

# OneDrive Sync



## How does OneDrive sync files?

The business of sync with OneDrive.exe

The new OneDrive sync client (OneDrive.exe) uses the Windows Notification Service (WNS) to check for changes that are made to items that are stored in the cloud.

WNS tells the sync client when a change actually happens, which initiates a query for changes. The user interface communicates with storage through a REST API.

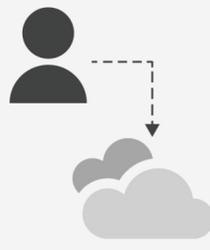
### Technologies used in sync

`Microsoft-my.sharepoint.com/personal/<your library id>/_api/SPFileSync.svc`  
Used for tasks such as finding changes, uploading, and querying for available storage space.

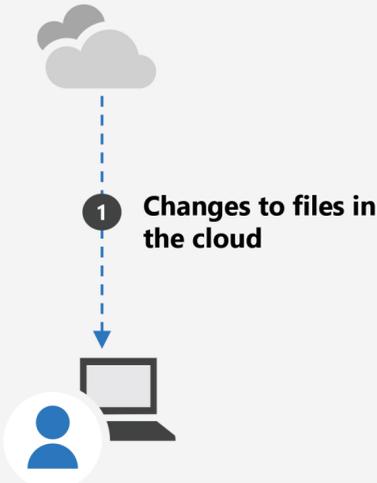
`Microsoft-my.sharepoint.com/personal/<useraccount_company_com>/_layouts/15/download.aspx`  
Used for downloading items.

`odc.officeapps.live.com`  
Used to discover what sites and organizations a user has permission to access.

## How information flows



When changes are made to files in the cloud



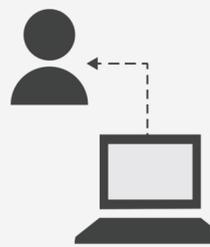
### 1 When changes are made to files in the cloud

The Windows Notification Service (WNS) informs the OneDrive sync client when changes are made to items in the cloud.

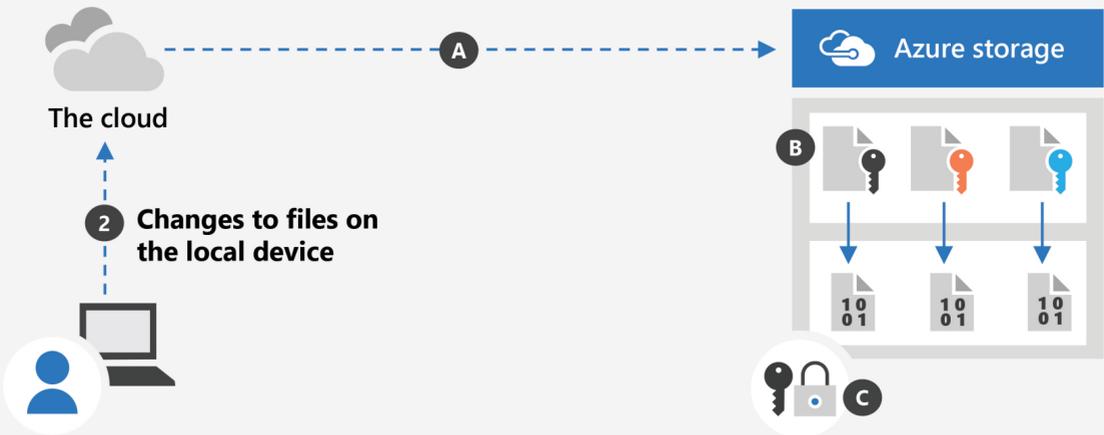
Changes in the cloud are added to OneDrive's Internal Server Changes Queue.

- Metadata (move, rename, delete) changes happen immediately.
- Content downloads start a download session with the service.

## How information flows



When changes are made on the local device



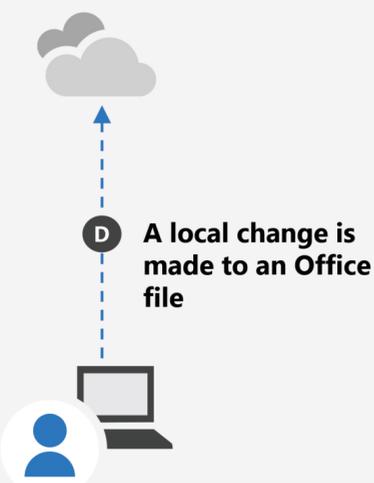
**2** The Windows Notification Service (WNS) informs the OneDrive sync client when changes are made to items on the local device.

**B** Each file chunk is encrypted with a unique key. File chunks are stored across multiple containers in Azure. All keys are required to reassemble the file.

**A** Your cloud database has metadata pointers to Microsoft Azure.

**C** Each unique key used to encrypt a file chunk is also encrypted by a master key before the data is stored. This is to ensure protection at rest.

## Syncing of Office files



### D For all items except Office 2019 or Office 2016 files

Local changes are placed in a Changes to Send queue and are sent in the following ways:

- New or changed files up to a size defined by server settings (for example, 8 MB) are sent inline in a single HTTPS request.
- New or changed files over the defined size are divided in "chunks" and are sent one at a time through a Background Intelligent Transfer Service (BITS) session.
- Other changes are batched together with other related changes of the same type into HTTPS requests to the server.

### For Office 2019 and Office 2016 files:

- OneDrive communicates with individual Office apps to trade metadata about changes so that syncing is done correctly.
- Collaborative syncing is handled by the Office desktop app when it is running and syncing with OneDrive.
- If an Office app is not actively running, OneDrive will handle the content transfer.