#1 European Bug Bounty Platform

YWH2BT User Guide

Contents

YWH2BT synchronizes your vulnerability reports with issues of your bug tracker(s). It automatically retrieves reports you want to copy in your bug tracker, creates the related issue, and syncs further updates between issues and reports.
It comes with a handy GUI to set up and test the integration, while completely controlling the information you allow to be synchronized from both side.

It supports github, gitlab, jira/jiracloud and servicenow.

1 Architecture

YWH2BT embeds both the GUI to set up the integration, and the application to be scheduled on your server to periodically poll and synchronize new reports.
You can either run both on a single machine, or prepare the configuration file on a computer (with the GUI) and transfer it on the server and use it through a scheduled command.

Since data is pulled from the Yes We Hack platform to your server, only regular outbound web connections need to be authorized on your server.

2 Requirements

- `python` >= 3.7,<=3.9
- `pip`

To use it on your program, while maintaining the maximum security, the tool requires you create a Personal Access Token on the Yes We Hack platform with the role "Program Bug Tracker" for the desired program.

3 Installation

YWH2BT can be installed with `pip`, through the command:

```
pip install ywh2bt
```

Or upgraded from a previously installed version:

```
pip install ywh2bt --upgrade
```

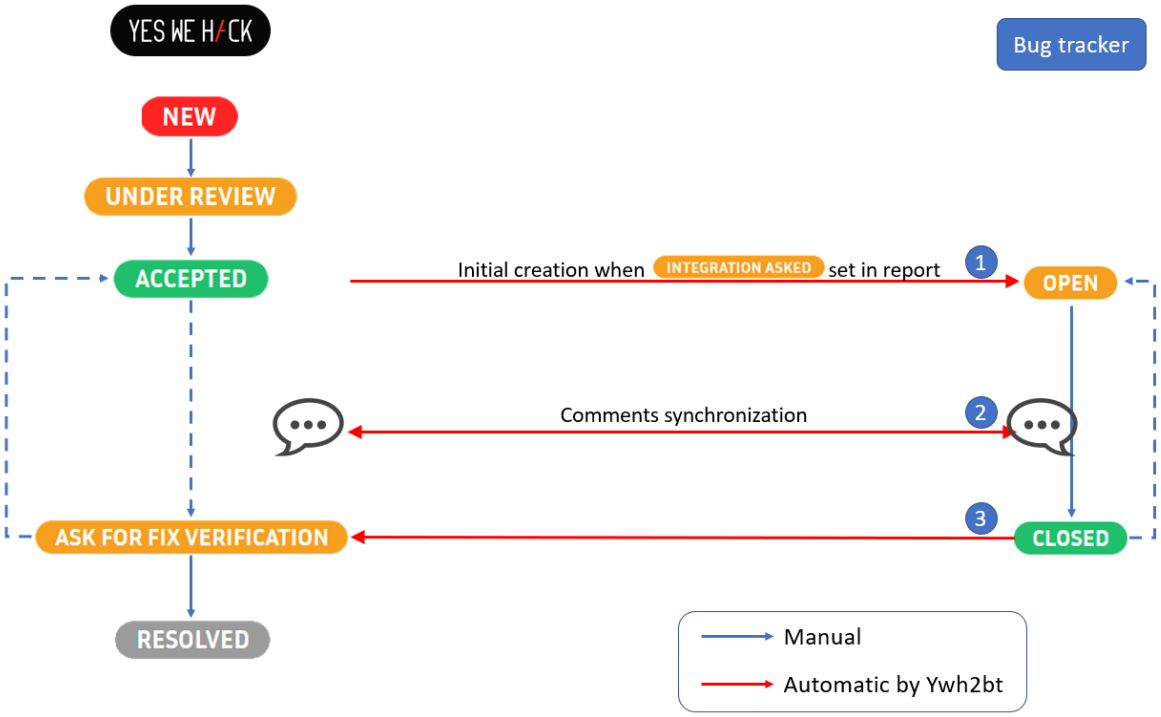
If you need to deploy only the command line version on a server, a runnable docker image is also available. You can install it with:

```
docker pull yeswehack/ywh2bugtracker:latest
```

Then, run it with the same command as described below, prefixed with `docker run yeswehack/ywh2bugtracker`.
See `docker run yeswehack/ywh2bugtracker -h` or `docker run yeswehack/ywh2bugtracker [command] -h` for detailed help.

