

BGmot knows Zabbix

Main principles of operations:

- OpenSource whenever it makes sense
- Automation whenever it is possible
- Zabbix ~~whenever it is...~~ always ok... 99% cases
- We do things properly or don't engage at all
- No solution "out of the box" - not a problem, we can develop

Zabbix is an OpenSource project

ZABBIX

- Released under AGPLv3 license
- Source code is available <https://git.zabbix.com>
- Anybody can view/modify any component of Zabbix

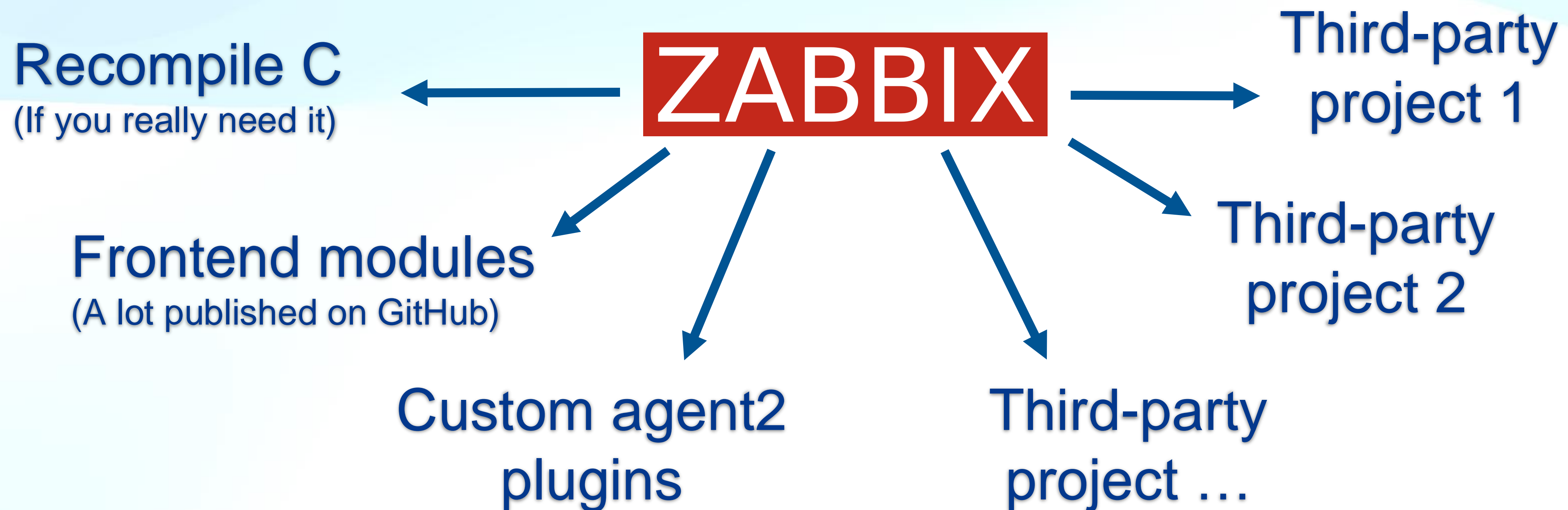
At the same time **Zabbix** is:

- Highly qualified team of developers
- Quality of code: extensive testing / bugs reporting system
- All features available to all (no Enterprise subscription)



What's the benefit of Zabbix being OpenSource?

We can extend Zabbix by implementing what is not available out-of-the box



When two OpenSource projects meet

ZABBIX

+

=

- Automation/Orchestration
- Huge time savings
- Repeatability
- Human errors elimination
- Configuration changes version control
- Monitoring As Code
- Test environment identical to Production
- ... and much more



RED HAT[®]
ANSIBLE[®]

community.zabbix collection



BGmot

<https://bgmot.com>

What is Ansible in general?



