offline-files manual -file-umask 644 -dir-umask 777

cluster1::> vserver cifs share show -vserver vs1 -share-name data1
-instance

                          Vserver: vs1
                            Share: data1
          CIFS Server NetBIOS Name: VS1
                             Path: /data1
                   Share Properties: oplocks
                                     browsable
                                     changenotify
                 Symlink Properties: enable
           File Mode Creation Mask: 644
      Directory Mode Creation Mask: 777
                    Share Comment: Offline files
                        Share ACL: Everyone / Full Control
    File Attribute Cache Lifetime: -
                      Volume Name: -
                    Offline Files: manual
    Vscan File-Operations Profile: standard
Maximum Tree Connections on Share: 4294967295
       UNIX Group for File Create: -
```

Related information

Adding or removing share properties on an existing SMB share

Configure offline files support on SMB shares by using the Computer Management MMC

If you want to permit users to cache files locally for offline use, you can configure offline files support by using the Computer Management MMC (Microsoft Management Console).

Steps

1. To open the MMC on your Windows server, in Windows Explorer, right-click the icon for the local computer, and then select **Manage**.
2. On the left panel, select **Computer Management**.
3. Select **Action** > **Connect to another computer**.

   The Select Computer dialog box appears.

4. Type the name of the CIFS server or click **Browse** to locate the CIFS server.

   If the name of CIFS server is the same as the storage virtual machine (SVM) host name, type the SVM

name. If the CIFS server name is different from the SVM host name, type the name of the CIFS server.

5. Click **OK**.
6. In the console tree, click **System Tools** > **Shared Folders**.
7. Click **Shares**.
8. In the results pane, right-click the share.
9. Click **Properties**.

   Properties for the share you selected are displayed.

10. In the **General** tab, click **Offline Settings**.

    The Offline Settings dialog box appears.

11. Configure the offline availability options as appropriate.
12. Click **OK**.

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