4 Usage

4.1 Workflow

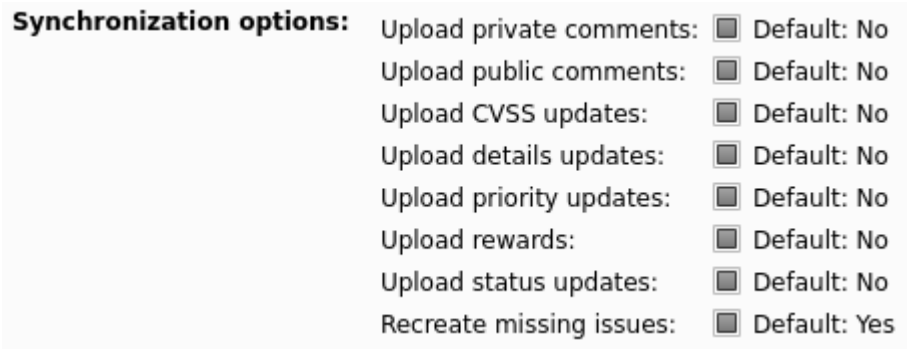


1. Issue creation is achieved upon first synchronization after "Ask for integration" (AFI) Tracking Status is set

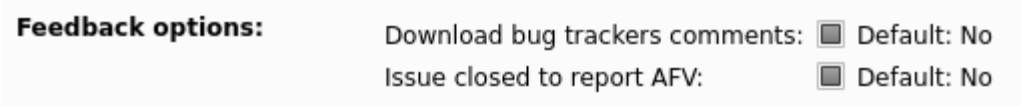
- When integrated, Tracking Status is automatically set to "Tracked"
- Creation is possible whatever report status. It is however advised to set AFI status only after acceptance, since the report is from this point considered valid.
- Subsequent returns to "Ask for integration" status won't create another issue.

2. The types of comments synchronized depends on configuration:

- Updates pushed from reports to issues:



- Updates pushed from issues to reports:



3. "Ask for fix verification" can only be set from "Accepted" status, otherwise it will fail and not be retried later.

4.2 GUI

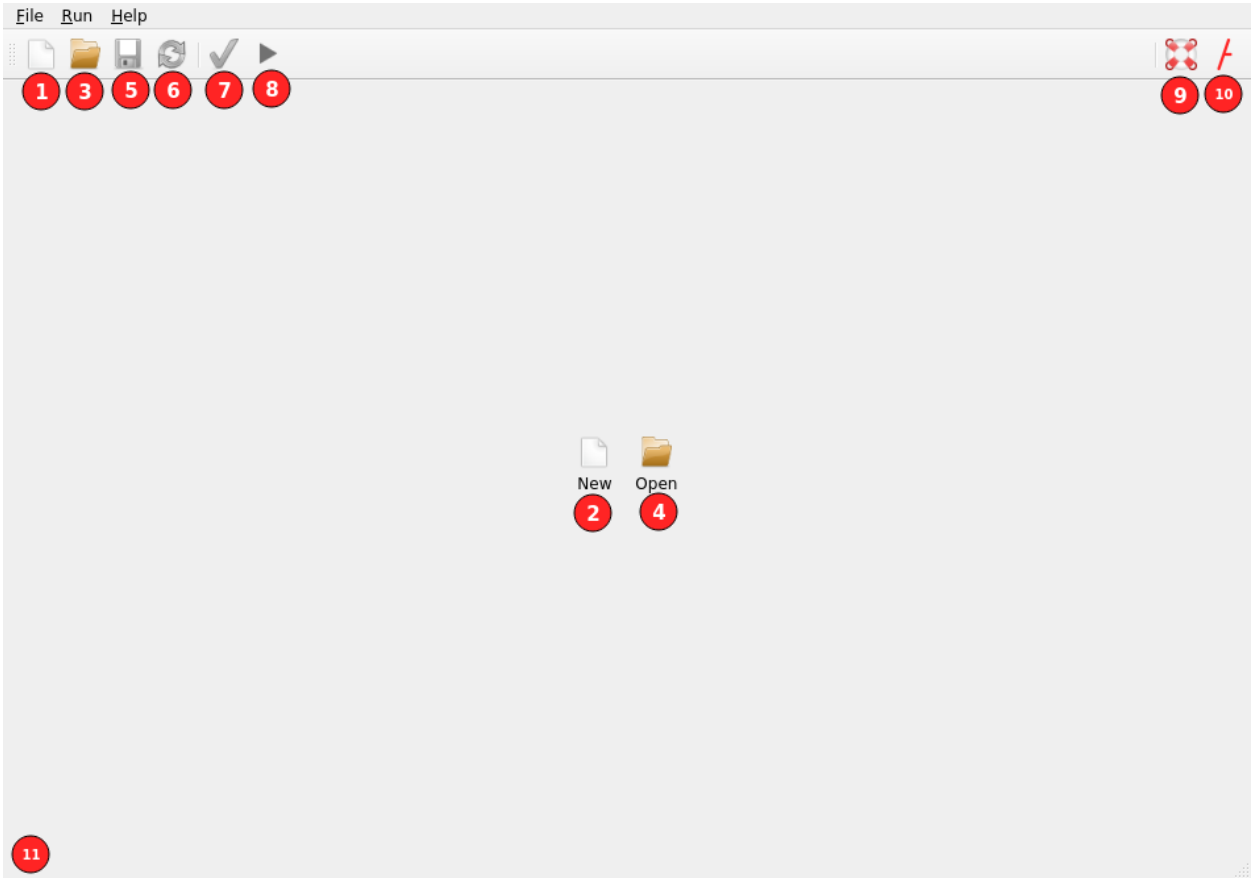
The Graphical User Interface provides assistance to create, modify and validate/test configurations. It also allows synchronization with bug trackers.