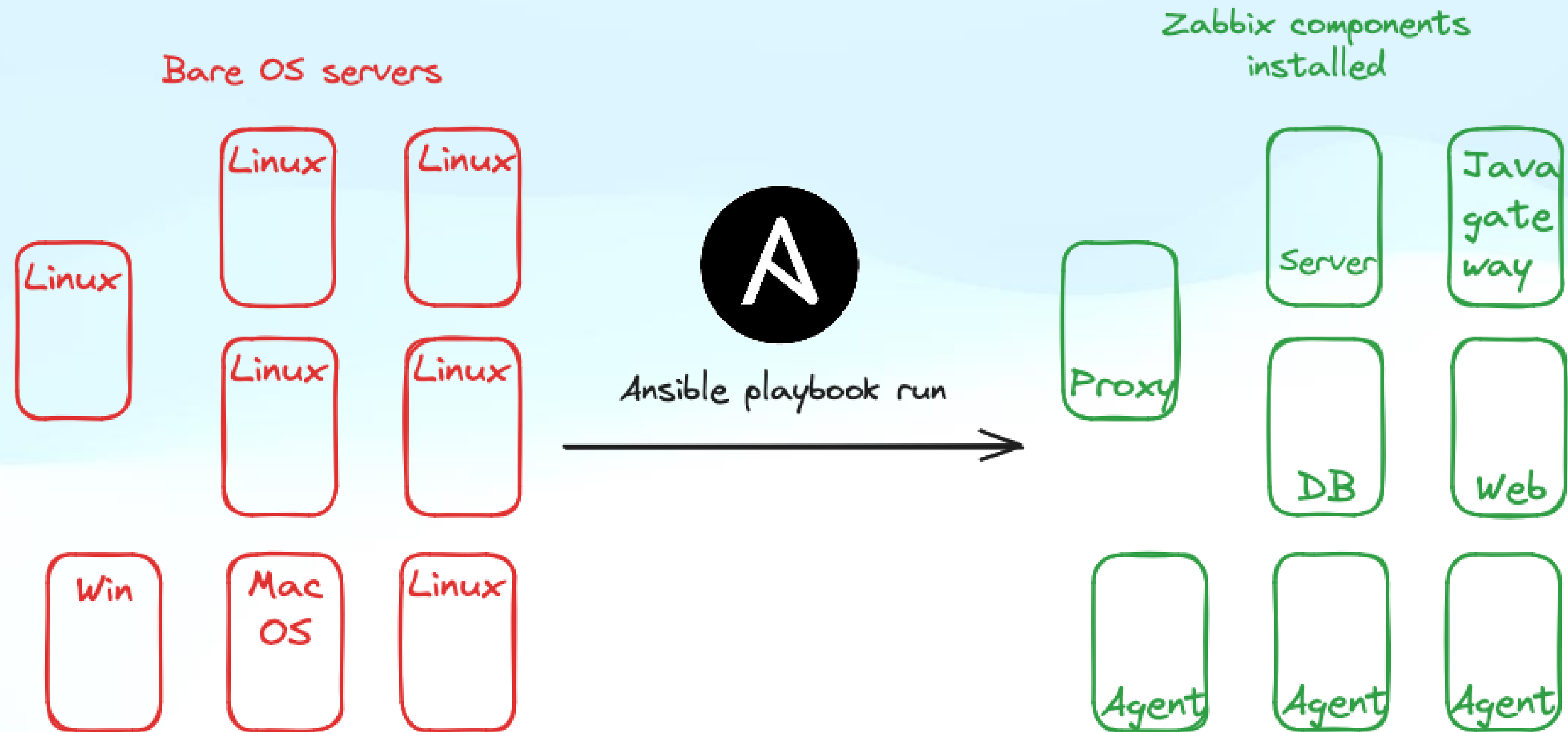
What is community.zabbix collection?

It's literally a collection of Python code that lets you use Ansible to deploy/configure:

- Zabbix components (server, database, agent, web, proxy, java gateway)
- many objects “inside” Zabbix (host/template groups, hosts, templates, user groups, users, discovery rules/action + many more)

Also zabbix_repo plugin let you create Ansible Inventory by pulling data from your existing Zabbix installation

community.zabbix collection: roles



Server/DB/Web/
Proxy/Java gateway:
* Rocky Linux 8/9
* Ubuntu 20/22/24
* Debian 11/12
* OpenSuse 15

DB:
* MySQL
* PostgreSQL

Proxy:
* MySQL
* PostgreSQL
* SQLite3

Web:
* Apache2
* NGINX

Agent
* Rocky Linux 8/9
* Ubuntu 20/22/24
* Debian 11/12
* OpenSuse 15
* MacOS
* Windows



community.zabbix collection: modules

ZABBIX mac-demo

Hosts ? [Create host](#) [Import](#) Filter

Host groups: [Select](#)

