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Schedule a 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 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
> 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 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:
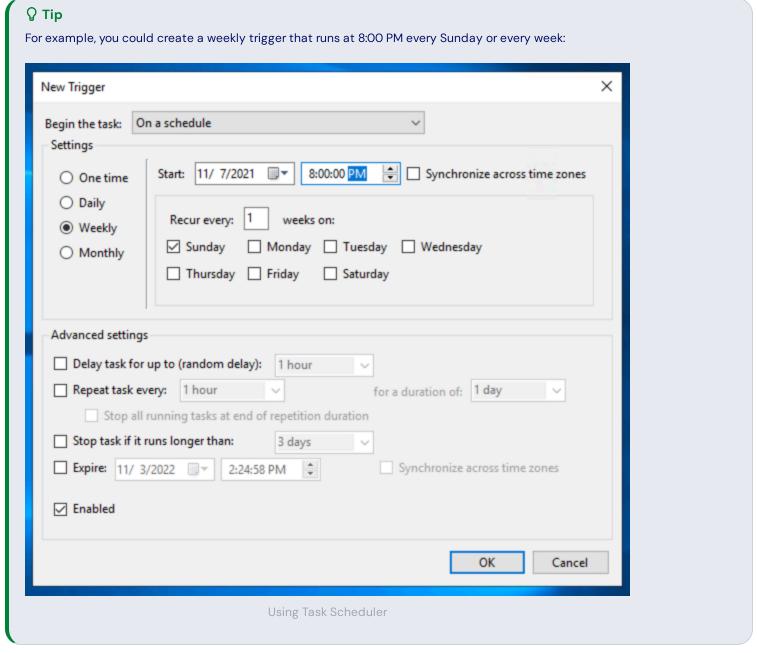>
> ```Bash
> BITWARDENCLI_CONNECTOR_APPDATA_DIR="./instance-1" bwdc sync
> BITWARDENCLI_CONNECTOR_APPDATA_DIR="./instance-2" bwdc sync
> ```

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:
>
>
>
> 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.