To run it, simply type `ywh2bt-gui` in a shell.

4.2.1 GUI tips

- Form labels in **bold font** means that the field is mandatory.
- Form labels in ~~*striked and italic font*~~ means that the field is deprecated and will be removed in a future release of the tool.
- Hovering form labels and buttons with the mouse pointer often reveals more information in a floating tooltip or in the status bar.

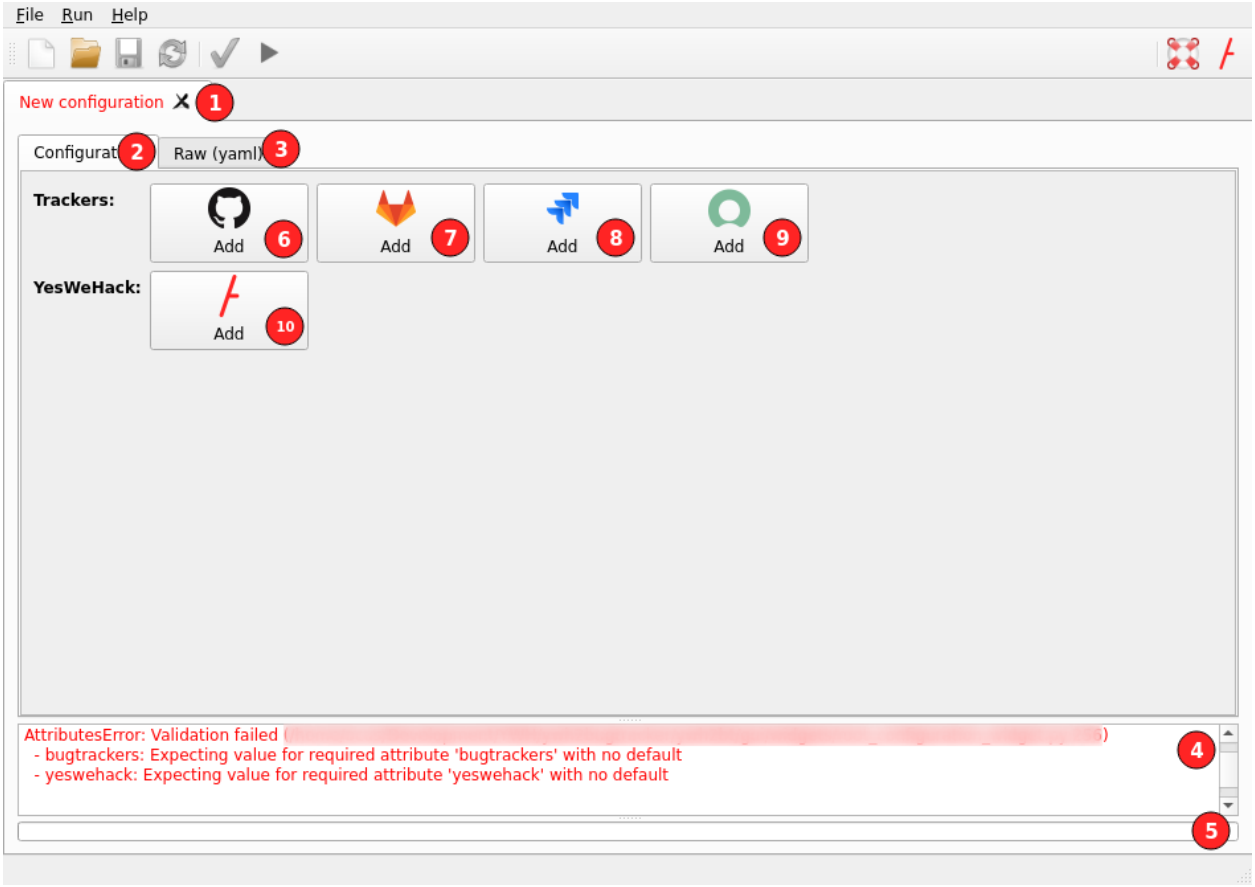
4.2.2 Welcome screen



Legend:

- 1, 2: Create a new configuration
- 3, 4: Open an existing configuration file
- 5: Save the current configuration into a file
- 6: Reload the current configuration from the original file
- 7: Test the current configuration
- 8: Execute the synchronization using the current configuration
- 9: Show a detailed description of the configuration schema
- 10: Show information about ywh2bt
- 11: Status bar (details about the hovered UI item, ...)

4.2.3 New configuration screen



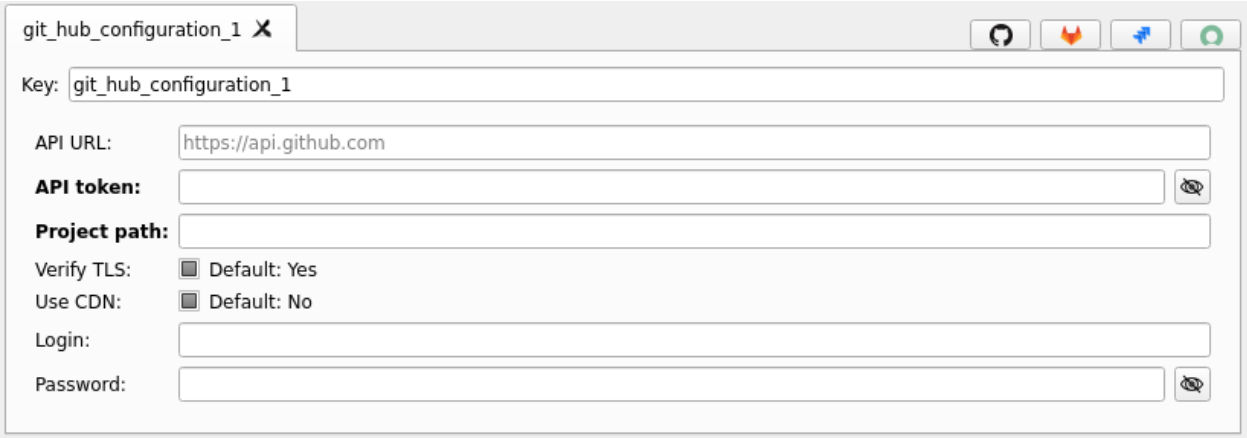
Legend:

- 1: Name of the configuration file. **If text color is red, the configuration is not valid.**
- 2: Visual mode tab, for modifying the configuration through a form. Changes made in this tab are automatically reflected in the raw mode tab.
- 3: Raw mode tab, for modifying the configuration in plain text. Changes made in this tab are automatically reflected in the visual mode tab.
- 4: Logs panel (error messages, event logs, ...)
- 5: Progress bar indicating a running test or synchronization

- 6: Add a new GitHub tracker integration
- 7: Add a new GitLab tracker integration
- 8: Add a new Jira tracker integration
- 9: Add a new ServiceNow tracker integration
- 10: Add a new Yes We Hack integration

4.2.4 Integrations

4.2.4.1 GitHub integration



4.2.4.1.1 Requirements

- Create a GitHub API access token:
  - Go to your GitHub account
  - In *Settings > Developer settings > Personal access tokens*, click *Generate new token*.
  - Name the token and select the scopes: If the repository in which you want to integrate the issues is:
    - public: choose "Access public repositories" (`public_repo`) scope
    - private: choose "Full control of private repositories" (`repo`) scope
  - Click "Generate token".
  - Make sure to copy the token. You won't be able to see it again!