Templates: [Select](#)

Name:

DNS:

IP:

Port:

Status:

Monitored by:

Proxy: [Select](#)

Tags:

[Remove](#)

[Add](#)

<input type="checkbox"/>	Name ▲	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info	Tags
<input type="checkbox"/>	app01	Items 76	Triggers 26	Graphs 16	Discovery 3	Web	172.105.14.12:10050		Linux by Zabbix agent	Enabled	ZBX	None		
<input type="checkbox"/>	app02	Items 76	Triggers 26	Graphs 16	Discovery 3	Web	192.46.222.8:10050		Linux by Zabbix agent	Enabled	ZBX	None		
<input type="checkbox"/>	pgdb01	Items 141	Triggers 32	Graphs 16	Discovery 5	Web	170.187.181.68:10050		Linux by Zabbix agent, PostgreSQL by Zabbix agent 2	Enabled	ZBX	None		
<input type="checkbox"/>	web01	Items 72	Triggers 22	Graphs 12	Discovery 5	Web	172.105.14.187:10050		Apache by Zabbix agent, Linux by Zabbix agent	Enabled	ZBX	None		
<input type="checkbox"/>	web02	Items 93	Triggers 23	Graphs 18	Discovery 5	Web	172.105.18.225:10050		Apache by Zabbix agent, Linux by Zabbix agent	Enabled	ZBX	None		
<input type="checkbox"/>	zabbix-db01	Items 141	Triggers 32	Graphs 16	Discovery 5	Web	172.105.6.36:10050		Linux by Zabbix agent, PostgreSQL by Zabbix agent 2	Enabled	ZBX	None		
<input type="checkbox"/>	zabbix-server01	Items 105	Triggers 59	Graphs 19	Discovery 5	Web	172.105.6.108:10050		Linux by Zabbix agent, My cool template, Zabbix server health	Enabled	ZBX	None		
<input type="checkbox"/>	zabbix-web01	Items 78	Triggers 26	Graphs 13	Discovery 5	Web	172.105.14.149:10050		Apache by Zabbix agent, Linux by Zabbix agent	Enabled	ZBX	None		

0 selected

Displaying 8 of 8 found



Ansible collection vs pure REST API

```
- name: "Add/update host"
  delegate_to: myzabbix.mycompany.com
  community.zabbix.zabbix_host:
    host_name: server1
```

Collection:

- more 'human-like' language
- any number of objects (hosts, users etc) managed by the same code in one run
- easy switch between different environments (Prod, Dev) by using different Ansible inventories
- Natural version control (e.g. git) thus "Monitoring as Code" approach

```
host_groups:
  - Linux servers
```

```
link_templates:
```

```
- Linux by Zabbix agent
```

```
interfaces:
```

```
- type: agent
```

```
main: 1
```

```
useip: 1
```

```
ip: 1.2.3.4
```

```
inventory_mode: manual
```

```
inventory_zabbix:
```

```
location_lat: 49.2606052
```

```
location_lon: -123.2485741
```

```
state: present
```

```
{
  "jsonrpc": "2.0",
  "method": {
    "jsonrpc": "2.0",
    "method": "host.get" or "host.create" or "host.update"
  },
  "interfaces": [
    {
      "type": 1,
      "main": 1,
      "useip": 1,
      "ip": "1.2.3.4"
    }
  ],
  "groups": [
    {
      "groupid": "50"
    }
  ],
  "templates": [
    {
      "templateid": "20045"
    }
  ],
  "inventory_mode": 0,
  "inventory": {
    "location_lat": "49.2606052",
    "location_lon": "-123.2485741"
  }
}
"id": 1
}
```

REST API:

- Much more coding
- Many more things to take care about (e.g. getting object IDs having only names)
- Knowledge transfer - much more needs to be documented
- If you decide to write large enough project flexible enough to cover different scenarios you'll be effectively re-writing Ansible code



History: who? when? why? what?

