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## Zabbix

### I) Supervision et Zabbix

La supervision en informatique fait référence à la surveillance et au contrôle des systèmes informatiques, des réseaux, des applications et des services afin d'assurer leur bon fonctionnement, leur performance optimale et leur sécurité. C'est un aspect primordial de la gestion des systèmes d'information et des infrastructures informatiques dans les organisations.

Zabbix est une plateforme open-source de surveillance et de gestion d'infrastructure informatique, conçue pour surveiller et suivre les performances et la disponibilité des ressources réseau, des serveurs, des applications et des services. Elle offre une solution complète pour les entreprises cherchant à maintenir la disponibilité et la performance de leurs systèmes informatiques.

### II) Installation et configuration de Zabbix

## A) Installation du serveur

Nous clonons dans un premier temps la VM template et lui attribuons une nouvelle adresse IP (10.31.177.50 ou 10.31.178.50) et un nouveau nom d'hôte dans le DHCP :

```
dhclient -r && dhclient -v
```

```
# Change le nom d'hôte à l'aide d'une commande  
hostnamectl set-hostname srv-zabbix1 # Ou srv-zabbix2  
  
# Change le nom d'hôte directement depuis le fichier de configuration
```

```
nano /etc/hosts
```

Nous modifions dans le fichier /etc/hosts le nom d'hôte de la machine et nous nous déconnectons pour actualiser l'affichage du nom.

## B) Configuration du serveur

Dans un premier temps, nous devons installer le dépôt officiel de Zabbix. En effet, ce dernier n'est pas par défaut sur les machines Debian et les paquets téléchargeables sont des paquets obsolètes. Nous entrons donc les commandes ci-dessous :

```
wget https://repo.zabbix.com/zabbix/6.4/debian/pool/main/z/zabbix-release/zabbix-release_6.4-1+debian12_all.deb
dpkg -i zabbix-release_6.4-1+debian12_all.deb
```

```
root@zabbix-srv2:~# wget https://repo.zabbix.com/zabbix/6.4/debian/pool/main/z/zabbix-release/zabbix-release_6.4-1+debian12_all.deb
--2023-12-15 10:11:22-- https://repo.zabbix.com/zabbix/6.4/debian/pool/main/z/zabbix-release/zabbix-release_6.4-1+debian12_all.deb
Résolution de repo.zabbix.com (repo.zabbix.com)... 178.128.6.101, 2604:a880:2:d0::2062:d001
Connexion à repo.zabbix.com (repo.zabbix.com)|178.128.6.101|:443... connecté.
requête HTTP transmise, en attente de la réponse... 200 OK
Taille : 3540 (3,5K) [application/octet-stream]
Sauvegarde en : « zabbix-release_6.4-1+debian12_all.deb »

zabbix-release_6.4-1+debian12 100%[=====] 3,46K --.-KB/s   ds 0s
2023-12-15 10:11:23 (94,3 MB/s) - « zabbix-release_6.4-1+debian12_all.deb » sauvegardé [3540/3540]
```

```
root@zabbix-srv2:~# dpkg -i zabbix-release_6.4-1+debian12_all.deb
dpkg: avertissement: dégradation (« downgrade ») de zabbix-release depuis 1:6.4-1+ubuntu22.04 vers 1:6.4-1+debian12
(Lecture de la base de données... 42652 fichiers et répertoires déjà installés.)
Préparation du dépaquetage de zabbix-release_6.4-1+debian12_all.deb ...
Dépaquetage de zabbix-release (1:6.4-1+debian12) sur (1:6.4-1+ubuntu22.04) ...
Paramétrage de zabbix-release (1:6.4-1+debian12) ...
Installation de la nouvelle version du fichier de configuration /etc/apt/sources.list.d/zabbix.list ...
```

Nous installons ensuite les paquets nécessaires à l'utilisation de Zabbix. Notons que Zabbix a besoin d'un serveur web :

```
apt update && apt upgrade
apt install zabbix-server-mysql zabbix-frontend-php zabbix-apache-conf
zabbix-sql-scripts zabbix-agent apache2 php php-mysql php-mysqlnd php-ldap
php-bcmath php-mbstring php-gd php-pdo php-xml libapache2-mod-php
```

L'outil de supervision Zabbix a besoin de fonctionner avec une base de données. Nous utiliserons la base de données présente sur le réseau LAN. Il n'y a donc pas besoin d'ouvrir de flux dans notre pare-feu étant donné que les machines sont sur le même réseau et peuvent communiquer entre elles. Nous créons donc sur notre serveur de bases de données notre nouvelle base de données :

```
mysql -u root -p
```

```
create database zabbix character set utf8mb4 collate utf8mb4_bin;
create user zabbix@'%' identified by 'password';
grant all privileges on zabbix.* to zabbix@'%';
# Cette commande nous permettra d'obtenir les droits pour remplir la
base de données à distance via la commande zcat
set global log_bin_trust_function_creators = 1;
```

```
MariaDB [(none)]> create database zabbix character set utf8mb4 collate utf8mb4_bin;
Query OK, 1 row affected (0,000 sec)

MariaDB [(none)]> create user zabbix@'%' identified by 'password';
Query OK, 0 rows affected (0,001 sec)

MariaDB [(none)]> grant all privileges on zabbix.* to zabbix@'%';
Query OK, 0 rows affected (0,001 sec)

MariaDB [(none)]> set global log_bin_trust_function_creators = 1;
Query OK, 0 rows affected (0,000 sec)
```

Nous vérifions que notre base de données soit créée. Pour l'instant, aucune table n'est créée. Notre base de données est vide :

```
use zabbix
show tables;
```

```
MariaDB [(none)]> use zabbix
Database changed
MariaDB [zabbix]> show tables;
Empty set (0,000 sec)
```

Nous retournons sur le serveur Zabbix et entrons la commande zcat. Cette commande permet de remplir la base de données que nous avons créé précédemment

```
zcat /usr/share/zabbix-sql-scripts/mysql/server.sql.gz | mysql --
```

```
default-character-set=utf8mb4 -h 10.31.178.33 -uzabbix -ppassword  
zabbix
```

Nous retournons sur notre serveur de bases de données pour vérifier que notre nouvelle base soit bien complétée :

```
use zabbix  
show tables
```

```
MariaDB [zabbix]> show tables;  
+-----+  
| Tables_in_zabbix |  
+-----+  
| acknowledges |  
| actions |  
| alerts |  
| valuemap |  
| valuemap_mapping |  
| widget |  
| widget_field |  
+-----+  
186 rows in set (0,001 sec)
```

Nous devons maintenant désactiver la variable globale MariaDB permettant d'obtenir des priviléges spécifiques :

```
set global log_bin_trust_function_creators = 0;
```

```
MariaDB [(none)]> set global log_bin_trust_function_creators = 0;
Query OK, 0 rows affected (0,000 sec)
```

Nous modifions le fichier de configuration zabbix\_server.conf :

```
nano /etc/zabbix/zabbix_server.conf
```

Nous devons vérifier que les éléments suivants soient correctement remplis et les modifier si nécessaire :

- DBHost=10.31.178.33 - DBName=zabbix - DBUser=zabbix - DBPassword=password

```
### Option: DBHost
#      Database host name.
#      If set to localhost, socket is used for MySQL.
#      If set to empty string, socket is used for PostgreSQL.
#      If set to empty string, the Net Service Name connection method is used to connect
#      the TNS_ADMIN environment variable to specify the directory where the tnsnames.ora
#
# Mandatory: no
# Default:
DBHost=10.31.178.33
```

```
### Option: DBName
#      Database name.
#      If the Net Service Name connection method is used -
#      the tnsnames.ora file or set to empty string; also
#      empty string.
#
# Mandatory: yes
# Default:
# DBName=

DBName=zabbix
```

```
### Option: DBUser
#           Database user.
#
# Mandatory: no
# Default:
# DBUser=
```

**DBUser=zabbix**

```
### Option: DBPassword
#           Database password.
#           Comment this line if no password is used.
#
# Mandatory: no
# Default:
DBPassword=password
```

Nous pouvons redémarrer le service zabbix-server :

```
systemctl restart zabbix-server
```

## C) Installation via l'interface web

Nous nous rendons sur l'interface graphique d'installation via le lien <http://10.31.178.50/zabbix> :

Nous laissons l'interface en anglais pour l'installation.