4.2.4.1.2 Configuration

- **Key**: a unique name identifying this integration.
  This will be used when configuring Yes We Hack integration
- **API URL**: GitHub API URL (if different from the default one).
- **API token**: GitHub API access token previously created.
- **Project path**: path of the project on github.com.
  e.g. for the project located at `https://github.com/yeswehack/ywh2bugtracker`, the path is `yeswehack/ywh2bugtracker` .
- **Verify TLS**: whether to verify if the API server's TLS certificate is valid.
- **Use CDN**: When activated, this option allows upload of file attachments using a workaround because GitHub API does not natively provide a functionality to upload attachments on issues.
- **Login**: GitHub account login. Only used when "Use CDN" is activated.

- **Password**: GitHub account password. Only used when "Use CDN" is activated.

4.2.4.1.3 Known limitations When "Use CDN" is activated, the GitHub account associated with the "Login" cannot have the two-factor authentication enabled.

4.2.4.2 GitLab integration

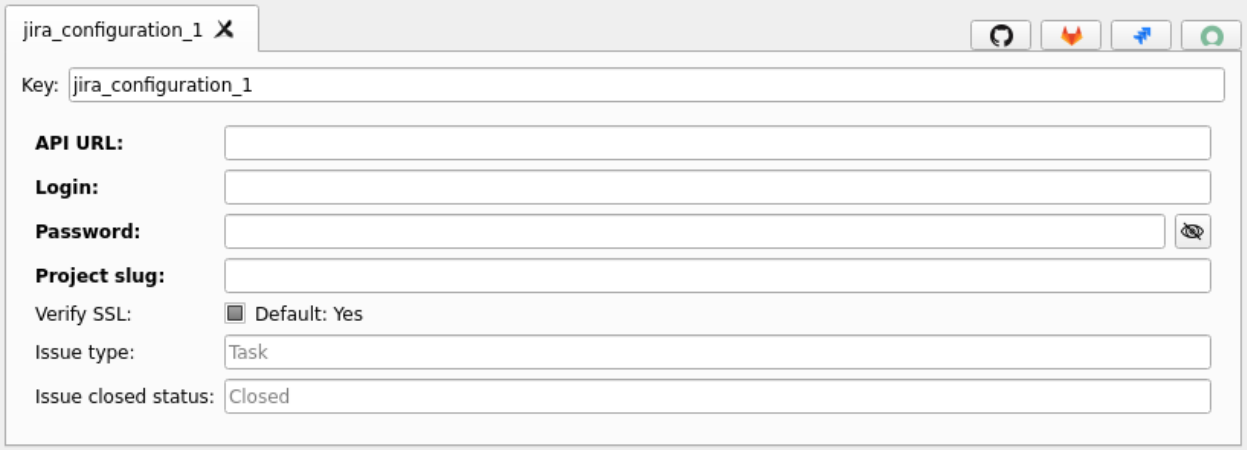
4.2.4.2.1 Requirements

- Create a GitLab API access token:
  - Go to your GitLab account
  - Go to *Preferences > User Settings > Access Tokens*.
  - Name the token and select the `api` scope.
  - Click "Create personal access token".
  - Make sure to copy the token. You won't be able to see it again!

4.2.4.2.2 Configuration

- **Key**: a unique name identifying this integration.
  This will be used when configuring Yes We Hack integration
- **API URL**: GitLab API URL (if different from the default one).
- **API token**: GitLab API access token previously created.
- **Project path**: path of the project on gitlab.com.
  e.g. for the project located at `https://gitlab.com/yeswehack/ywh2bugtracker`, the path is `yeswehack/ywh2bugtracker`.
- **Verify TLS**: whether to verify if the API server's TLS certificate is valid.
- **Confidential issues**: whether to mark created issues as confidential.

4.2.4.3 Jira integration



4.2.4.3.1 Requirements

- Create a Jira API token:
  - Go to your Atlassian account
  - Go to *Security > API token > Create and manage API tokens*.
  - Click "Create an API token".
  - Name the token.
  - Click "Create".
  - Make sure to copy the token. You won't be able to see it again!

