

Because I'm



API

Yes, I'm French !

- I am Steve Destivelle
- ZABBIX French Evangelist
- Founder of IZI-IT
- We have this super sexy accent



What is the purpose of my talk

About the ZABBIX API, but

- Not a workshop
- Not very detailed
- Just to show the potential
- IT people are so overwhelmed that they need to move fast



What is an API ?

*An **A**pplication
Programming **I**nterface*

Wikipedia

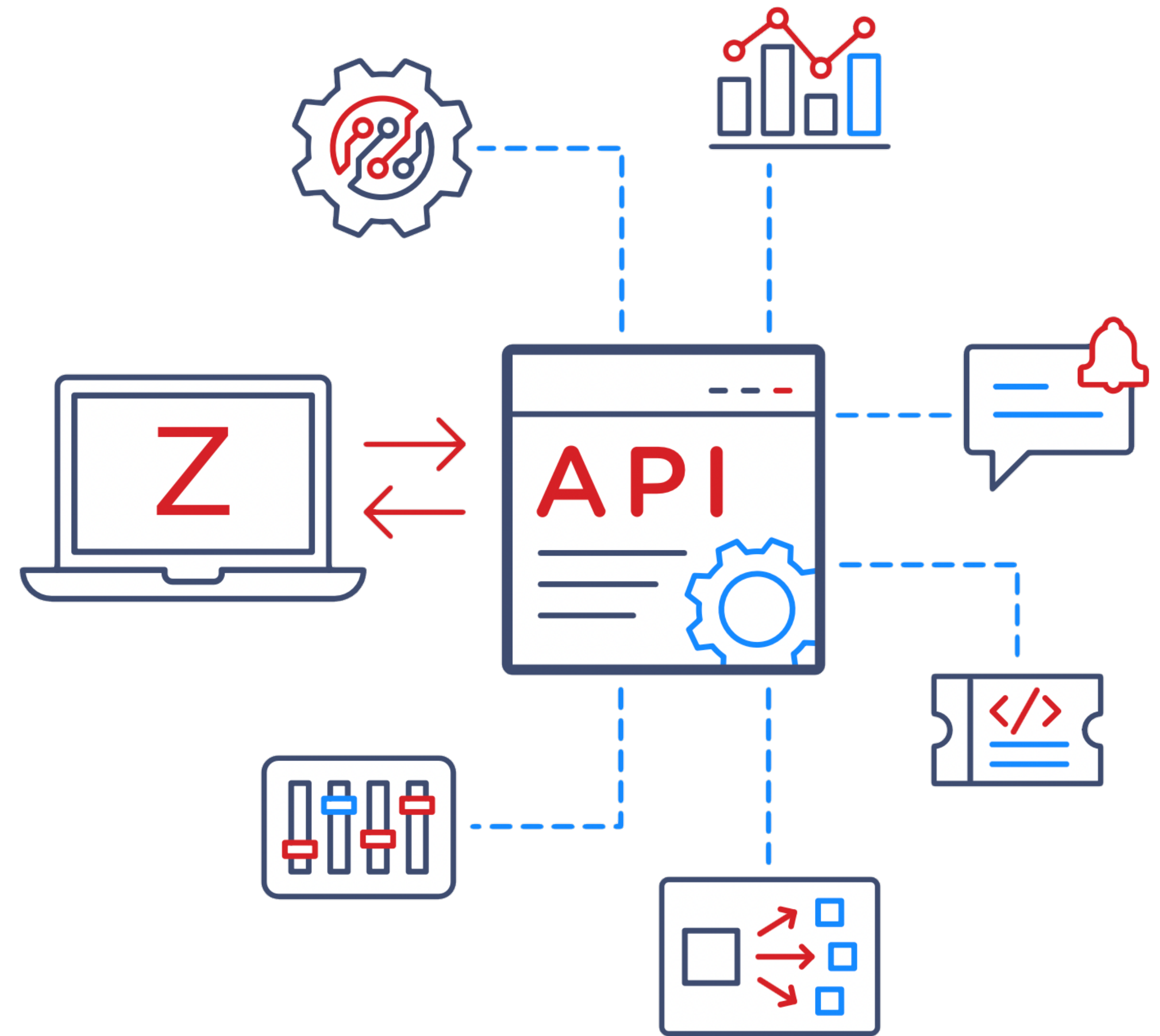


**How many
people in the
room use
ZABBIX**



The fact is that

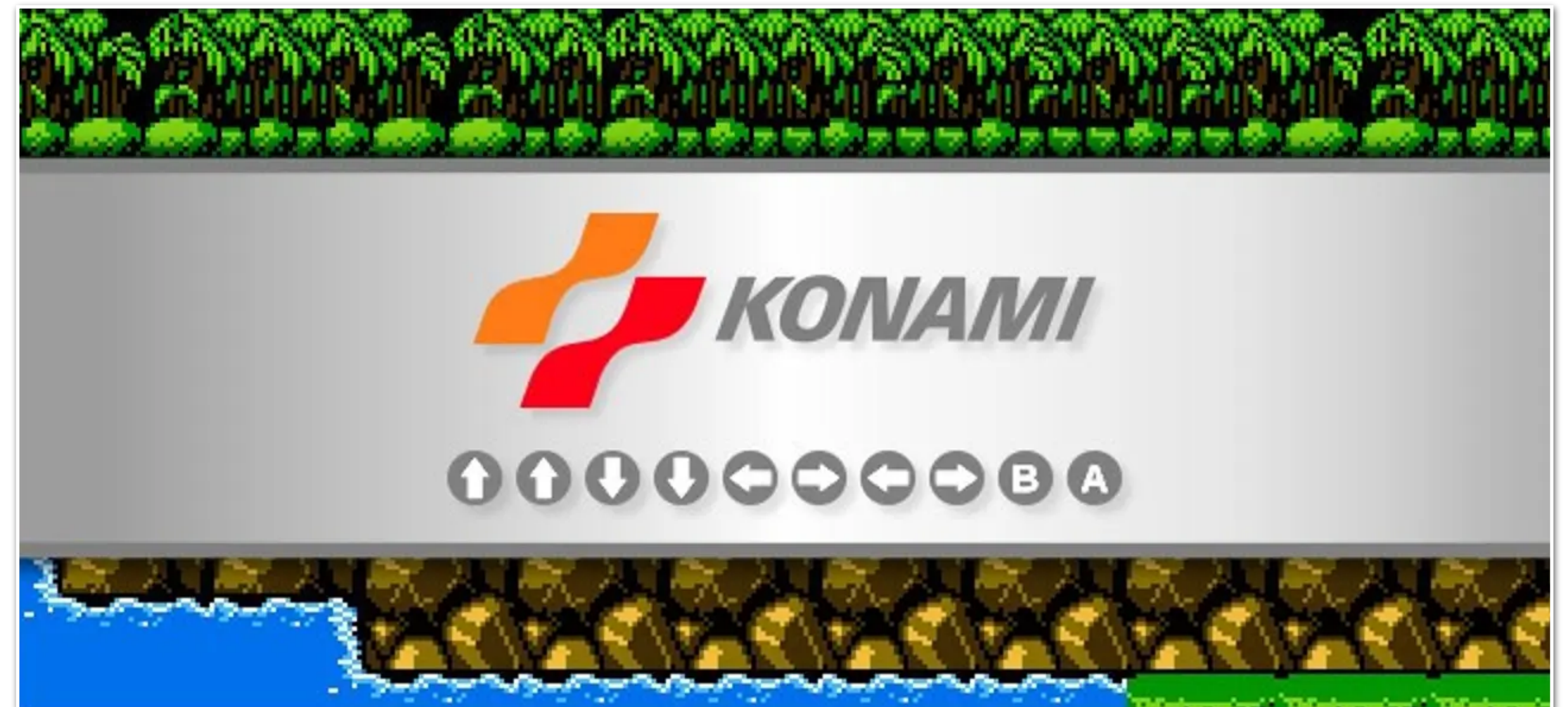
- Even if you didn't notice it, you were using the ZABBIX API since you began to use ZABBIX



The Debug mode

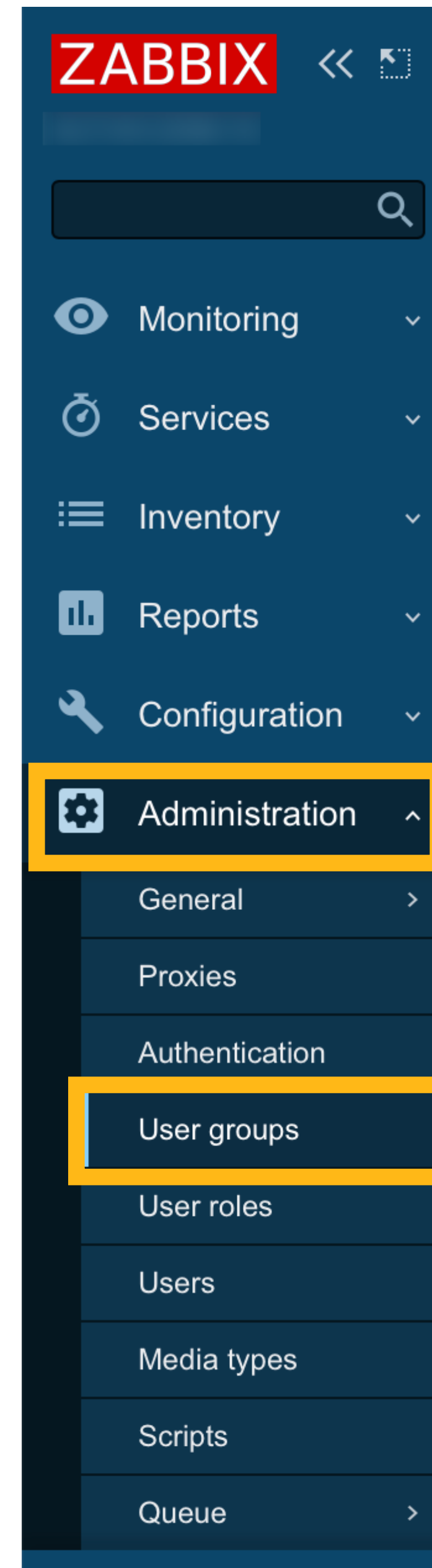
- Through the Frontend
- Activate the “Konami code”

for your **Usergroup** and click on the **Debug** button



Enable the Debug mode

- **Administration** > **User groups**
Menu



Enable the Debug mode

User groups

User group

Template permissions

Host permissions

Problem tag filter

* Group name

Zabbix Admin Internal

Users

Admin (Zabbix Administrator) ×

type here to search

Select

Frontend access

Internal

Enabled

Enabled

Debug mode

☒

Update

Delete

Cancel



Enable the Debug mode

ZABBIX

Monitoring

Services

Inventory

Reports

Configuration

Administration

General

Proxies

Authentication

User groups

User roles

Users

Media types

Scripts

Queue

Support

Integrations

Help

User settings

Sign out

User groups

User group

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Enable the Debug mode

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Integrations

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User settings

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User groups

User groupTemplate permissionsHost permissionsProblem tag filter

Group nameZabbix Admin Internal

UsersAdmin (Zabbix Administrator) X
type here to search

Select

Frontend accessInternal

EnabledEnabled

Debug mode☒

UpdateDeleteCancel

***** Script profiler *****

Total time: 0.045913

Total SQL time: 0.031672

SQL count: 31 (selects: 29 | executes: 17)

Peak memory usage: 2M

Memory limit: 128M

1. role.get [CRoleHelper.php:175]

Parameters:Result:

ArrayArray

(

[output] => Array

(

[0] => roleid

[1] => name

[2] => type

)

[selectRules] => Array

(

[0] => ui

[1] => ui.default_access

[2] => modules

[3] => modules.default_access

[4] => api.access

[5] => api.mode

[6] => api

[7] => actions

[8] => actions.default_access

)

[roleids] => 3

)

(

[0] => Array

(

[roleid] => 3

[name] => Super admin role

[type] => 3

[rules] => Array

(

[ui] => Array

(

[0] => Array

(

[name] => inventory.hosts

[status] => 1

)

[1] => Array

(

[name] => inventory.overview

[status] => 1

)

)

[2] => Array

(

[name] => monitoring.dashboard

[status] => 1

)

)

)

Hide debug

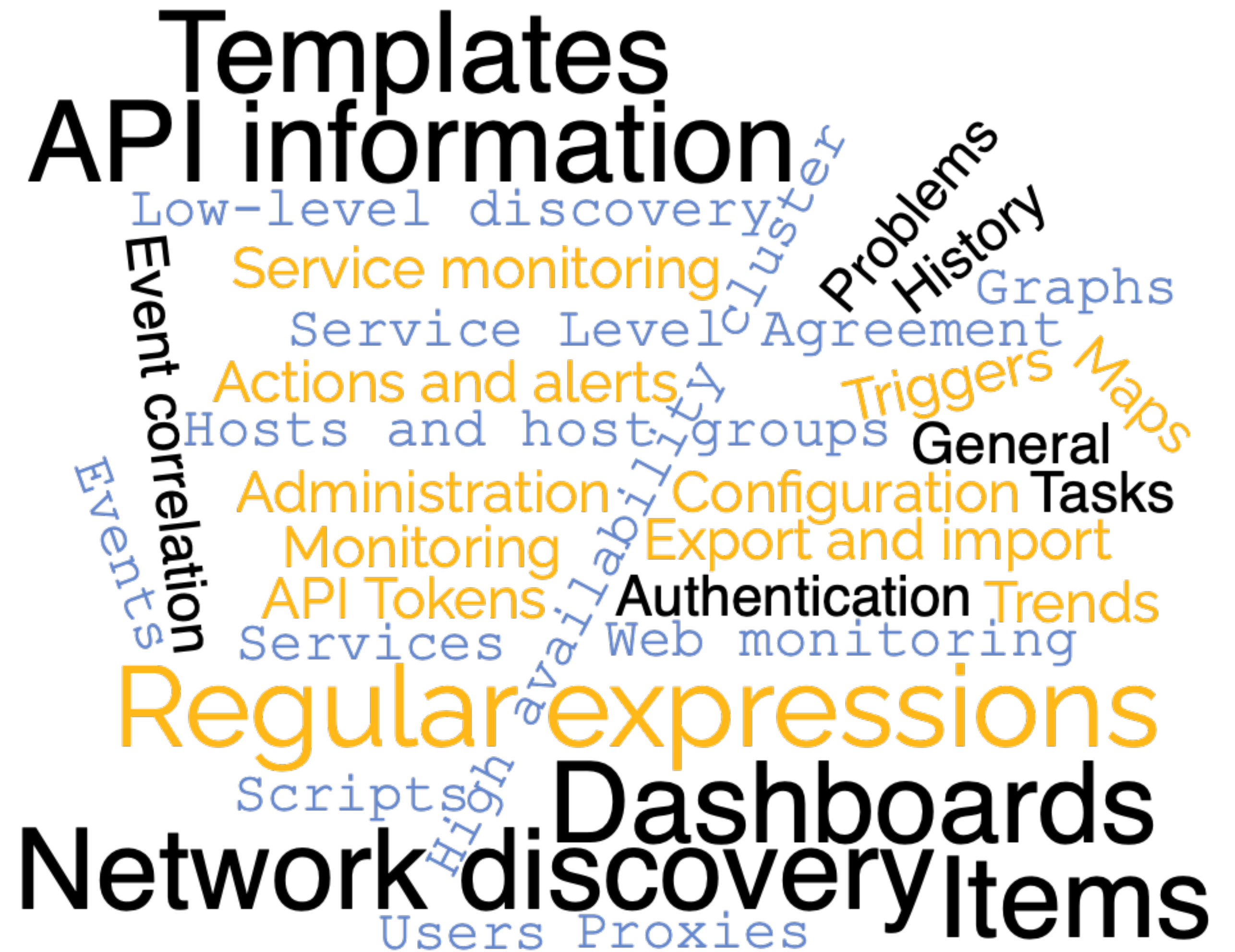


All the methods

- Create
- Update
- Delete
- Get

The complete list =>

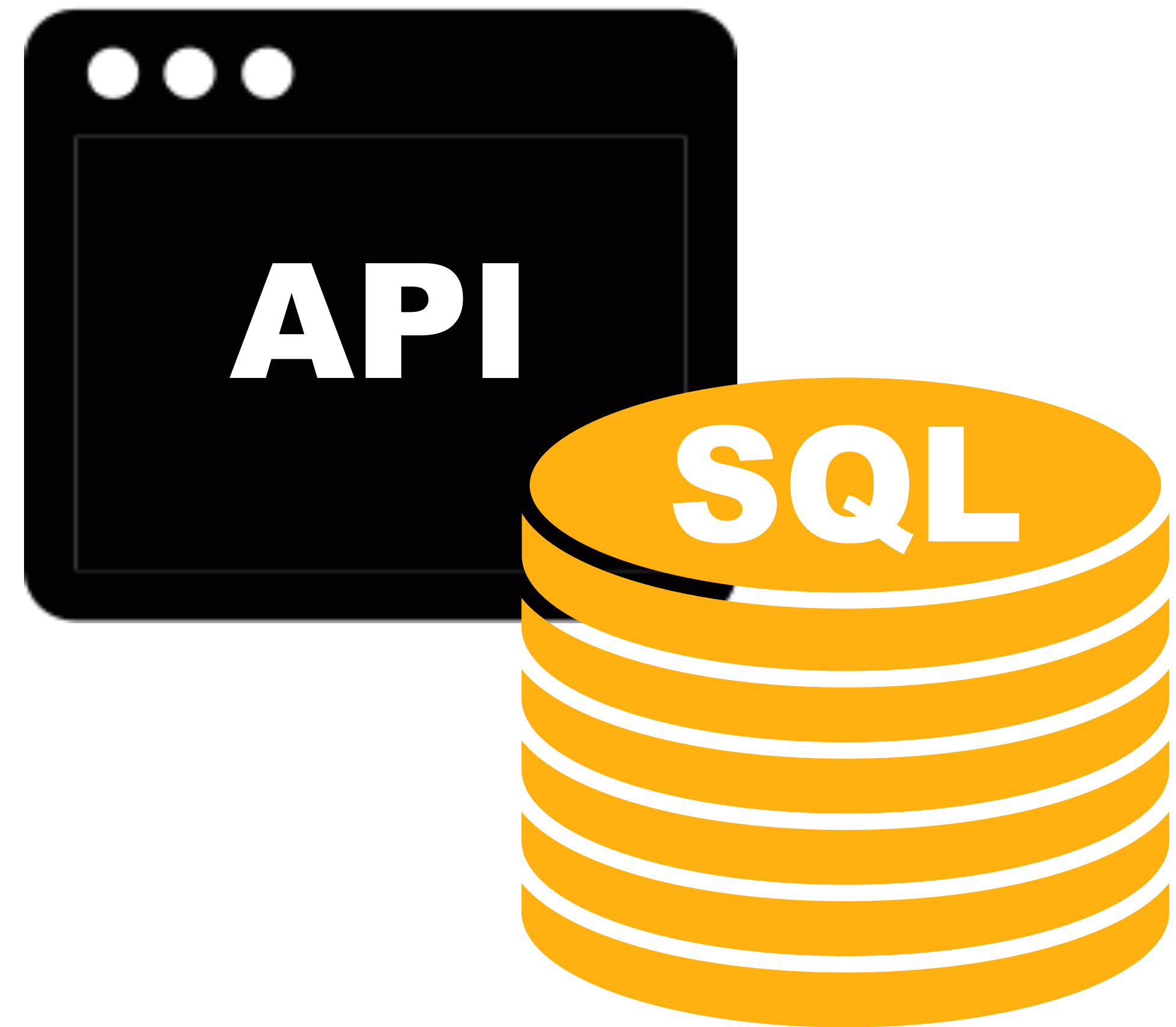
<https://www.zabbix.com/documentation/current/en/manual/api/reference>



Why not using SQL command ?