- It's believed that original authors of modules that established roots for Zabbix in Ansible were these guys from Epic Games, Inc. (year 2013?):
 - Cove (@cove)
 - Tony Minfei Ding (!UNKNOWN)
 - Harrison Gu (@harrisongu)
 - Eike Frost (@eikef)
- The first version of collection was released on Fri Apr 24, 2020 by:
 - John Barker
 - sky-joker
 - Dusan Matejka
 - Werner Dijkerman
- First version included:
 - no roles to install/configure Zabbix components
 - 18 modules to create/manage Zabbix objects (hosts, users etc)



History: current state

Thanks for trying out the new and improved Galaxy, please share your feedback on forum.ansible.com.

Namespaces > community > zabbix

community.zabbix

Version 3.0.3 updated a day ago (latest) Last updated a day ago

4.8 7,102,106 Downloads

Install Documentation Contents

Community score 4.8 / 5

Issue tracker Repo

- Quite popular in Zabbix community (over 7 millions downloads)
- 5 roles to install/configure server, agent(2), web, proxy, JavaGateway
- 42 modules to create/manage hosts, host groups, templates, actions etc.
- “Approved” by RedHat and comes with default Ansible installation

History: life is going on

- **John Barker (USA)**
part of the Community Engineering Team at Red Hat
- **Dušan Matejka (Slovakia)**
does DevOps engineering for small to medium size businesses. Everything that needs to be done on infrastructure, but also some more serious python development alongside it.
- **Werner Dijkerman (Netherlands)**
currently working as a technical application engineer at the Dutch ministry of infrastructure, Watermanagement. Making sure that the Netherlands will not be flooded and stays dry.



History: current state - Zabbix is GLOBAL

- **Troy Ward (USA)**
a systems engineer. Recently was running a US Department of Defense contract focused on cyber security and recently moved over to Splunk.
Never actually used Zabbix but loves Ansible!
- **Erik Berg (Norway)**
Senior engineer at the University of Oslo.
- **Masaru Onodera (Japan)**
develops and monitors a cloud infrastructure which consists of multiple regions.
- **Evgeny Yurchenko (Canada)**
Founder/Tech lead at BGmot. Loves Zabbix and Ansible.

Why on earth???

- You start using collection because it just does make sense to automate and it helps in your day-to-day work
- You find a bug or a missing feature you badly need
- You fix/change/add code to satisfy your needs
- You have not even noticed but you are already married -/
- You do it because you want to do it