4.2.4.3.2 Configuration

- **Key**: a unique name identifying this integration.
  This will be used when configuring Yes We Hack integration
- **API URL**: Jira API URL.
- **Login**: Jira account login.
- **Password**: Jira API token previously created.
- **Project slug**: project key as defined in Jira (see *Project settings > Details > Key*).
- **Verify TLS**: whether to verify if the API server's TLS certificate is valid.
- **Issue type**: type of issue to be created (in Jira, see *Project settings > Issue types* for a list of valid types). **This value is sensitive to the Jira account language.**
- **Issue closed status**: name of the workflow status for which the issue is considered closed/done. **This value is sensitive to the Jira account language.**

4.2.4.4 ServiceNow integration

4.2.4.4.1 Requirements

- Create a new user in your ServiceNow instance:
  - In *User Administration* > *Users*, click the *New* button.
  - Fill in the details about the new user, providing **at least**:
    - *User ID*
    - *Password*

      It is strongly recommended to check *Web service access only* in order to prevent the user from accessing the ServiceNow UI.
  - Click the *Submit* button to create the user.
- In order to read and modify the Additional Comments on the ServiceNow incidents, users must be granted a specific role that allows access controls on the `sys_journal_field` table:
  - In *System Definition* > *Tables*, open "Journal Entry" / `sys_journal_field`.
  - Select the *Controls* tab.
  - Check *Create access controls*.
  - In the *User role* field, enter `u_journal_entry_user` or leave the default value.
  - Click the *Update* button.
- Apply the user roles to the user:
  - In *User Administration* > *Users*, open the user you created earlier.
  - Select the *Roles* tab.
  - Click the *Edit* button.
  - Move the following items from the list on the left to the list on the right:
    - `snc_platform_rest_api_access`: allows access to Platform Rest APIs
    - `sn_incident_read`: read access to the Incident Management Application and related functions
    - `sn_incident_write`: write access to the Incident Management Application and related functions
    - `u_journal_entry_user` (or the role you defined earlier): allows access to the `sys_journal_field` table
  - Click the *Save* button to save the roles.
  - Click the *Update* button to update the user.

4.2.4.4.2 Configuration

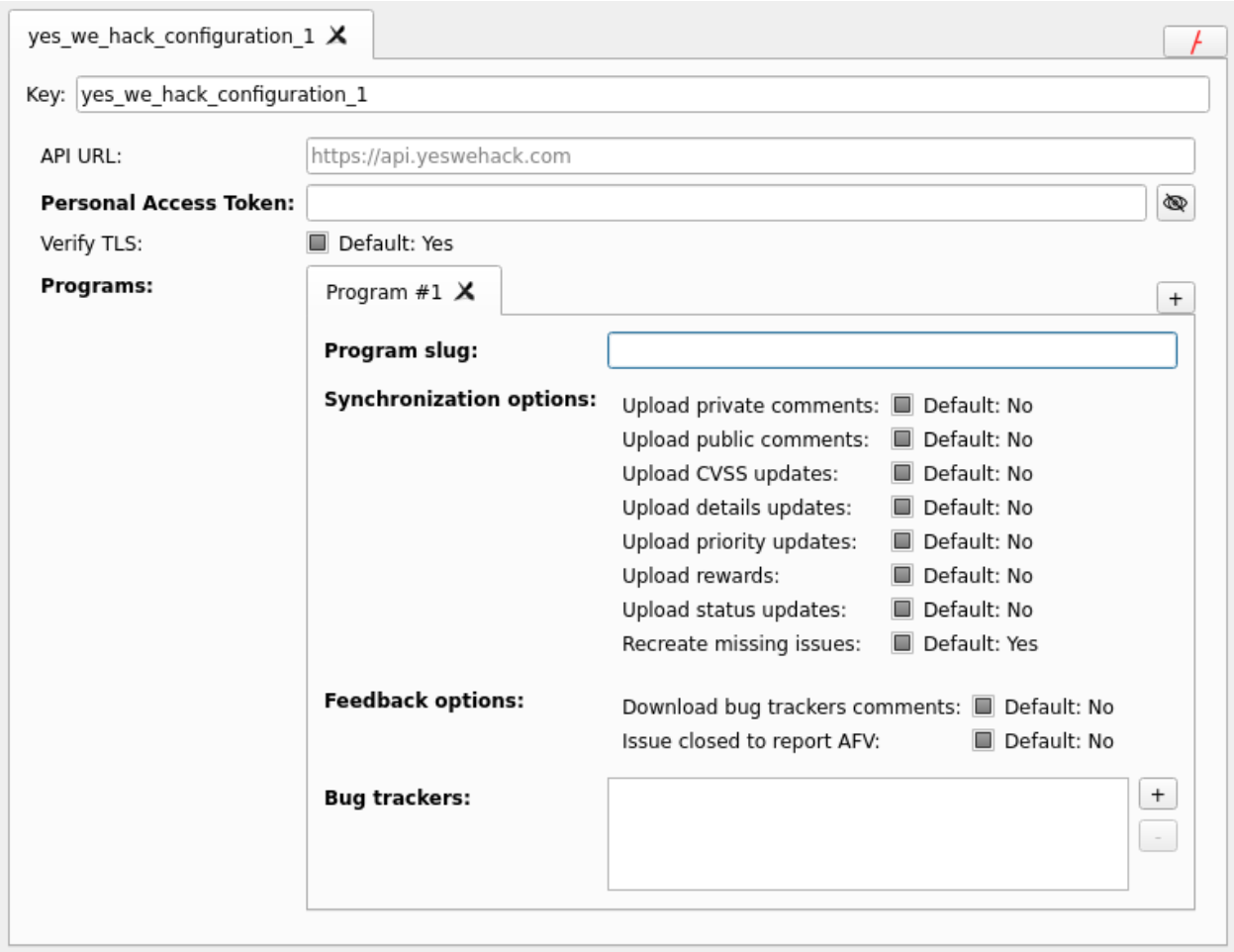
- **Key**: a unique name identifying this integration.
  This will be used when configuring Yes We Hack integration
- **Instance host**: ServiceNow instance host (e.g. `my-instance.service-now.com`).