With the API:

- No major change of the methods
- Rollback in case of error
- Auditable
- Respect of the user permission



Why not using SQL command ?



Because, We need
you to learn
Python



How to secure the API call ?

With Roles

Since **ZABBIX** 5.2

Administration > **User roles** Menu

- Permissions granularity
- UI element restriction
- Restrict the API methods

<https://blog.zabbix.com/user-roles-for-the-enterprise>

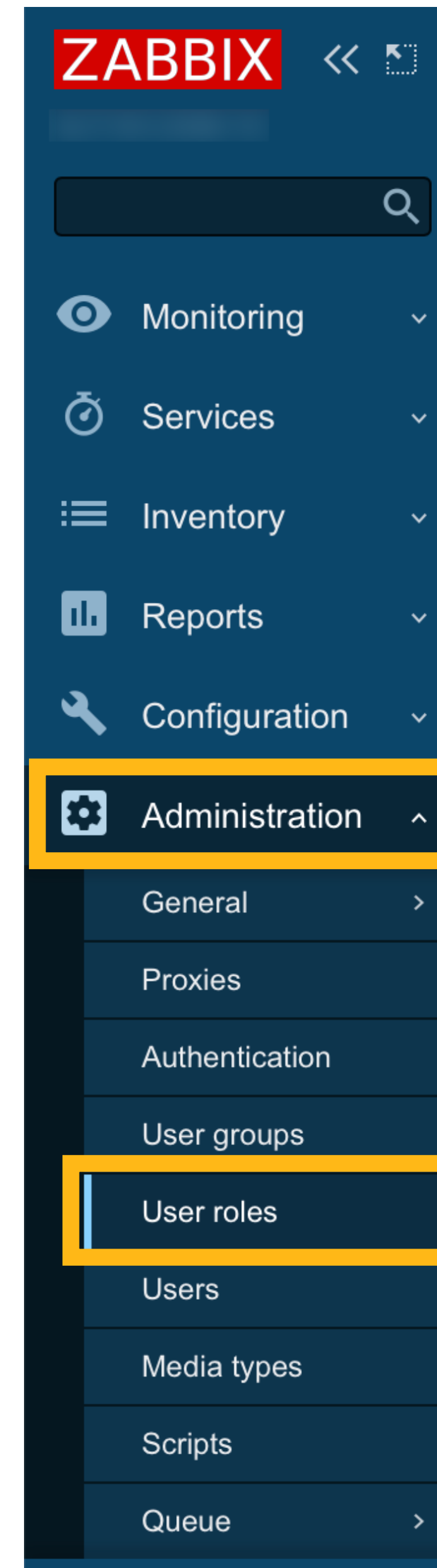


```
{  
  "jsonrpc": "2.0",  
  "error": {  
    "code": -32602,  
    "message": "Invalid params.",  
    "data": "No permissions to call \"host.create\"."  
  },  
  "id": 1  
}
```



Secure with Roles

- **Administration > User Roles**
Menu



- New Role



Secure with Roles

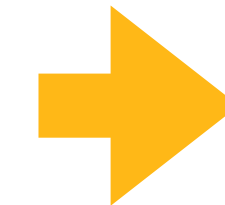
- Define all the methods that this specific role will be allowed or denied