Nous regardons si tous les paquets nécessaires sont installés. Dans le cas contraire, nous les installons avant de démarrer l'installation de Zabbix.

The screenshot shows the 'Check of pre-requisites' step of the Zabbix 6.4 installation. The title 'Check of pre-requisites' is at the top right. On the left is the same vertical navigation menu as the previous screen. The main area contains a table comparing current PHP settings against required values. The table has columns for 'Current value', 'Required', and 'Status'. Most entries show 'OK' in green, except for 'PHP version' which is '8.2.7' and requires '7.4.0'. All other checks (memory\_limit, post\_max\_size, upload\_max\_filesize, max\_execution\_time, max\_input\_time, databases support, bcmath, mbstring, mbstring.func\_overload) are marked as 'OK'. At the bottom right are 'Back' and 'Next step' buttons, and a note at the bottom states 'Licensed under GPL v2'.

	Current value	Required	Status
PHP version	8.2.7	7.4.0	OK
PHP option "memory_limit"	128M	128M	OK
PHP option "post_max_size"	16M	16M	OK
PHP option "upload_max_filesize"	2M	2M	OK
PHP option "max_execution_time"	300	300	OK
PHP option "max_input_time"	300	300	OK
PHP databases support	MySQL		OK
PHP bcmath	on		OK
PHP mbstring	on		OK
PHP option "mbstring.func_overload"	off	off	OK

En cas de problème de langue, suivre les étapes de configuration de langue trouvables après la partie sur l'installation de Zabbix.

Nous entrons les informations pour connecter Zabbix à notre base de données.

The screenshot shows the 'Configure DB connection' step of the Zabbix installation process. On the left, a vertical navigation bar lists: Welcome, Check of pre-requisites, Configure DB connection (which is highlighted in red), Settings, Pre-installation summary, and Install. The main area is titled 'Configure DB connection' and contains the following fields:

- Database type: MySQL (selected from a dropdown menu)
- Database host: 10.31.178.33
- Database port: 3306 (with a note: 0 - use default port)
- Database name: zabbix
- Store credentials in: Plain text (selected from a radio button group) HashiCorp Vault CyberArk Vault
- User: zabbix
- Password: (redacted)
- Database TLS encryption: (checkbox)

At the bottom right are 'Back' and 'Next step' buttons. A note at the bottom states 'Licensed under GPL v2'.

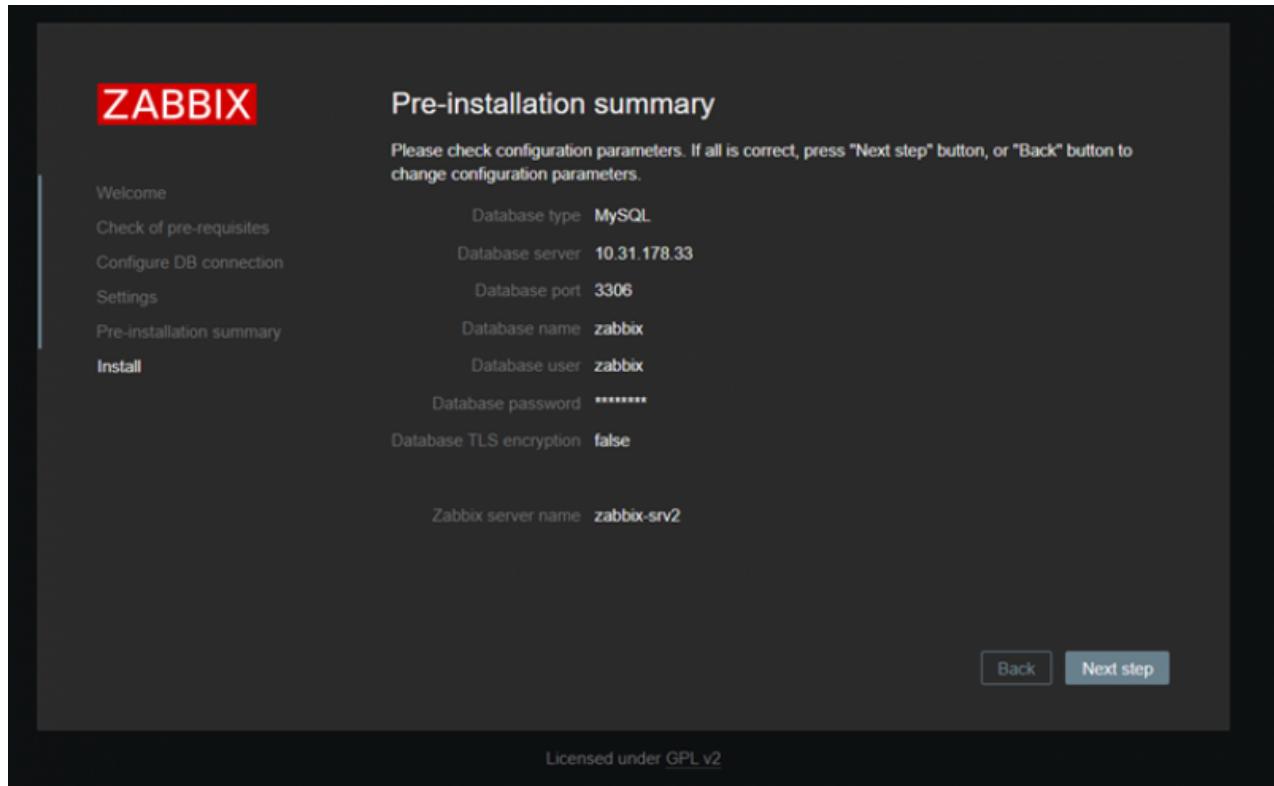
Nous choisissons les paramètres de Zabbix (en activant le thème sombre).

The screenshot shows the 'Settings' step of the Zabbix installation process. The left navigation bar is identical to the previous screen. The main area is titled 'Settings' and contains the following configuration options:

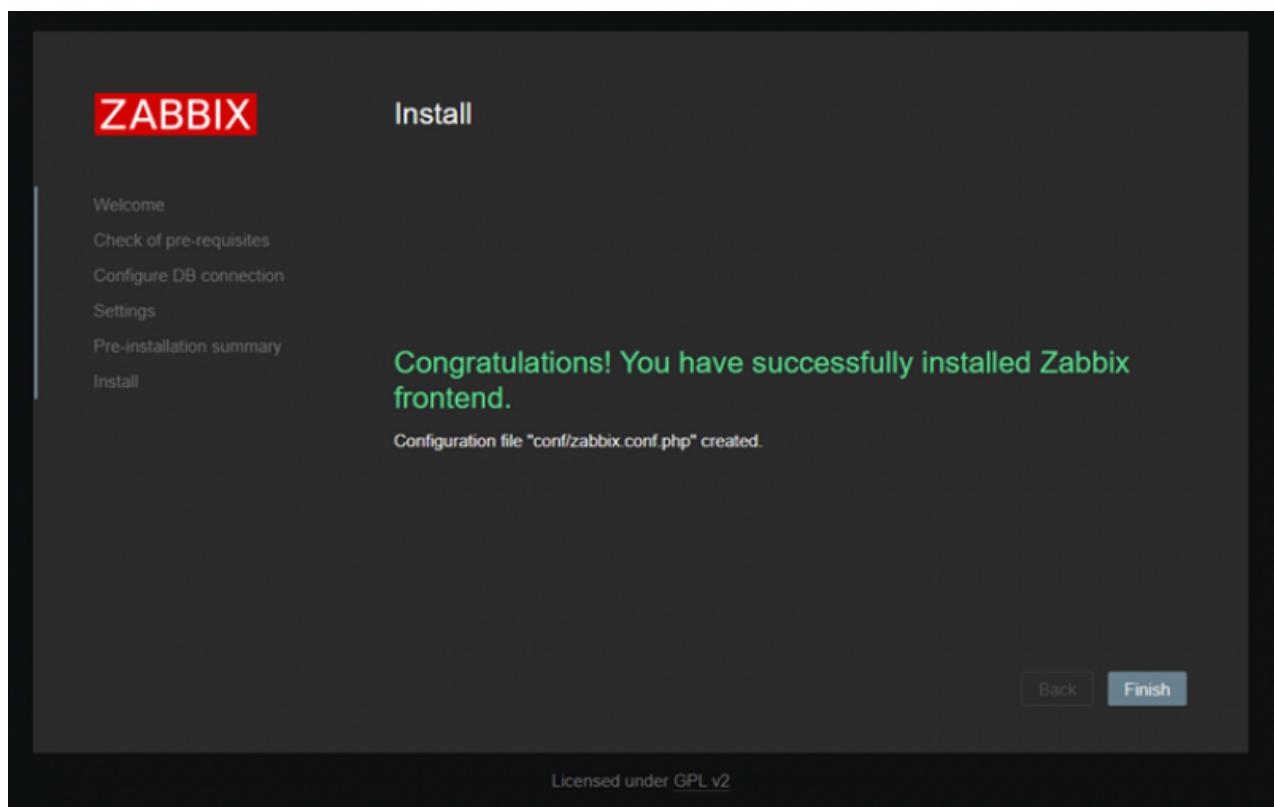
- Zabbix server name: zabbix-srv2
- Default time zone: (UTC+01:00) Europe/Paris (selected from a dropdown menu)
- Default theme: Dark (selected from a dropdown menu)

At the bottom right are 'Back' and 'Next step' buttons. A note at the bottom states 'Licensed under GPL v2'.

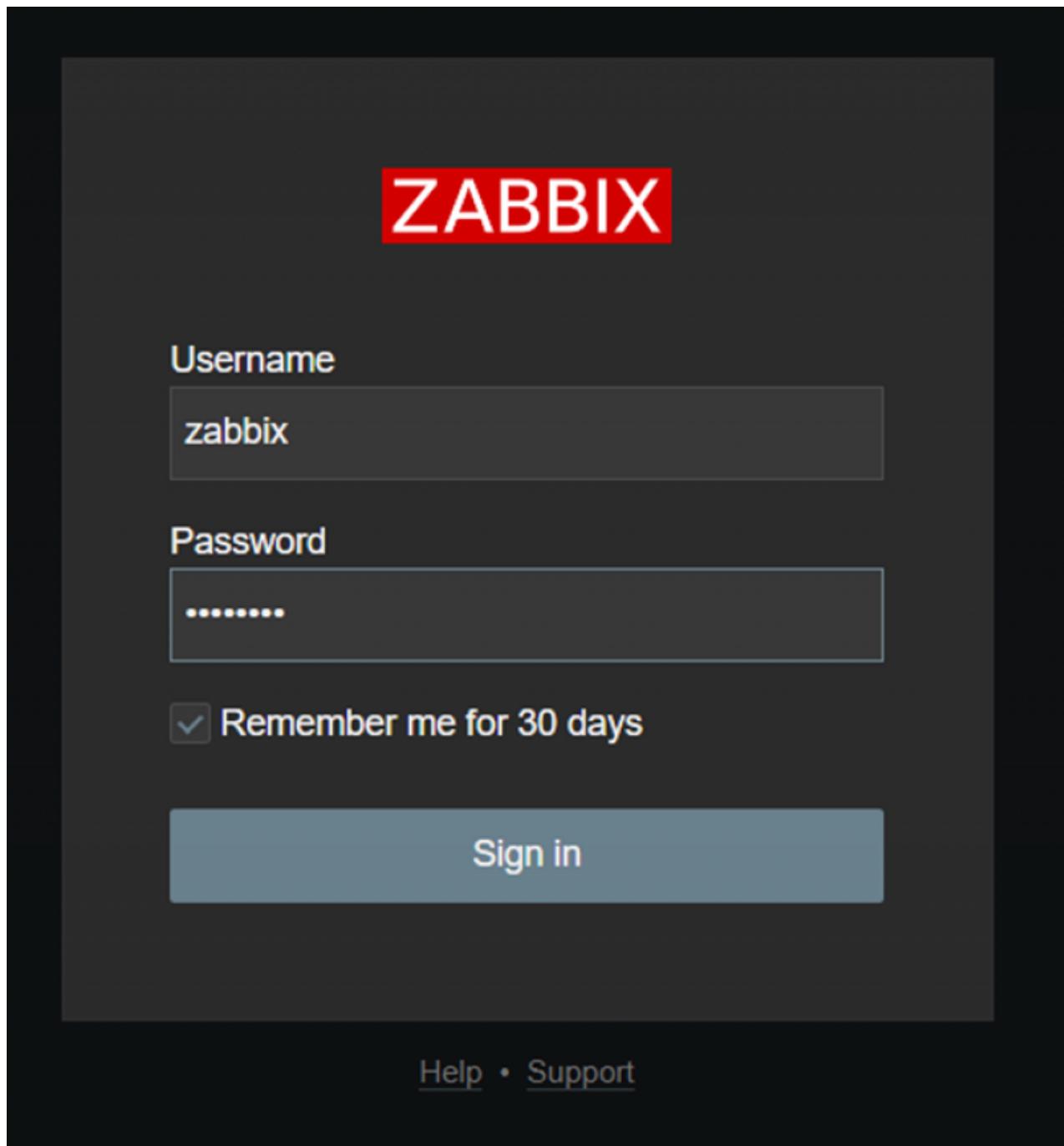
Nous vérifions que les éléments entrés soient corrects.



Nous pouvons terminer l'installation.



Nous pouvons maintenant nous connecter avec les identifiants par défaut : Admin/zabbix :

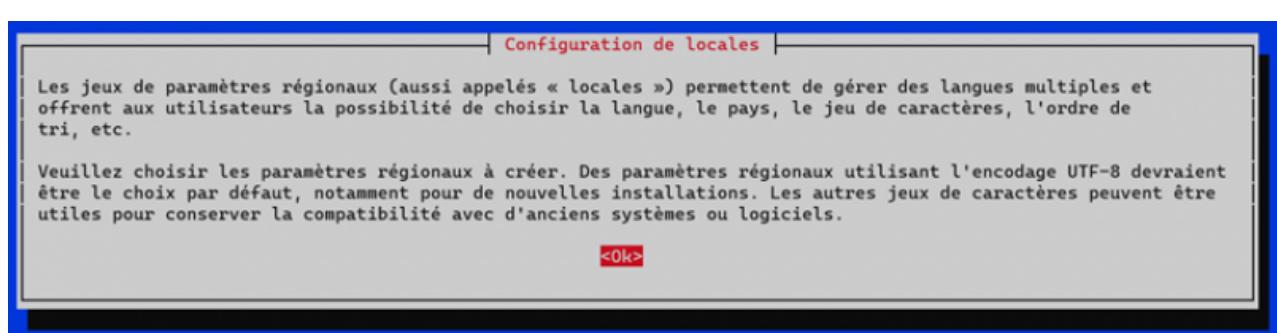


Nous pouvons voir sur notre tableau de bord que beaucoup d'erreurs empêchent le bon fonctionnement des graphes.