- **Login**: ServiceNow user login.
- **Password**: ServiceNow user password.
- **Use SSL**: whether to use SSL connection with the server.
- **Verify TLS**: whether to verify if the API server's TLS certificate is valid.

4.2.4.4.3 Specific behaviours

- When the feedback option *Issue closed to report AFV* of Yes We Hack integration is activated, the report status will be set to *AFV* only if the ServiceNow incident is set to *Closed*, not *Resolved*.

4.2.4.5 Yes We Hack integration



4.2.4.5.1 Requirements

- Have a user account on the Yes We Hack platform. This account will be used by the tool to interact with the platform:
  - the user must have a Personal Access Token with the "Program Bug Tracker" role on the programs, given by the Program or Business Unit manager

More information on how to set up API Apps or user roles are available in the official Yes We Hack User Guide that can be downloaded from the Yes We Hack platform.

4.2.4.5.2 Configuration

- **Key**: a unique name identifying this integration.
- **API URL**: Yes We Hack platform API URL.
- **Personal Access Token**: a token.
  See Requirements.
- **Verify TLS**: whether to verify if the API server's TLS certificate is valid.
- **Programs**: a list of programs to be synchronized.
  - **Program slug**: a program slug.
  - **Synchronization options**: options for synchronizing a Yes We Hack report with the bug tracker.
    - **Upload private comments**: whether to upload the reports private comments into the bug tracker.
    - **Upload public comments**: whether to upload the reports public comments into the bug tracker.
    - **Upload CVSS updates**: whether to upload the reports CVSS updates into the bug tracker.
    - **Upload details updates**: whether to upload the reports details updates into the bug tracker.
    - **Upload priority updates**: whether to upload the reports priority updates into the bug tracker.
    - **Upload rewards**: whether to upload the reports rewards into the bug tracker.
    - **Upload status updates**: whether to upload the reports status updates into the bug tracker.
    - **Recreate missing issues**: whether to recreate issues that were created by a previous synchronization but are not found into the bug tracker anymore.
  - **Feedback options**: options for synchronizing bug trackers issues with Yes We Hack reports.
    - **Download bug trackers comments**: whether to download comments from the bug tracker and put them into the reports.
    - **Issue closed to report AFV**: whether to set the reports status to "Ask for Fix Verification" when the tracker issues are closed.
  - **Bug trackers**: a list of bug trackers keys.

Notes:

- since v2.5.0, the API URL has been changed to `https://api.yeswehack.com`.
- since v2.5.0, legacy options for OAuth authentication and TOTP are not available anymore.

4.3 Command line

The main script `ywh2bt` is used to execute synchronization, validate and test configurations.

Usage: `ywh2bt [command]`.
See `ywh2bt -h` or `ywh2bt [command] -h` for detailed help.