Access to API

Enabled ☒

API methods Allow list Deny list

Select



API methods

☐	Name
☐	action.get
☐	alert.get
☐	configuration.export
☐	configuration.import
☐	configuration.importcompare
☐	correlation.get
☐	dashboard.create
☐	dashboard.delete
☐	dashboard.get
☐	dashboard.update
☐	dcheck.get
☐	dhost.get
☐	discoveryrule.get
☐	drule.get
☐	dservice.get
☐	event.acknowledge

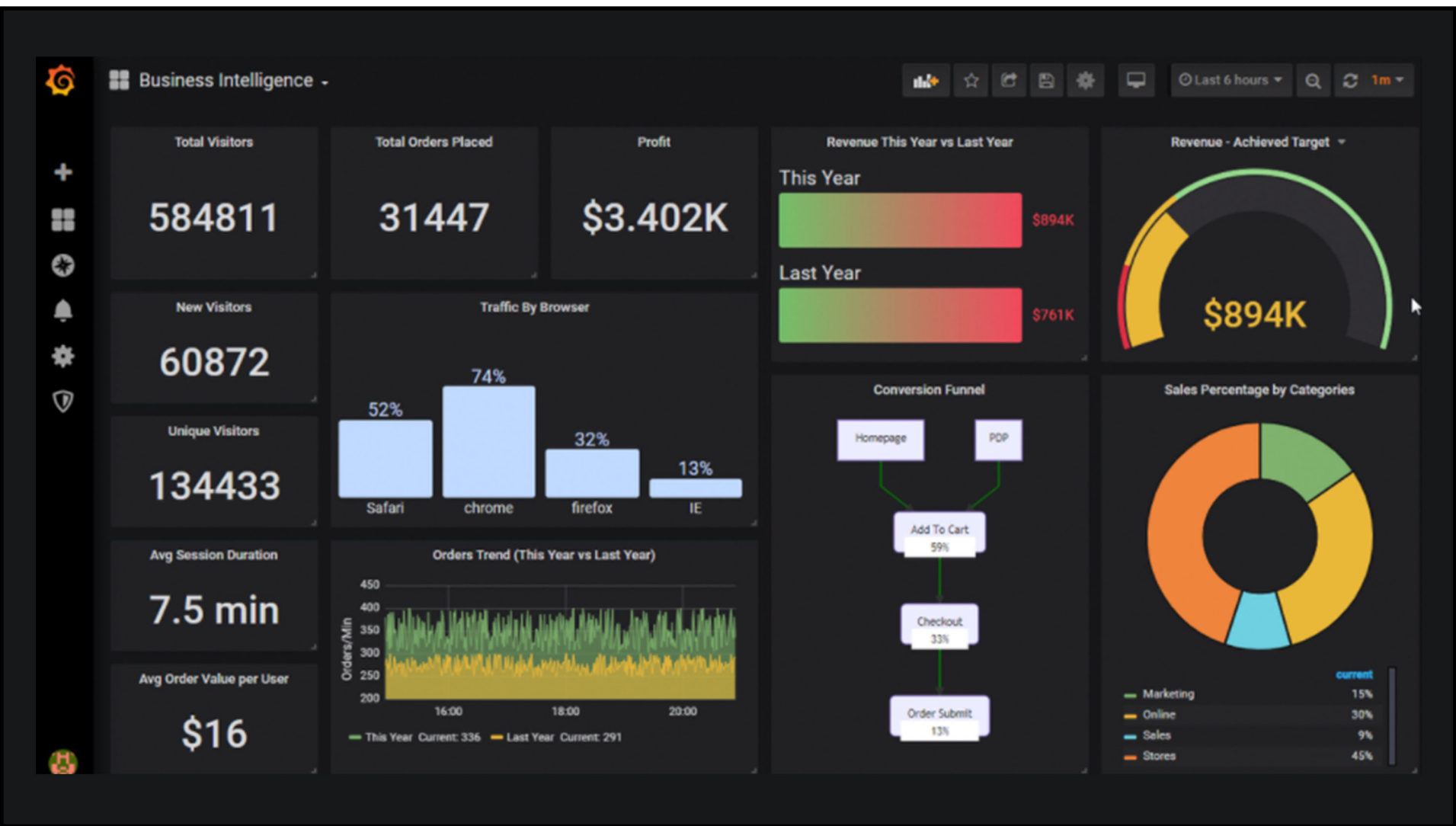
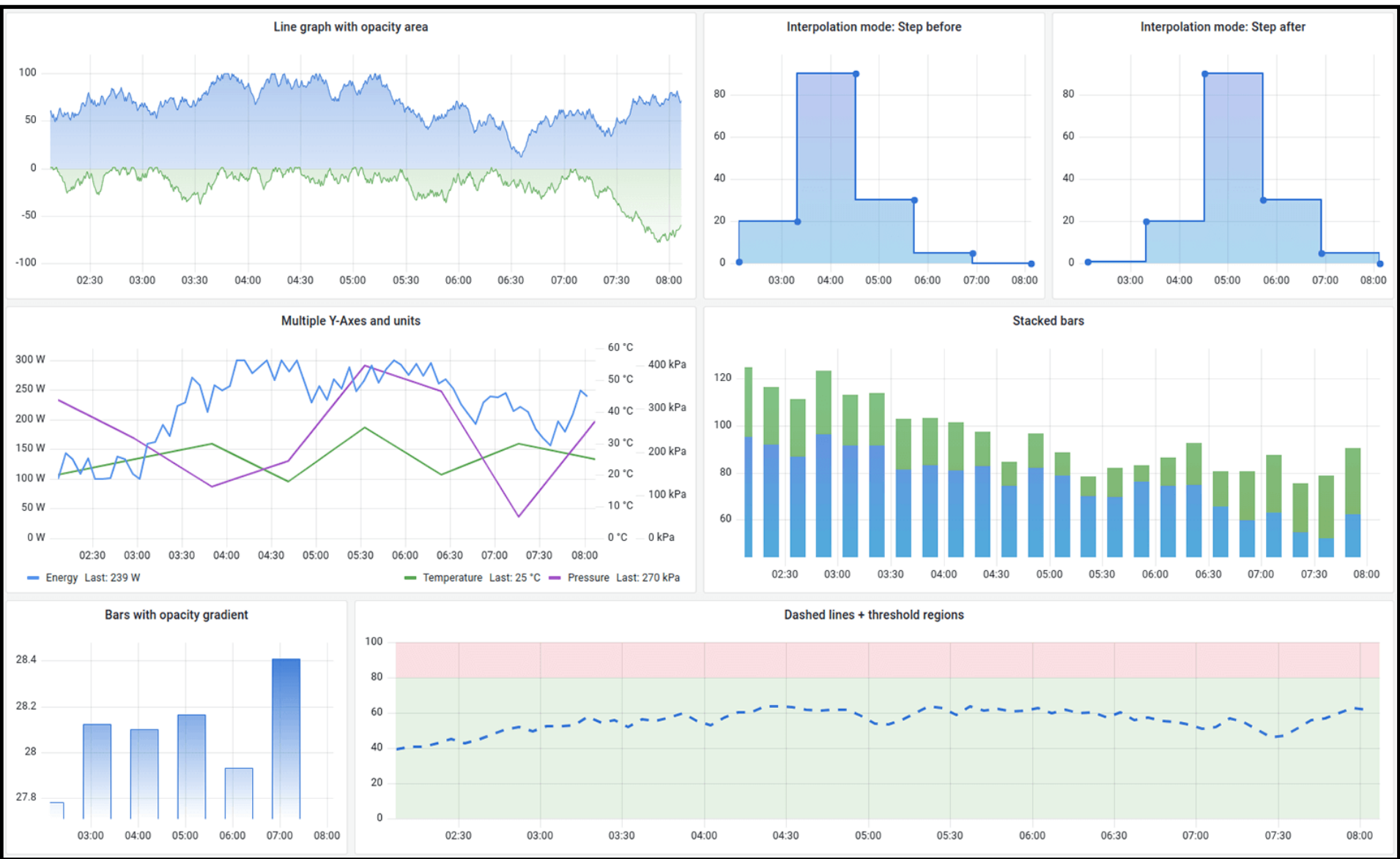