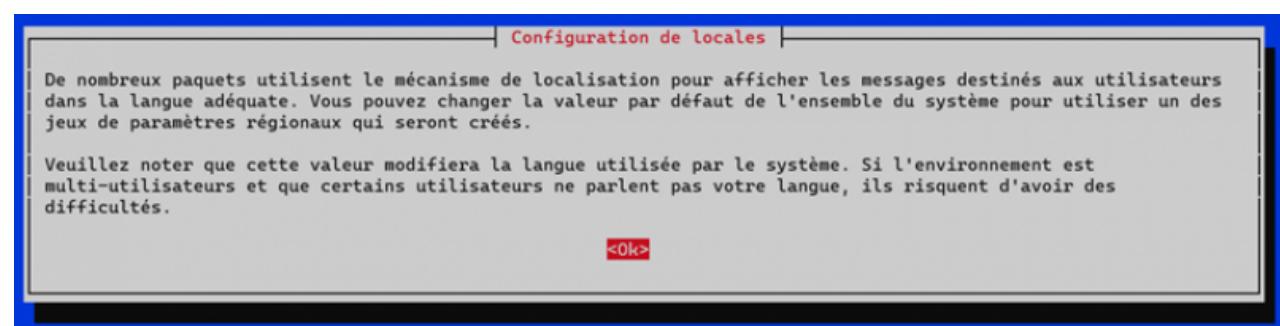
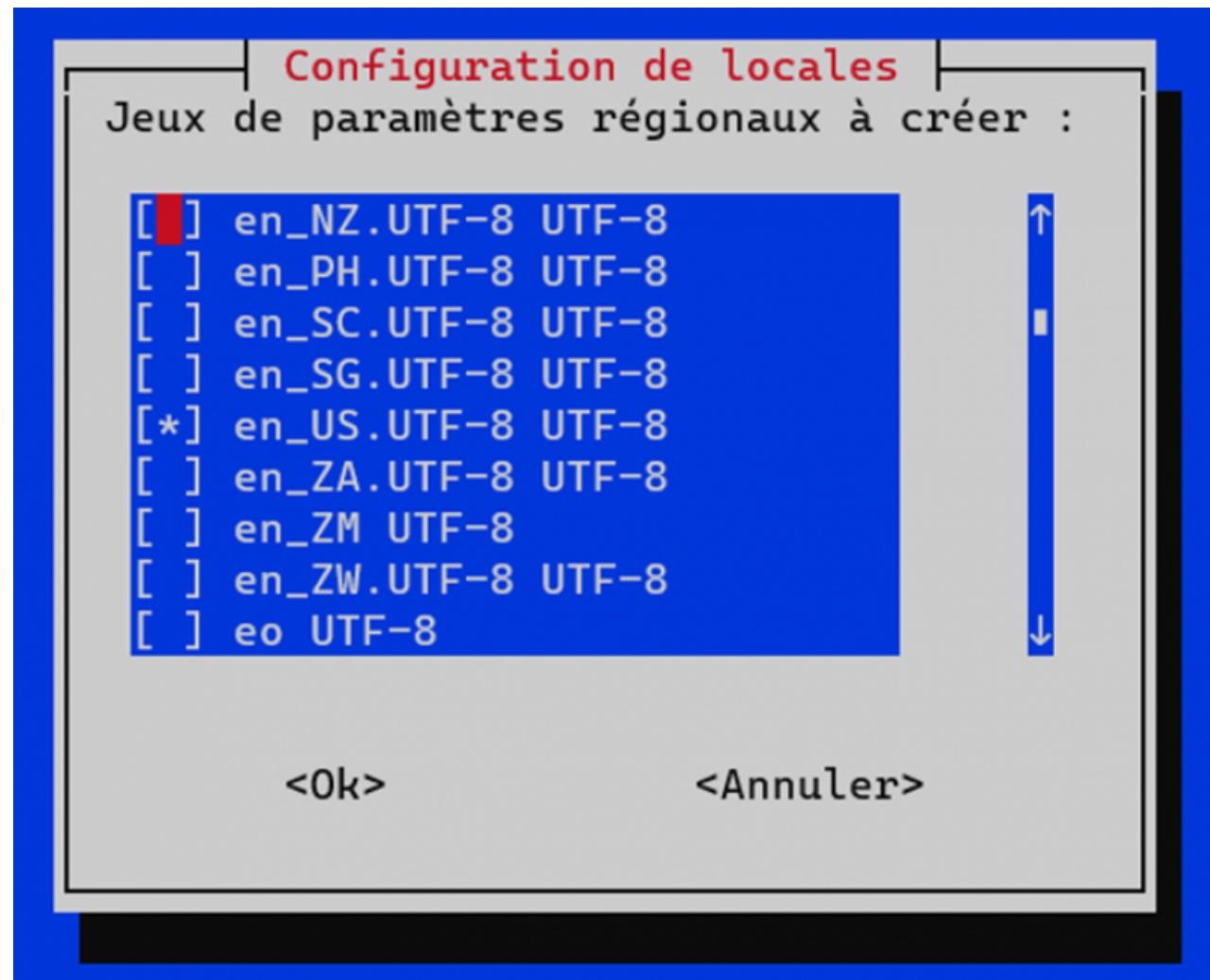
The screenshot shows the Zabbix Global view dashboard. On the left, there's a sidebar with navigation links: Dashboards, Monitoring, Services, Inventory, Reports, Data collection, Alarms, Users, Administration, Support, Integrations, Help, User settings, and Sign out. The main area has several cards: 'Top hosts by CPU utilization' (warning), 'System information' (warning), 'Most availability' (warning), 'Problems by severity' (warning), 'Current problems' (warning), and a 'Geomap' section (warning). Each card displays a summary of the issue, such as 'Locale for language "en\_US" is not found on the web server. Tried to set en\_US.UTF-8, en\_US.UTF-8@zh\_TW, en\_US.UTF-8@zh\_HK, en\_US.UTF-8@zh\_Hans\_TW, en\_US.UTF-8@zh\_Hans\_HK, en\_US.UTF-8@zh\_Hans\_SG, en\_US.UTF-8@zh\_Hant\_TW, en\_US.UTF-8@zh\_Hant\_HK, en\_US.UTF-8@zh\_Hant\_SG, en\_US.UTF-8@zh\_TW@zh\_TW, en\_US.UTF-8@zh\_TW@zh\_HK, en\_US.UTF-8@zh\_TW@zh\_SG, en\_US.UTF-8@zh\_HK@zh\_TW, en\_US.UTF-8@zh\_HK@zh\_HK, en\_US.UTF-8@zh\_HK@zh\_SG, en\_US.UTF-8@zh\_SG@zh\_TW, en\_US.UTF-8@zh\_SG@zh\_HK, en\_US.UTF-8@zh\_SG@zh\_SG'.