Nobody ever earned a cent off this project

Automated Testing: code quality

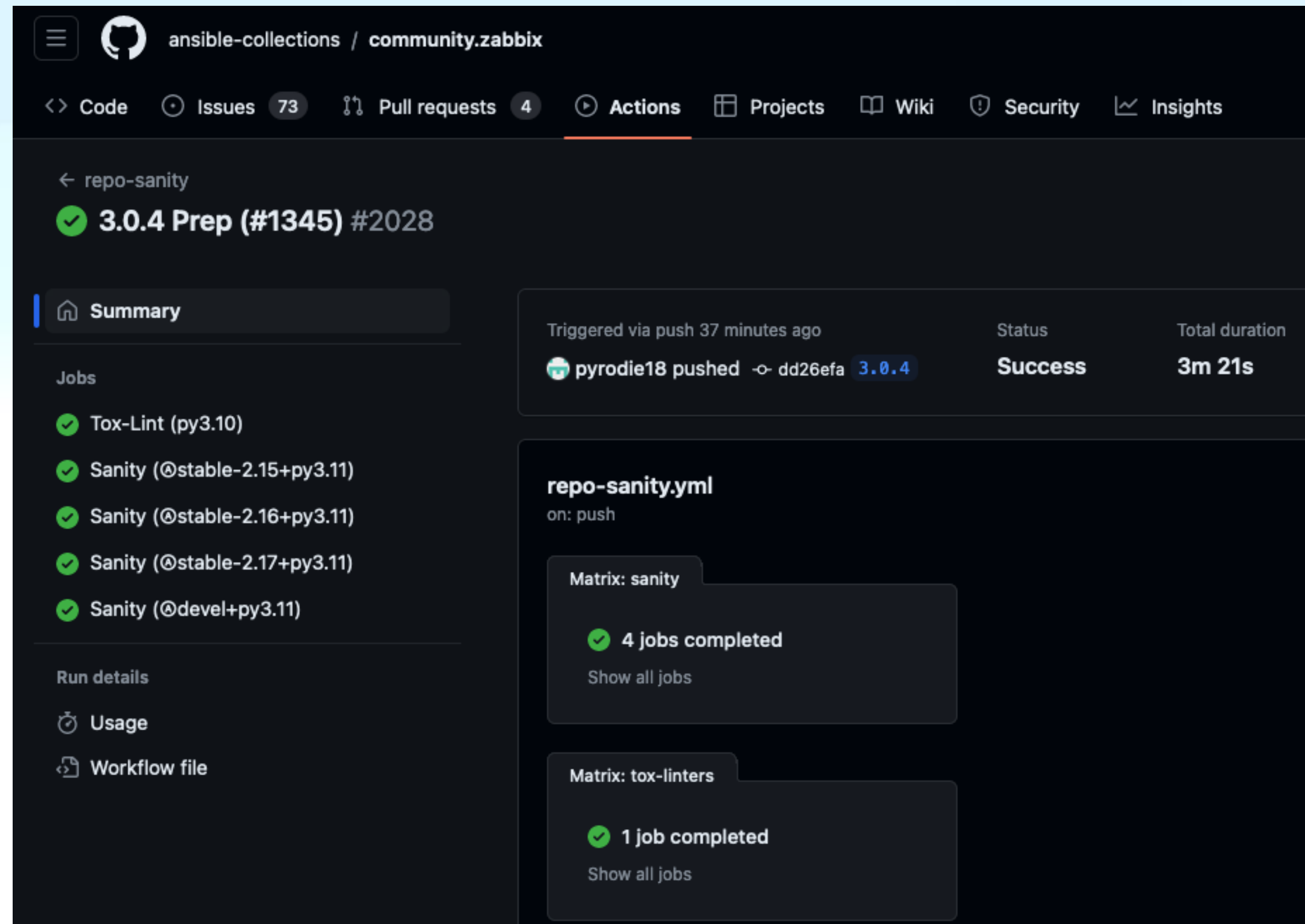
- Fully automated. Happens on:
 - every push to your forked repository
 - every pull request in main repository
- Every role (to deploy/configure Zabbix server, agent etc) runs against:
 - Zabbix 6.0, 6.4 and 7.0
 - Rocky Linux 8/9, Ubuntu 20/22/24, Debian 11/12, openSuse Leap 15
- Every module (objects in Zabbix like user, host etc) runs against:
 - Zabbix 6.0, 6.4 and 7.0
 - Python 3.9, 3.10, 3.11 and 3.12
 - Ansible 2.15, 2.16, 2.17 and devel



Automated Testing: sanity

“Sanity” tests ensure all the code correct and satisfies Python, YAML and Ansible “best practices”.

Documentation section is checked for being consumable by Ansible and for all **documented** parameters **match** to what’s really used in module’s **code**.



The screenshot shows a GitHub Actions workflow run for the repository 'ansible-collections / community.zabbix'. The workflow is named 'repo-sanity' and is currently running '3.0.4 Prep (#1345) #2028'. The run was triggered via a push 37 minutes ago by user 'pyrodie18' and has a status of 'Success' with a total duration of '3m 21s'. The workflow consists of several jobs, all of which are completed successfully:

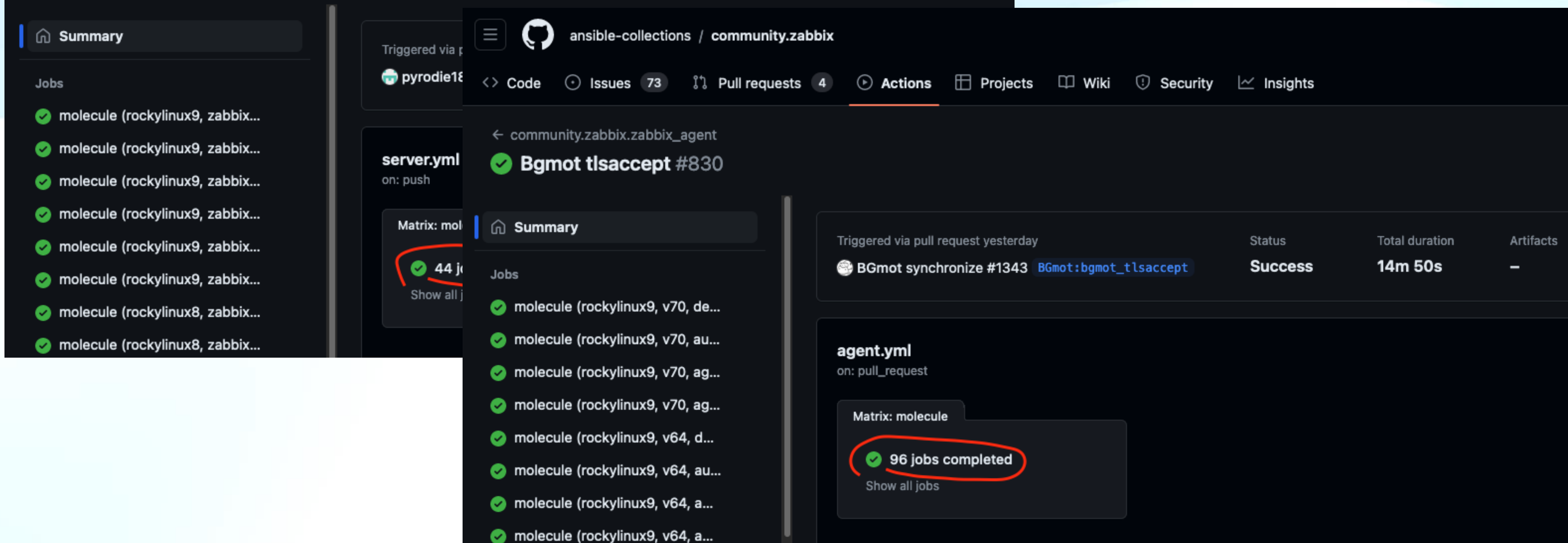
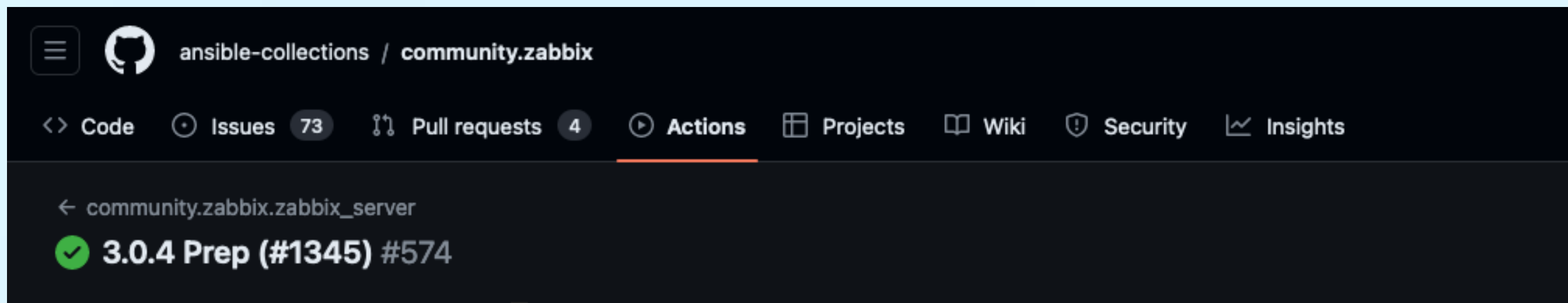
- Tox-Lint (py3.10)
- Sanity (@stable-2.15+py3.11)
- Sanity (@stable-2.16+py3.11)
- Sanity (@stable-2.17+py3.11)
- Sanity (@devel+py3.11)

The workflow file 'repo-sanity.yml' is shown to be triggered on a push. The matrix 'sanity' shows that 4 jobs were completed, and the matrix 'tox-linters' shows that 1 job was completed.