**What could
be done with
ZABBIX API**



Grafana

- Native **ZABBIX** data source
- Fully customizable



Custom interfaces

- Python (Flask)
- Pyzabbix

<https://github.com/lukecyca/pyzabbix>



Zabbix upload tool using the Zabbix API

Choose csv to upload

Choose File no file selected

Choose option

☒ Upload Hosts
☐ Upload Hostgroups
☐ Upload Users

Upload

 Proudly develop by [IZI-IT](#), by [@Steve Destivelle](#).

Search Files & Folders

New Folder Upload Files

> demo1 82 items

NAME	SIZE	LAST MODIFIED	
account	-	-	 
apps	-	-	 
widgets	-	-	 
assets	-	-	 
documentation	-	-	 
layouts	-	-	 

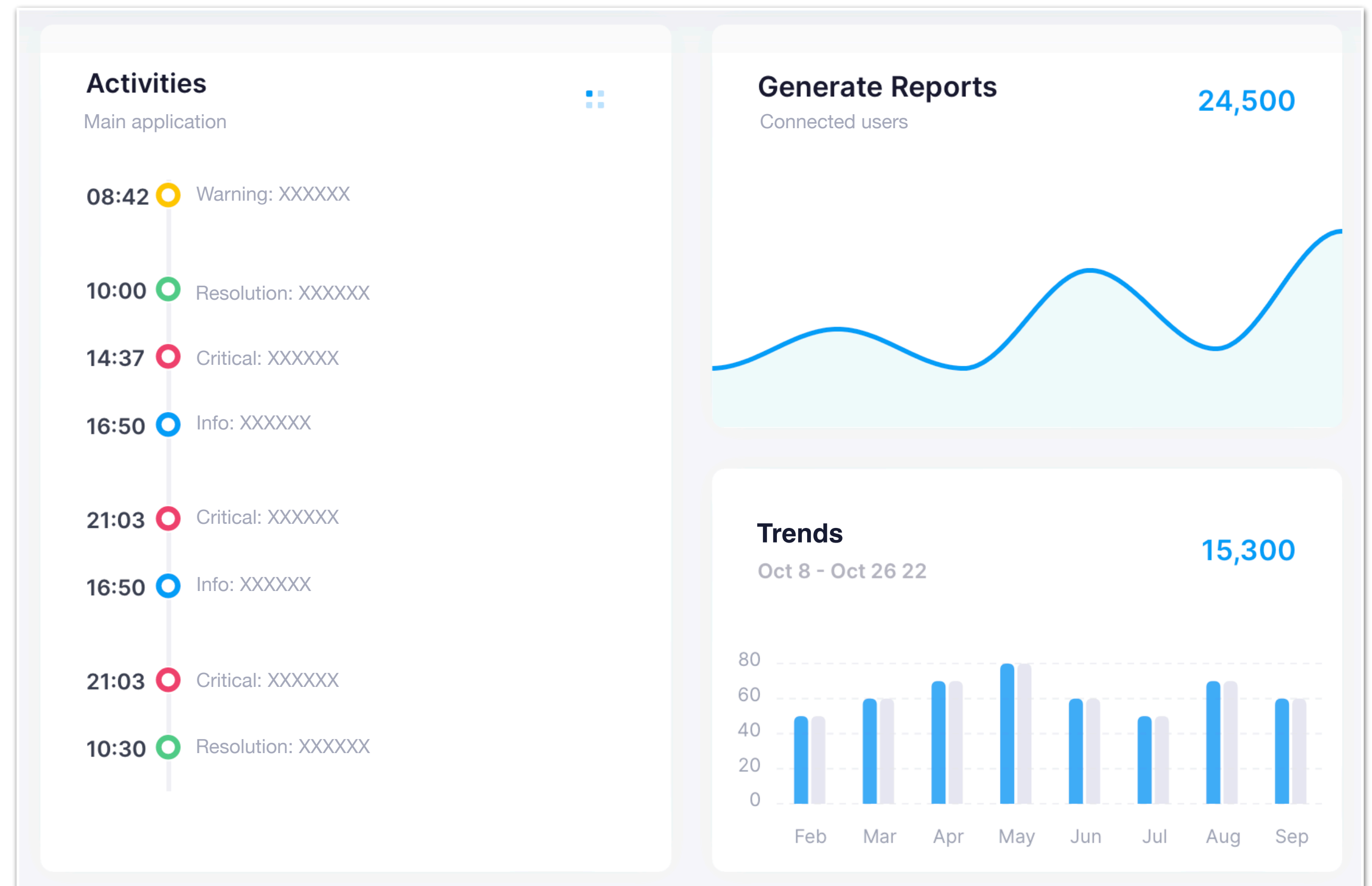
Upload files

Attach files

Max file size is 1MB per file.

Custom reports

- Because it was not possible to do the same with ZABBIX reports
- Extract data with ZABBIX API
- Create custom reports with HTML/CSS



Automation

- To make work easier
 - Add Hosts from CSV files
 - Add Hostgroups
 - Add Users

Zabbix upload tool using the Zabbix API

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Choose File no file selected

Choose option

☒ Upload Hosts
☐ Upload Hostgroups
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Upload

 Proudly develop by [IZI-IT](#), by [@Steve Destivelle](#).

```
zapi.host.create({"host": host_name,
"interfaces": [
    {
        "type": 2,
        "main": 1,
        "useip": 1,
        "ip": ip_address,
        "dns": "",
        "port": "161",
        "bulk": "0",
        "proxy_hostid": proxyid
    }
],
"groups": [
    {
        "groupid": host_groupid
    }
],
"templates": [
    {
        "templateid": template_id
    }
],
"inventory_mode": 1
})
```



Automation

- Create maintenance period only once from ics calendar file

```
{
  <all-day Event 'Vacances de Noël' begin:2021-12-18 end:2022-01-03>
  <all-day Event 'Vacances d'Hiver' begin:2022-02-19 end:2022-03-07>
  <all-day Event 'Vacances de Printemps' begin:2022-04-23 end:2022-05-09>
  <all-day Event 'Pont de l'Ascension' begin:2022-05-26 end:2022-05-28>
  <all-day Event 'Vacances d'Été' begin:2022-07-07 end:2022-09-01>
  <all-day Event 'Vacances d'Été (prérentrée Enseignants )' begin:2022-08-31 end:2022-09-01>
  <all-day Event 'Vacances de la Toussaint' begin:2022-10-22 end:2022-11-07>