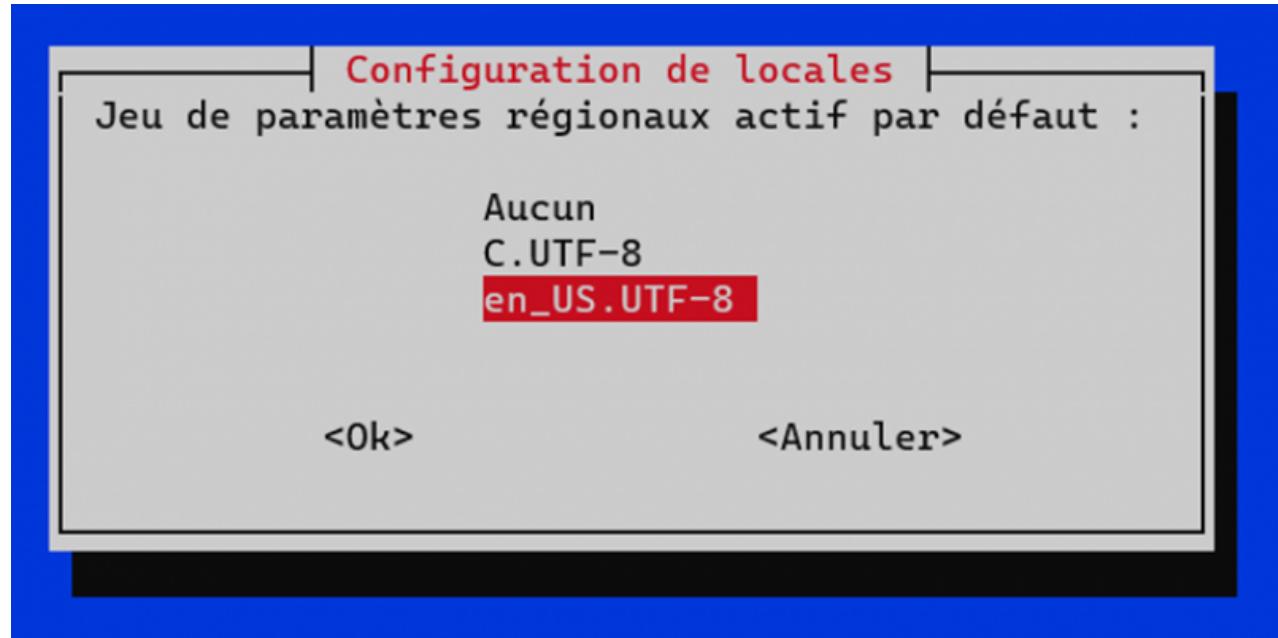
Pour ce faire, nous devons installer un nouveau paquet :

```
apt install locales
```



Nous choisissons les paramètres régionaux en\_US.UTF-8. Ce paramètre nous permettra d'enlever toutes les erreurs :





Nous entrons ensuite la commande suivante pour sauvegarder les changements :

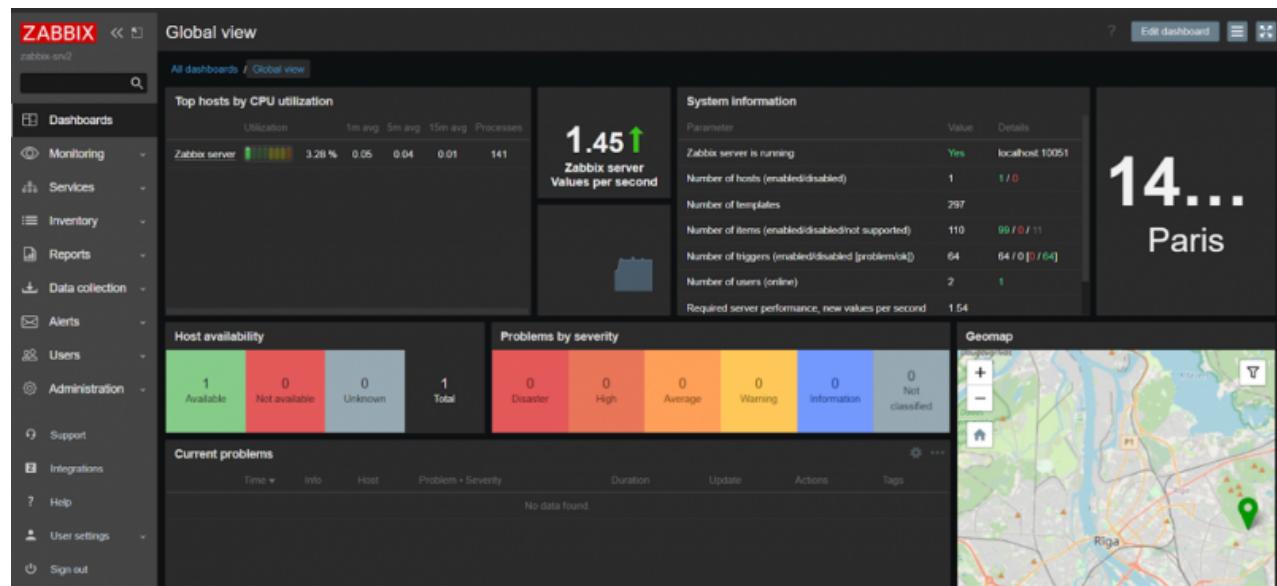
```
dpkg-reconfigure locales
```

```
root@zabbix-srv2:/etc# dpkg-reconfigure locales
Generating locales (this might take a while)...
    en_US.UTF-8... done
Generation complete.
```

Nous redémarrons le service zabbix\_server :

```
systemctl restart zabbix_server
```

Nous pouvons nous rendre dès à présent sur notre tableau de bord.



### III) Mise en place de la supervision

## A) Installation de l'agent sur la machine à monitorer

La machine que nous souhaitons montrer est la machine 10.31.186.80 (srv-web2-1). Dans un premier temps, nous commençons par affecter au pare-feu de nouvelles règles afin d'autoriser les futures communications entre les serveurs de la DMZ et le serveur Zabbix. Nous écrirons cette règle pour la LAN en direction de la DMZ et autorisons le protocole 10050. Nos agents seront en mode passif. Ce sera donc notre serveur Zabbix qui se connectera aux agents.



Nous pouvons maintenant installer le dépôt officiel de Zabbix :

```
wget
https://repo.zabbix.com/zabbix/6.4/debian/pool/main/z/zabbix-release/zabbix-release_6.4-1+debian12_all.deb
```

```
root@srv-web2-1:~# wget https://repo.zabbix.com/zabbix/6.4/debian/pool/main/z/zabbix-release/zabbix-release_6.4-1+debian12_all.deb
--2023-12-18 14:57:27--  https://repo.zabbix.com/zabbix/6.4/debian/pool/main/z/zabbix-release/zabbix-release_6.4-1+debian12_all.deb
Résolution de repo.zabbix.com (repo.zabbix.com)... 178.128.6.101, 2604:a880:2:d0::2062:d001
Connexion à repo.zabbix.com (repo.zabbix.com)|178.128.6.101|:443... connecté.
requête HTTP transmise, en attente de la réponse... 200 OK
Taille : 3540 (3,5K) [application/octet-stream]
Sauvegarde en : « zabbix-release_6.4-1+debian12_all.deb »

zabbix-release_6.4-1+debian12 100%[=====] 3,46K --.-KB/s   ds 0s
2023-12-18 14:57:28 (109 MB/s) - « zabbix-release_6.4-1+debian12_all.deb » sauvegardé [3540/3540]
```

Nous dépaquetons le dépôt officiel de Zabbix :

```
dpkg -i zabbix-release_6.4-1+debian12_all.deb
```

```
root@srv-web2-1:~# dpkg -i zabbix-release_6.4-1+debian12_all.deb
Sélection du paquet zabbix-release précédemment désélectionné.
(Lecture de la base de données... 44530 fichiers et répertoires déjà installés.)
Préparation du dépaquetage de zabbix-release_6.4-1+debian12_all.deb ...
Dépaquetage de zabbix-release (1:6.4-1+debian12) ...
Paramétrage de zabbix-release (1:6.4-1+debian12) ...
```

```
apt update && apt upgrade
apt install zabbix-agent2 zabbix-agent2-plugin-*
```

Nous modifions le fichier de configuration zabbix\_agent2.conf. Nous entrons l'adresse IP de notre serveur Zabbix :