Where `[command]` can be:

- `validate`: validate a configuration file (mandatory fields, data types, ...)
- `test`: test the connection to the trackers
- `convert`: convert a configuration file into another format

- `synchronize` (alias `sync`): synchronize trackers with YesWeHack reports. It should be run everytime you want to synchronize (e.g. schedule execution in a crontab).
- `schema`: dump a schema of the structure of the configuration files in Json-Schema, markdown or plaintext

4.3.1 Supported configuration file formats

- `yaml` (legacy)
- `json`

Use `ywh2bt schema -f json` to obtain a Json-Schema describing the format. Both `yaml` and `json` configuration files should conform to the schema.

4.3.2 Examples

Validation:

```
$ ywh2bt validate \
    --config-file=my-config.yml \
    --config-format=yaml && echo OK
OK
```

Conversion (`yaml` to `json`):

```
$ ywh2bt convert \
    --config-file=my-config.yml \
    --config-format=yaml \
    --destination-file=/tmp/cfg.json \
    --destination-format=json
```

Synchronization:

```
$ ywh2bt synchronize --config-file=my-config.json --config-format=json
[2020-12-21 10:20:58.881315] Starting synchronization:
[2020-12-21 10:20:58.881608]   Processing YesWeHack "yeswehack1":
[2020-12-21 10:20:58.881627]     Fetching reports for program "my-program": 2
    ↪ report(s)
[2020-12-21 10:21:08.341460]     Processing report #123 (CVE-2017-11882 on
    ↪ program) with "my-github": https://github.com/user/project/issues/420
    ↪ (untouched ; 0 comment(s) added) | tracking status unchanged
[2020-12-21 10:21:09.656178]     Processing report #96 (I found a bug) with "
    ↪ my-github": https://github.com/user/project/issues/987 (created ; 3
    ↪ comment(s) added) | tracking status updated
[2020-12-21 10:21:10.773688] Synchronization done.
```

Synchronization through docker:

```
$ docker run \
    --volume /home/dave/config/my-config.json:/ywh2bt/config/my-config.json \
    --network host \
    yeswehack/ywh2bugtracker:latest \
    sync --config-file=/ywh2bt/config/my-config.json --config-format=json
[2020-12-21 11:20:58.881315] Starting synchronization:
```

```
[2020-12-21 11:20:58.881608]   Processing YesWeHack "yeswehack1":
[2020-12-21 11:20:58.881627]     Fetching reports for program "my-program": 2
    ↪ report(s)
[2020-12-21 11:21:08.341460]     Processing report #123 (CVE-2017-11882 on
    ↪ program) with "my-github": https://github.com/user/project/issues/420
    ↪ (untouched ; 0 comment(s) added) | tracking status unchanged
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    ↪ comment(s) added) | tracking status updated
[2020-12-21 11:21:10.773688] Synchronization done.
```

/ 5 Known limitations and specific behaviours

5.1 Reports manual tracking

Manually tracked reports (i.e., where a manager directly set the Tracking status to "tracked") are also integrated in the tracker the way they are when a manager set "Ask for integration".

5.2 Multiple bug trackers per program

Though possible, syncing a program to multiple trackers is not recommended since it may result in unattended behaviours and inconsistencies. Indeed, reports status and bug trackers status are unique and cannot reflect the specific state of each linked bug tracker.

5.3 Changes of options between synchronizations

Be careful when changing synchronization/feedback options for a program that has already been synchronized in the past, especially when activating options that were not active before. This could result in synchronized comments appearing in a non-chronological order in the bug tracker issues or in the reports.

5.4 Modifications of comments post synchronization

Modifications of bug tracker comments that happen after a successful synchronization won't be reflected in the report during subsequent synchronizations.

5.5 Bug trackers text size limitations

The bug trackers have a maximum size allowed for the text of the issues or comments. When a platform report or comment size exceeds the maximum size allowed by a tracker, the content is put into a Markdown file which is attached to the issue or comment instead.

Bug tracker	Maximum size allowed
GitHub	65536 bytes
GitLab	1000000 bytes
Jira	32767 bytes
ServiceNow	32767 bytes

5.6 Miscellaneous

- Since v2.5.0, the Yes We Hack platform API URL has been changed to `https://api.yeswehack.com`.
- Since v2.0.0, unlike in previous versions, setting a tracked report back to "Ask for integration" won't create a new issue in the tracker but update the existing one.
- References to a same uploaded attachment in different comments is not supported yet, i.e., if an attachment is referenced (either displayed inline or as a link) in several comments, only first one will be correctly handled.

6 Resources

6.1 Useful links

- Source code on GitHub
- Yes We Hack platform
- Yes We Hack platform changelog
- Yes We Hack blog