  <all-day Event 'Vacances de Noël' begin:2022-12-17 end:2023-01-03>
  <all-day Event 'Vacances d'Hiver' begin:2023-02-18 end:2023-03-06>
  <all-day Event 'Début des Vacances d'Été' 2023-07-08>
  <all-day Event 'Vacances de Printemps' begin:2023-04-22 end:2023-05-09>
  <all-day Event 'Pont de l'Ascension' begin:2023-05-18 end:2023-05-22>
}
```



Migration

Move from:

- BMC Patrol
- HP OV
- Centreon
- Nagios
- Shinken
- DataMiner
- Older ZABBIX

To:



Migration

Custom tool:

- Working on this tool was a lot of work
- Follow the changes in Zabbix API
- Users => Username
- Actions (operations, recovery_operations, update_operations)

ZABBIX

Zabbix migration tool with Zabbix API

Zabbix Source informations

Zabbix URL

Username

Password

- ☒ Export Hostgroups
- ☒ Export Usergroups
- ☒ Export Mediatypes
- ☒ Export Users
- ☒ Export Templates
- ☒ Export Proxies
- ☒ Export Hosts
- ☐ Export Actions - Triggers
- ☐ Export Actions - Auto registration
- ☐ Export Maintenances
- ☐ Export Dashboards
- ☐ Export Authentication
- ☐ Export Maps
- ☐ Export Scripts
- ☐ Export Settings
- ☐ Export Services

Zabbix Destination informations

Zabbix URL

Username

Password

- ☒ Import Hostgroups
- ☒ Import Usergroups
- ☒ Import Mediatypes
- ☒ Import Users
- ☒ Import Templates
- ☒ Import Proxies
- ☒ Import Hosts
- ☐ Import Actions - Triggers
- ☐ Import Actions - Auto registration
- ☐ Import Maintenances
- ☐ Import Dashboards
- ☐ Import Authentication
- ☐ Import Maps
- ☐ Import Scripts
- ☐ Import Settings
- ☐ Import Services

<https://github.com/aldevar/zabbix-db-migration>



Import icons

Easily in ZABBIX

- Based on ZABBIX API
- Select different size of your icon

Publicly available at the end of October 2022

ZABBIX

Zabbix Icons import tool with Zabbix API

Made by IZI-IT

Zabbix URL

Username

Password

no file selected

☒ 24 pixel
☒ 48 pixel
☒ 64 pixel
☒ 96 pixel
☒ 128 pixel



Import icons

Easily in ZABBIX

- Need to install pyzabbix library
- pip install pyzabbix

```
from pyzabbix import ZabbixAPI  
  
import os  
  
import base64
```

Base64 encoded image. The maximum size of the encoded image is 1 MB. Maximum size can be adjusted by changing ZBX_MAX_IMAGE_SIZE constant value.
Supported image formats are: PNG, JPEG, GIF.