Server=10.31.178.50 ServerActive=10.31.178.50

```
##### Passive checks related

### Option: Server
#   List of comma delimited IP addresses, optionally in CIDR notation, or DNS names of Zabbix servers and Zabbix
#   Incoming connections will be accepted only from the hosts listed here.
#   If IPv6 support is enabled then '127.0.0.1', '::127.0.0.1', '::ffff:127.0.0.1' are treated equally
#   and '::/0' will allow any IPv4 or IPv6 address.
#   '0.0.0.0/0' can be used to allow any IPv4 address.
#   Example: Server=127.0.0.1,192.168.1.0/24,::1,2001:db8::/32,zabbix.example.com
#
# Mandatory: yes
# Default:
# Server=

Server=10.31.178.50
```

```
##### Active checks related

### Option: ServerActive
#   Zabbix server/proxy address or cluster configuration to get active checks from.
#   Server/proxy address is IP address or DNS name and optional port separated by colon.
#   Cluster configuration is one or more server addresses separated by semicolon.
#   Multiple Zabbix servers/clusters and Zabbix proxies can be specified, separated by comma.
#   More than one Zabbix proxy should not be specified from each Zabbix server/cluster.
#   If Zabbix proxy is specified then Zabbix server/cluster for that proxy should not be specified.
#   Multiple comma-delimited addresses can be provided to use several independent Zabbix servers in parallel. Space
#   If port is not specified, default port is used.
#   IPv6 addresses must be enclosed in square brackets if port for that host is specified.
#   If port is not specified, square brackets for IPv6 addresses are optional.
#   If this parameter is not specified, active checks are disabled.
#   Example for Zabbix proxy:
#       ServerActive=127.0.0.1:10051
#   Example for multiple servers:
#       ServerActive=127.0.0.1:20051,zabbix.domain,[::1]:30051,::1,[12fc::1]
#   Example for high availability:
#       ServerActive=zabbix.cluster.node1;zabbix.cluster.node2:20051;zabbix.cluster.node3
#   Example for high availability with two clusters and one server:
#       ServerActive=zabbix.cluster.node1;zabbix.cluster.node2:20051,zabbix.cluster2.node1;zabbix.cluster2.node2
#
# Mandatory: no
# Default:
# ServerActive=

ServerActive=10.31.178.50
```

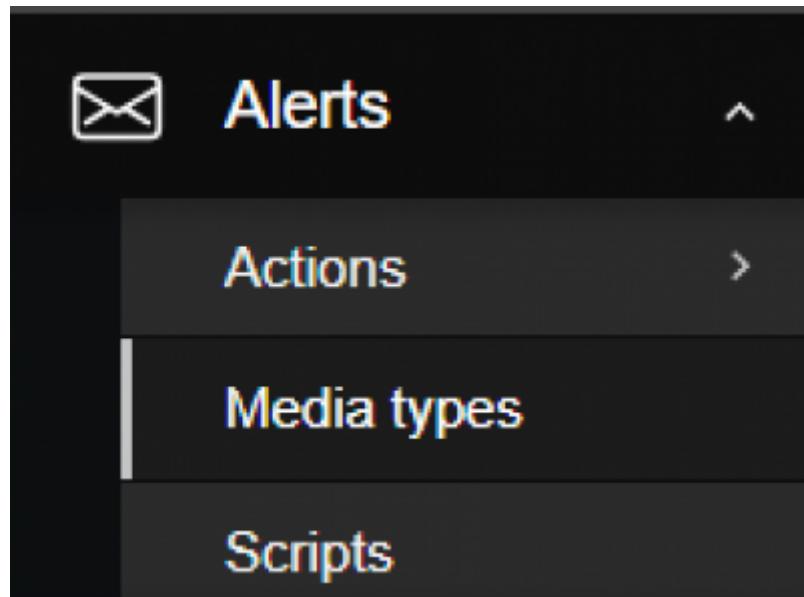
Nous pouvons redémarrer notre service :

```
systemctl restart zabbix_agent2
```

## B) Configuration de Zabbix

Le but final de cette configuration est de pouvoir recevoir des alertes via un webhook discord. Pour cela, nous devons donc créer ce webhook :

Nous allons ensuite autoriser Discord à recevoir des informations de Zabbix. Pour ce faire, nous nous rendons dans le menu des types de médias :

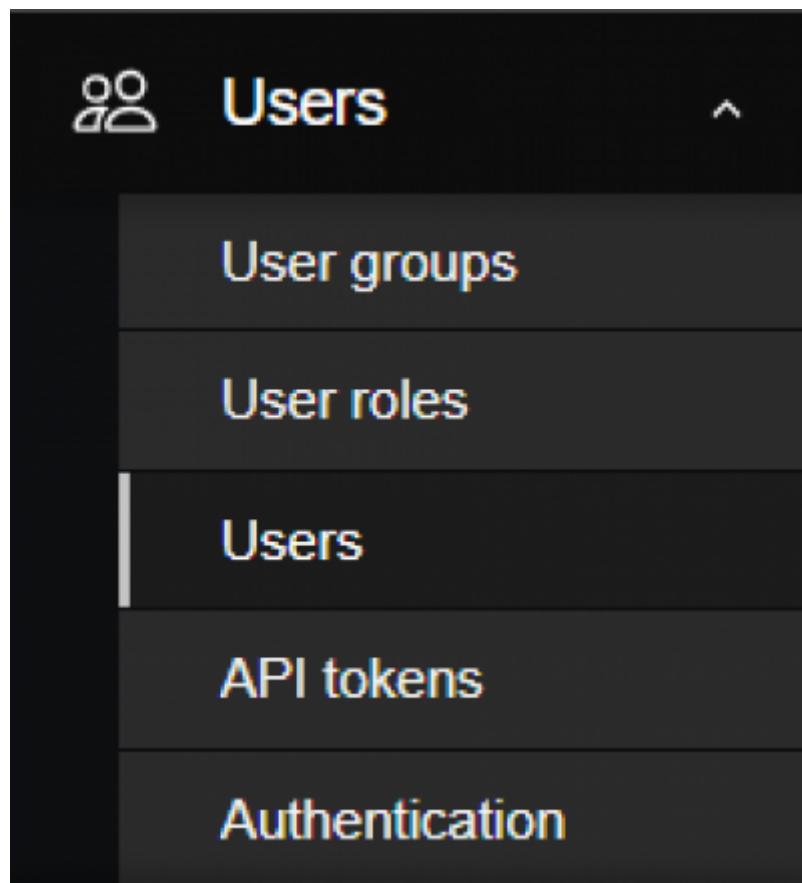


Media types					
Name	Type	Status	Used in actions	Details	Action
Brevi's one	Webhook	Disabled			Test
Discord	Webhook	Disabled	CPU Load Web-Pub		Test

Nous cliquons sur l'option “Disabled” correspondant à l'entrée Discord afin de l'activer :

Media types					
<input checked="" type="checkbox"/> Media type enabled					
Name <input type="text"/> Status <input type="button" value="Any"/> Enabled <input type="button" value="Disabled"/>					
<input type="button" value="Apply"/> <input type="button" value="Reset"/>					
Name	Type	Status	Used in actions	Details	Action
Name A	Webhook	Enabled			<input type="button" value="Test"/>
Brevit's one	Webhook	Disabled			<input type="button" value="Test"/>
Discord	Webhook	Enabled	CPU Load Web-Pv6		<input type="button" value="Test"/>

Nous pouvons maintenant créer un nouvel utilisateur. Pour cela, nous allons dans le menu des utilisateurs :



Users											
Username <input type="text"/> User roles <input type="text"/> <input type="button" value="Select"/>											
Name <input type="text"/> User groups <input type="text"/> <input type="button" value="Select"/>											
Last name <input type="text"/>											
Username	Name	Last name	User role	Groups	Is online?	Login	Frontend access	API access	Debug mode	Status	Provisioned
Admin	Zabbix	Administrator	Super admin role	Internal, Zabbix administrators	Yes (2023-12-19 13:30:16)	Ok	Internal	Enabled	Disabled	Enabled	
guest			Guest role	Disabled, Guests, Internal	No	Ok	Internal	Disabled	Disabled	Disabled	

The screenshot shows the 'Users' configuration page in Zabbix. At the top, a green success message 'User added' is displayed. Below it is a search bar with fields for 'Username', 'Name', and 'Last name'. A 'User roles' dropdown is set to 'Select' and a 'User groups' dropdown is set to 'Selected'. There are 'Apply' and 'Reset' buttons. The main area is a table with columns: Username, Name, Last name, User role, Groups, Is online?, Login, Frontend access, API access, Debug mode, Status, Provisioned, and Info. It lists three users: 'Admin' (Super admin role, Internal, Zabbix administrators, Yes, Ok, Internal, Enabled, Disabled, Enabled), 'guest' (Guest role, Disabled, Guests, Internal, No, Ok, Internal, Disabled, Disabled, Disabled), and 'Locke' (Super admin role, Zabbix administrators, No, Ok, System default, Enabled, Disabled, Enabled).

