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Schedule a Sync

View in the help center:

<https://bitwarden.com/help/schedule-directory-sync/>

Schedule a Sync

For organizations using the Directory Connector CLI, automatic syncs can be scheduled on defined intervals as an alternative to using the desktop app's **Interval** setting. This is particularly useful in headless environments, or in circumstances where a desktop app cannot be left running in the background.

To schedule syncs, use **Cron** in Unix-like environments including Linux and MacOS, and use **Task Scheduler** in Windows environments:

⇒Cron

Cron permissions

When running a cron job, we recommend doing so as a dedicated Directory Connector user. Create a **bwdc** user if you haven't already, and add that user to the **etc/cron.allow** list. This will allow a non-Root user to set up and run cron jobs.

In order to continue, you will also need your organization's API key **client_id** and **client_secret**, which can be obtained by an organization **owner** from the Web Vault by navigating to organization **Settings** → **My Organization**.

Setup a sync script

In order to avoid session timeouts, we recommend creating a shell script to run through cron. This script should securely read your **client_secret** to complete the login, and run a **bwdc sync** command that writes output to **bwdc.log**.

💡 Tip

Need to sync from multiple directories? In your sync script, you can specify multiple folders, each of which must contain a **data.json** file with your directory sync settings.

You can then specify each directory to sync by performing multiple **bwdc sync** operations, for example:

Bash

```
BITWARDENCLI_CONNECTOR_APPDATA_DIR="./instance-1" bwdc sync
BITWARDENCLI_CONNECTOR_APPDATA_DIR="./instance-2" bwdc sync
```

Setup the cron job

As the permitted **bwdc** user:

1. Edit the user's crontab file by entering **crontab -e** in the terminal, or as edit the crontab file as any user by entering **crontab -u <bwdc_username> -e**.
2. Add a line to the crontab that includes:
 - A scheduling expression that will determine the time/recurrence interval on which to execute the desired command (for example, **0 * * 2** to run every Tuesday at midnight).
 - The command to execute at the specified time/recurrence interval. In this case, execute the previously created sync script (for example, **bwdcSyncService.sh**):

For example, to run the sync script every Monday at 12:00:

Bash

```
# 0 12 * * 1 bwdcSyncService.sh
```

Cron job scheduling expressions

Use the following reference when scheduling syncs via cron to ensure you're scheduling them for the desired time:

Bash

```
# | _____ minute (0 - 59)
# | | _____ hour (0 - 23)
# | | | _____ day of the month (1 - 31)
# | | | | _____ month (1 - 12)
# | | | | | _____ day of the week (0 - 6) (Sunday to Saturday;
# | | | | | 7 is also Sunday on some systems)
# | | | | |
# | | | | |
# * * * * * <command to execute>
```

💡 Tip

If you're not yet comfortable with cron job scheduling expressions, check out <https://crontab.guru/> for help.

Please note, this is a third-party resource that is not operated or maintained by Bitwarden.

⇒ Task Scheduler

Task Scheduler permissions

When running a task, we recommend doing so as a dedicated Directory Connector user. Create a **bwdc** user if you haven't already.

In order to continue, you will also need your organization's API key **client_id** and **client_secret**, which can be obtained by an organization **owner** from the web app by navigating to organization **Settings** → **My Organization**.

Setup a sync script

In order to avoid session timeouts, you will need to create a script to run as the Task Scheduler action. This script should securely read your **client_secret** to complete the login, and run a **bwdc sync** command that writes output to **bwdc.log**.

 **Tip**

Need to sync from multiple directories? In your sync script, you can specify multiple folders, each of which must contain a `data.json` file with your directory sync settings.

You can then specify each directory to sync by performing multiple `bwdc sync` operations, for example:

Bash

```
BITWARDENCLI_CONNECTOR_APPDATA_DIR="./instance-1" bwdc sync  
BITWARDENCLI_CONNECTOR_APPDATA_DIR="./instance-2" bwdc sync
```

Create a task

As the dedicated `bwdc` user:

1. Open Task Scheduler and select **Create Task** from the Actions menu.
2. Configure the task with the following security options:
 - Set the task to use the created `bwdc` user.
 - Set the task to **Run whether user is logged on or not**.
3. Select the **Triggers** tab and select the **New...** button to create a trigger that fits your directory sync needs.

Tip

For example, you could create a weekly trigger that runs at 8:00 PM every Sunday or every week:

New Trigger

Begin the task: On a schedule

Settings

One time

Daily

Weekly

Monthly

Start: 11/ 7/2021 8:00:00 PM Synchronize across time zones

Recur every: 1 weeks on:

Sunday Monday Tuesday Wednesday

Thursday Friday Saturday

Advanced settings

Delay task for up to (random delay): 1 hour

Repeat task every: 1 hour for a duration of: 1 day

Stop all running tasks at end of repetition duration

Stop task if it runs longer than: 3 days

Expire: 11/ 3/2022 2:24:58 PM Synchronize across time zones

Enabled

OK Cancel

Using Task Scheduler

4. Select the **Actions** tab and select the **New...** button to create an action that runs the created sync script.

5. Select **OK** to finish creating the scheduled task.