Import icons

Easily in ZABBIX

- Specify your ZABBIX URL
- And credential to use

```
zapi = ZabbixAPI("http://zabbix.example.fr")  
zapi.login("Admin", "zabbix")
```



Import icons

Easily in ZABBIX

- Upload the image that you want to convert

```
@app.route('/uploader', methods = ['GET', 'POST'])
def upload_file():

    if request.method == 'POST':

        f = request.files['file']

        f.save(secure_filename(f.filename))
```



Import icons

Easily in ZABBIX

- Test if an image with the same name already exists
- If not, encode the new image to be imported
- Then create the image in ZABBIX

```
img = zapi.image.get(output="name", filter=({"name":filename}))
```

```
imgread = base64.b64encode(open(document, "rb").read())
```

```
img64=str(imgread,'utf-8')
```

```
zapi.image.create({  
    "imagetype": 1,  
    "name": filename,  
    "image": img64  
})
```

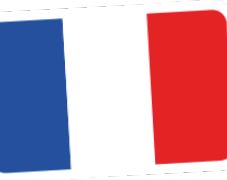
Type of image.

Possible values:

1 - (default) icon;

2 - background image.





IZI-IT

Your monitoring partner

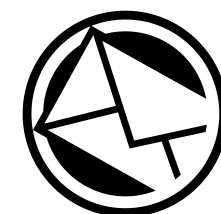


Who we are ?

- Biggest French speaking company specialised in ZABBIX
- Leader of the French speaking community
- Delivers professional services in Saas or on Premise
- Development, training, expertise



<https://gitlab.izi-it.io/community>



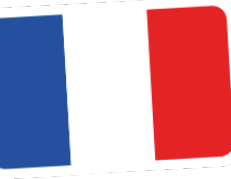
contact@izi-it.io



<https://izi-it.io>

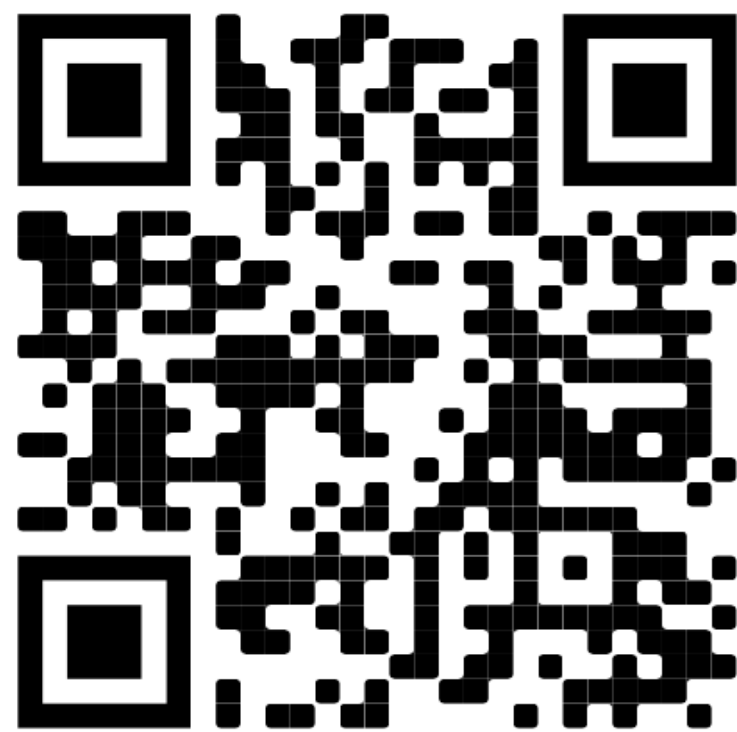


IZI-IT

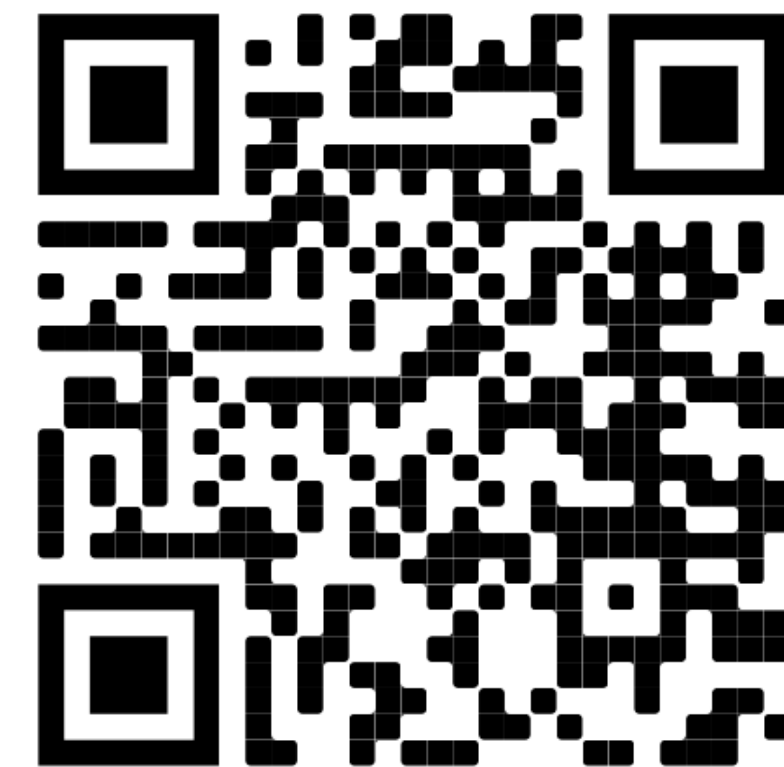


Join our community

The French speaking ZABBIX
Discord community with more than
740 members around the world



The French ZABBIX Forum



Because
I'm **HAPPY** with you