Nous créons un nouvel utilisateur qui aura pour rôle “Super admin role”. Nous cliquons donc sur le bouton Create User.

This screenshot shows the same 'Users' configuration page after a new user has been created. The table now includes a fourth row for 'Locke' (Super admin role, Zabbix administrators, No, Ok, System default, Enabled, Disabled, Enabled).

The screenshot shows the 'Hosts' configuration page. At the top, there are buttons for 'Create host' and 'Import'. Below is a search bar for 'Host groups' and a 'Status' dropdown with 'Any', 'Enabled', and 'Disabled' options. There are also filters for 'Monitored by' (Any, Server, Proxy), 'Proxy' (dropdown), 'Tags' (And/Or, Or), and 'IP' (input field with 'Add' button). The main area is a table with columns: Host groups, Status, Monitored by, Proxy, Tags, IP, Port, and Actions. It lists three hosts: 'Admin' (Internal, Zabbix administrators, Yes, Ok, Internal, Enabled, Disabled), 'guest' (Disabled, Guests, Internal, No, Ok, Internal, Disabled, Disabled), and 'Locke' (Zabbix administrators, No, Ok, System default, Enabled, Disabled).

page des hôtes ^

This screenshot shows the 'New host' configuration dialog. It has tabs for 'Host', 'IPMI', 'Tags', 'Macros', 'Inventory', 'Encryption', and 'Value mapping'. The 'Host' tab is selected. It contains fields for 'Host name' (web-pub), 'Visible name' (web-pub), 'Templates' (Linux by Zabbix agent), 'Host groups' (Virtual machines), 'Interfaces' (Agent 10.31.186.80, IP 10.0.0.10, DNS 10.0.0.10, Port 10050, Default checked), 'Description' (empty), and 'Monitored by proxy' (no proxy). At the bottom are 'Add' and 'Cancel' buttons.

## création d'un hôte

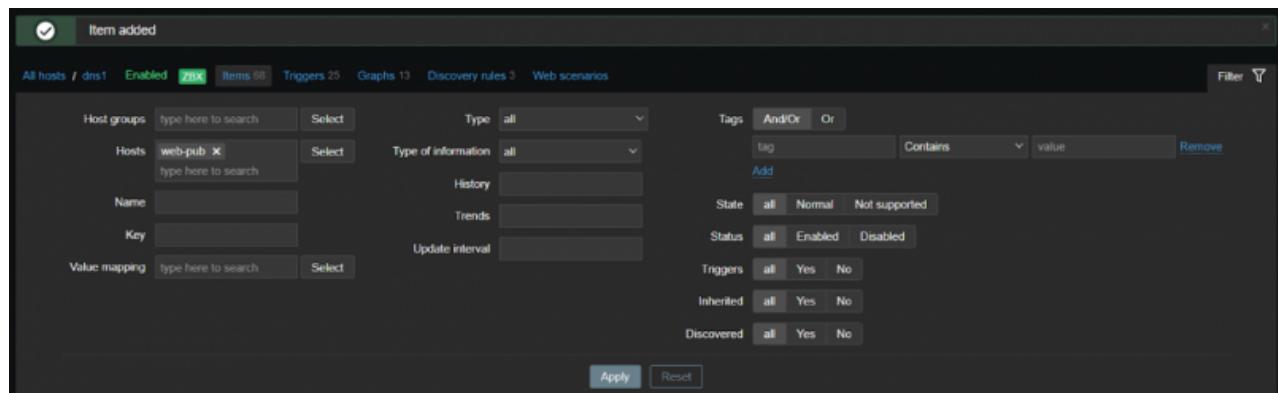
The screenshot shows the 'Hosts' configuration page in Zabbix. At the top, there are search fields for 'Host groups', 'Templates', 'Name', 'DNS', 'IP', and 'Port'. Below these are dropdowns for 'Status' (Any, Enabled, Disabled), 'Monitored by' (Any, Server, Proxy), 'Proxy' (dropdown), 'Tags' (And/Or, Or), and a 'Filter' button. A 'Create host' button is in the top right. The main area lists two hosts: 'web-pub' and 'Zabbix server'. Each host entry includes 'Items', 'Triggers', 'Graphs', 'Discovery', 'Web', 'Interface', 'Proxy', 'Templates', 'Status', 'Availability', 'Agent encryption', 'Info', and 'Tags' columns.

Name	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info	Tags
web-pub	Items 43	Triggers 15	Graphs 8	Discovery 3	Web	10.31.186.80:10050		Linux by Zabbix agent	Enabled	ZBX	None		
Zabbix server	Items 128	Triggers 69	Graphs 24	Discovery 5	Web	127.0.0.1:10050		Linux by Zabbix agent, Zabbix server health	Enabled	ZBX	None		

## affichage des hôtes

The screenshot shows the 'Items' configuration page. The top navigation bar includes links for 'All hosts / web-pub', 'Enabled' (highlighted), 'ZBX', 'Items 67', 'Triggers 25', 'Graphs 13', 'Discovery rules 3', and 'Web scenarios'. Below this, tabs for 'Item', 'Tags', and 'Preprocessing' are visible. The main form for creating a new item includes fields for 'Name' (CPU Load), 'Type' (Zabbix agent), 'Key' (system.cpu.load), 'Type of information' (Numeric (float)), 'Host interface' (10.31.186.80:10050), 'Units' (empty), 'Update interval' (10s), 'Custom intervals' (with a 'Flexible' entry for 50s), 'History storage period' (Do not keep history, 90d), 'Trend storage period' (Do not keep trends, 365d), 'Value mapping' (empty), 'Populates host inventory field' (-None-), and a large 'Description' text area.

## création d'un item pour l'alerting



item ajouter

<input type="checkbox"/> web-pub	Items 68	Triggers 26	Graphs 13	Discovery 3	Web	10.31.186.80:10050
<input type="checkbox"/> Zabbix server	Items 128	Triggers 69	Graphs 24	Discovery 5	Web	127.0.0.1:10050

triggers pour les hote (alerte)

### Triggers

All hosts / web-pub Enabled ZBX Items 68 Triggers 25 Graphs 13 Discovery rules 3 Web scenarios

Trigger Tags Dependencies

\* Name CPU Load

Event name CPU Load

Operational data

Severity Not classified Information Warning Average High Disaster

\* Expression avg(/web-pub/system.cpu.load,5s)>5

Add

Expression constructor

OK event generation Expression Recovery expression None

PROBLEM event generation mode Single Multiple

OK event closes All problems All problems if tag values match

Allow manual close

Menu entry name ? Trigger URL

Menu entry URL

Description

création d'un triggers pour un hote

**Condition**

\* Item: web-pub: CPU Load

Function: avg() - Average value of a period T

\* Last of (T): 5s  Time

Time shift: now-h

\* Result: >

### condition du trigger

**Trigger added**

All hosts / web-pub Enabled Zabbix Items 68 Triggers 26 Graphs 13 Discovery rules 3 Web scenarios

Host groups:   Tags: And/Or Or  Contains   Add

Hosts: web-pub  Name:  Inherited: all Yes No

Severity: Not classified Warning High Discovered: all Yes No

Information Average Disaster With dependencies: all Yes No

State: all Normal Unknown

Status: all Enabled Disabled

Value: all Ok Problem

### triggers ajouté

**Users**

Username	Name	Last name
Admin	Zabbix	Administrator
guest		
Lucie		

### user

**New action**

Action Operations 2

\* Name: CPU Load

Conditions: Label:  Name:  Action:   
Add

Enabled:

\* At least one operation must exist.