Automated Testing: roles

Every test is running in its own container simulating real life deployment



Automated Testing: modules

For every test job a containerized Zabbix is brought up and we create/modify/delete all the objects (hosts, users, templates etc) comparing results with what we expect

The screenshot shows a GitHub Actions workflow for the community.zabbix repository. The workflow is named "3.0.4 Prep (#1345) #774" and is currently in a "Success" state. It was triggered via a push 47 minutes ago by user pyrodie18. The total duration of the workflow is 35m 4s. The workflow is defined in the file "plugins-integration.yml" and is triggered on a push. The workflow matrix is "integration" and shows that 33 jobs were completed successfully. A red circle highlights the "33 jobs completed" status in the matrix summary.

ansible-collections / community.zabbix

<> Code Issues 73 Pull requests 4 Actions Projects Wiki Security Insights

< plugins-integration

3.0.4 Prep (#1345) #774

Summary

Jobs

- ✓ I (6.0 @stable-2.15+py3.9)
- ✓ I (6.0 @stable-2.15+py3.10)
- ✓ I (6.0 @stable-2.15+py3.11)
- ✓ I (6.0 @stable-2.16+py3.10)
- ✓ I (6.0 @stable-2.16+py3.11)
- ✓ I (6.0 @stable-2.16+py3.12)
- ✓ I (6.0 @stable-2.17+py3.10)

Triggered via push 47 minutes ago

Status Success Total duration 35m 4s

pyrodie18 pushed -> dd26efa 3.0.4

plugins-integration.yml

on: push

Matrix: integration

✓ 33 jobs completed

Show all jobs

Documentation: codified

https://docs.ansible.com/ansible/latest/collections/community/zabbix/zabbix_action_module.html

Collection Index / Collections in the Community Namespace / Community.Zabbix / community.zabbix.zabbix_action module - Create/Delete/Update Zabbix actions

This is the latest (stable) Ansible community documentation. For Red Hat Ansible Automation Platform subscriptions, see [Life Cycle](#) for version details.

community.zabbix.zabbix_action module - Create/Delete/Update Zabbix actions

GitHub repository

```
11 DOCUMENTATION = """
12 ---
13 module: zabbix_action
14
15 short_description: Create/Delete/Update Zabbix actions
16
17
18 description:
19     - This module allows you to create, modify and delete Zabbix actions.
20
21 author:
22     - Ruben Tsirunyan (@rubentsirunyan)
23     - Ruben Harutyunov (@K-DOT)
24
25 requirements:
26     - "python >= 3.9"
27
28 options:
29     name:
30         type: str
31         description:
32             - Name of the action
33         required: true
```

Requirements

The below requirements are needed on the host that executes this module.

- python >= 3.9

name	Name of the action
string / required	



Documentation: validation

https://docs.ansible.com/ansible/latest/collections/community/zabbix/zabbix_action_module.html

GitHub repository

```
34     event_source:
35         type: str
36         description:
37             - Type of events that the action will handle.
38             - Required when C(state=present).
39         required: false
40         choices: ["trigger", "discovery", "auto_registration", "internal"]
```

<code>event_source</code> string	Type of events that the action will handle. Required when <code>state=present</code> . Choices: <ul style="list-style-type: none">"trigger""discovery""auto_registration""internal"
-------------------------------------	--

Must match

```
1908 def main():
1909     """Main ansible module function
1910     """
1911
1912     argument_spec = zabbix_utils.zabbix_common_argument_spec()
1913     argument_spec.update(dict(
1914         esc_period=dict(type="str", required=False),
1915         name=dict(type="str", required=True),
1916         event_source=dict(type="str", required=False, choices=["trigger", "discovery", "auto_registration", "internal"]),
```



Summary

OpenSource project:

- Code can be (and in most cases is!) of high quality
- Community engagement is a big plus (not a drawback)
- Security is enforced by code openness and community involvement
- Documentation is often better than in expensive paid products
- Done by people who love coding (not just because of money)
- Enterprises should **NOT** be afraid of OpenSource projects

Useful links

- Ansible <https://ansible.readthedocs.io>
- Zabbix collection
 - <https://docs.ansible.com/ansible/latest/collections/community/zabbix/>
 - <https://github.com/ansible-collections/community.zabbix>
 - <https://galaxy.ansible.com/ui/repo/published/community/zabbix/>
- Managing hosts in Zabbix using Ansible
 - https://www.zabbix.com/events/meetup_20240229
 - https://assets.zabbix.com/files/events/2024/meetup_20240229/Zabbix_Meetup_290224_JY.pdf
- Monitoring as Code at BGmot's YouTube channel
<https://www.youtube.com/@BGmot42>

Thanks for listening

- Join us!
- Enjoy using Zabbix with community.zabbix collection!
- Contribute back!

Zabbix rocks!