CIFS

CIFS is an abbreviation of the Common Internet File System. It is a protocol of the network filesystem. This protocol provides the shared access to files, printers, and the serial ports between the machines on the network. It is used on those devices which run on the [Windows Operating System](https://www.javatpoint.com/windows).

Common Internet File System was introduced as a specific or advanced version of Server Message Block (SMB), which was created by Microsoft in the year of 1996. It is basically used for sharing the files remotely via [Internet Protocol](https://www.javatpoint.com/ip) (IP).

This protocol is also used in embedded and appliance systems. [NAS](https://www.javatpoint.com/nas) (Network Attached Storage) and [SAN](https://www.javatpoint.com/san) (Storage Area Network) are the recent storage products which are based on the CIFS.

This protocol enables the client to manipulate the files as same as if they were manipulating on the local computers. It also allows a group of users for sharing the document within corporate intranets. It provides various features which are not supported by NFS. This protocol is also supported by other OS such as Unix.

Following are three main entities which define the CIFS:

1. **Client:** The client is a user who initiates most of the messages and the implementation of a protocol.
2. **Server:** It stores the messages in the network and performs the functionality.
3. **Application:** By using the application, clients access the files which are shared over the network.

Features of CIFS

Following are the important characteristics or features of the Common Internet File System:

* **File Access:** Clients can easily open, close, read, write, and seek the files over the network.
* **Authenticate Transfer:** A client can easily create one or more secure contexts over the network so that there is no chance of data loss.
* **Resource Access:** A client can concurrently access the one or more shared services on the target server.
* **Transport Independent:** This protocol does not need any external protocol for passing the SMB messages between the client and the server.
* **Extended Attributes:** Common Internet File System supports those attributes which come under the non-filesystem.
* **Flexible Connectivity:** A single client can easily make one or more networks to each server.
* **Notification:** When the file content is modified by the client or any user, then the server notifies or specifies the modifications.
* **Safe Caching:** This protocol enables the client or user to cache data for better performance.
* **File and record locking:** This protocol supports the locking for files and records. So, due to this, it does not allow another person for writing or opening the files.

How does the CIFS Work?

Following steps describe how to share the file over the network:

Step 1. The client who is a user sends a request to the server that he/she wants to access.

Step 2. After that, the server accepts the request which is sent by the client.

Step 3. And then, the server sends the back response to the client.

Step 4: And, at last, the server connected to other servers and then share the files to the client.

CIFS and SMB

SMB is an abbreviation of Server Message Block. CIFS is an abbreviation of the Common [Internet](https://www.javatpoint.com/internet) File system. CIFS is a protocol which is a dialect of SMB, i.e., CIFS is an advanced version of SMB.

CIFS vs NFS

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| **CIFS** | **NFS** |
| 1. CIFS is an abbreviation of the Common Internet File system. | 1. NFS is an abbreviation of the Network File System. |
| 2. This protocol is used for sharing the files by Windows Operating systems. | 2. This protocol is used for sharing the files by Unix and Linux Operating systems. |
| 3. It is a low scalable. | 3. It is highly scalable. |
| 4. The speed of communication is medium. | 4. The speed of communication is fast. |
| 5. Common Internet File System is more secure than the Network File System. | 5. The network File system is not a secure protocol. |
| 6. CIFS is a reliable protocol. | 6. NFS is not a reliable protocol. |
| 7. This protocol provides the sessions. | 7. This protocol does not provide the session. |
| 8. Its implementation is complex. | 8. This protocol is easy to implement and set up. |
| 9. This protocol uses 139 and 445 TCP ports and 137 and 138 UDP ports. | 9. This protocol uses 111 port for both TCP and UDP. |