### trigger action

New action

Action	Operations 2
* Default operation step duration	1h
Operations	Steps Details Start in Duration Action 1 Send message to users: Lucie via Discord Immediately Default Edit Remove <a href="#">Add</a>
Recovery operations	Details Action Send message to users: Lucie via Discord Edit Remove <a href="#">Add</a>
Update operations	Details Action <a href="#">Add</a>
Pause operations for symptom problems	<input checked="" type="checkbox"/>
Pause operations for suppressed problems	<input checked="" type="checkbox"/>
Notify about canceled escalations	<input checked="" type="checkbox"/>
* At least one operation must exist.	
<a href="#">Add</a> <a href="#">Cancel</a>	

trigger action operation

Operation details

Operation	Send message
Steps	1 - 1 (0 - infinitely)
Step duration	0 (0 - use action default)
* At least one user or user group must be selected.	
Send to user groups	<input type="text"/> type here to search <a href="#">Select</a>
Send to users	Lucie <a href="#">X</a> <input type="text"/> type here to search <a href="#">Select</a>
Send only to	<input type="text"/> Discord
Custom message	<input type="checkbox"/>
Conditions	Label Name Action <a href="#">Add</a>
<a href="#">Add</a> <a href="#">Cancel</a>	

detail operation trigger

### Operation details

**Operation** Send message ▾

\* At least one user or user group must be selected.

**Send to user groups** type here to search **Select**

**Send to users** Lucie X type here to search **Select**

**Send only to** Discord ▾

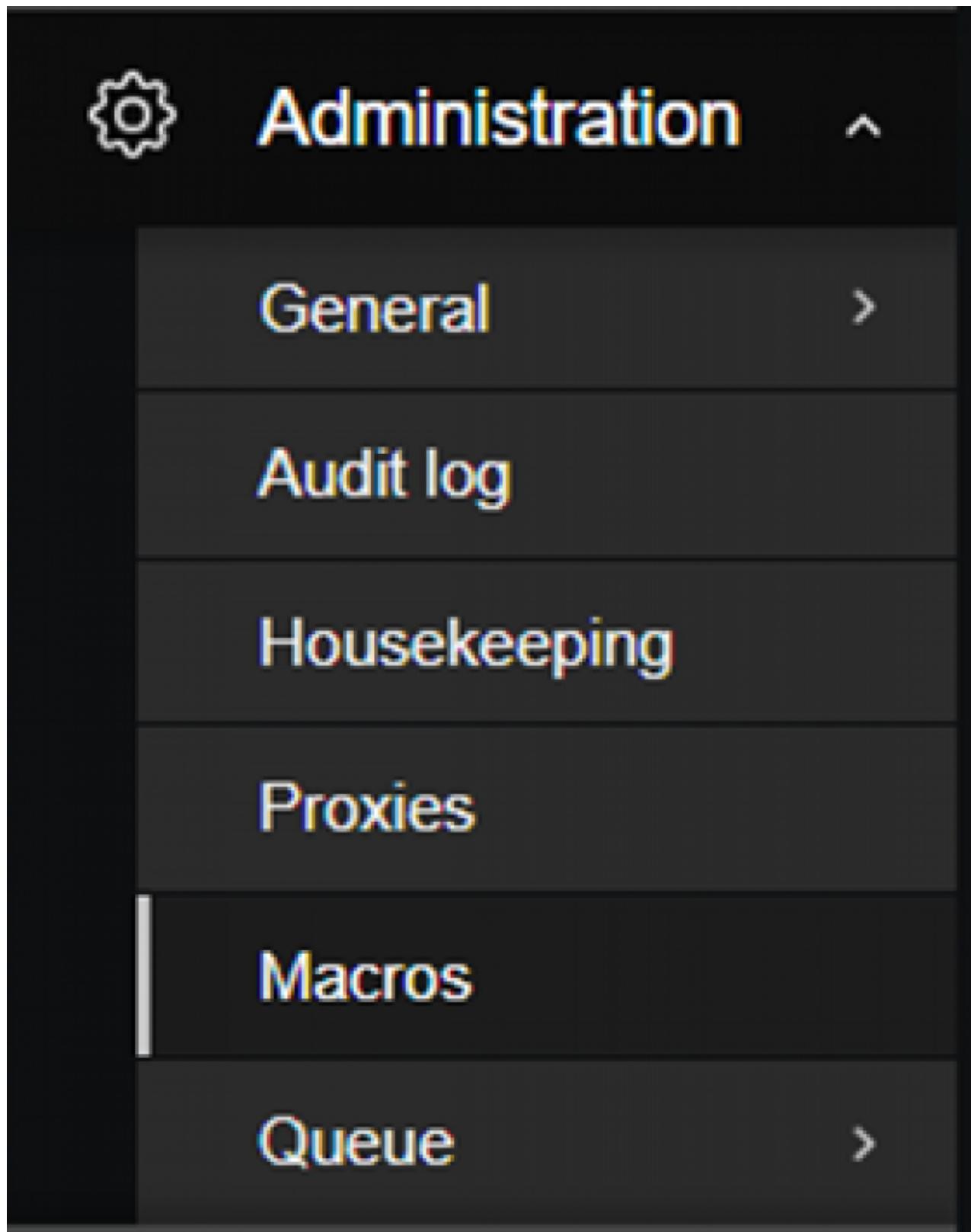
**Custom message**

**Add** **Cancel**

## detail operation trigger suite

Trigger actions ▾		?		Create action
<input checked="" type="checkbox"/> Action added				X
	Name: <input type="text"/>	Status: Any	Enabled	Disabled
		Apply	Reset	
<input type="checkbox"/> Name ▲	Conditions	Operations	Status	
<input type="checkbox"/> CPU Load		Send message to users: Lucie via Discord	Enabled	
<input type="checkbox"/> Report problems to Zabbix administrators		Send message to user groups: Zabbix administrators via all media	Enabled	

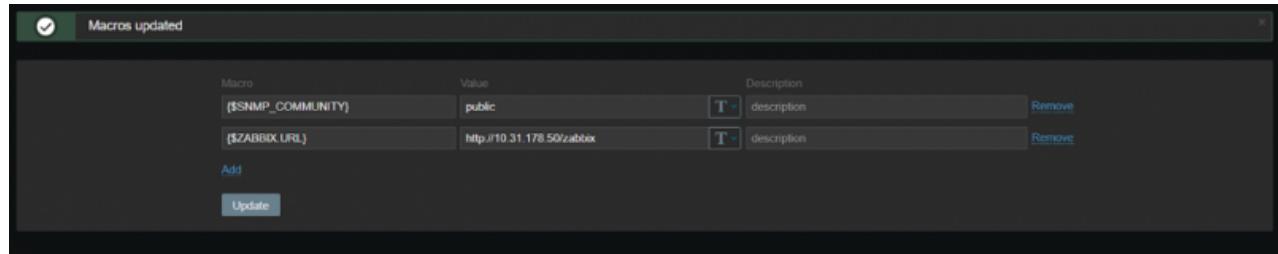
action ajouté



sidebar pour les macro

Macro	Value	Description	Remove
[\$SNMP_COMMUNITY]	public	T description	<a href="#">Remove</a>
[\$ZABBIX_URL]	Http://10.31.178.50/zabbix	T description	<a href="#">Remove</a>
<a href="#">Add</a>			
<a href="#">Update</a>			

ajout des macro pour message discord



ajout des macro pour message discord

### Edit widget

Type: Top hosts Show header

Name: Top hosts by CPU utilization

Refresh interval: 10 seconds

Host groups: type here to search Select

Hosts: Zabbix server X web-pub X Select

Host tags: And/Or Or

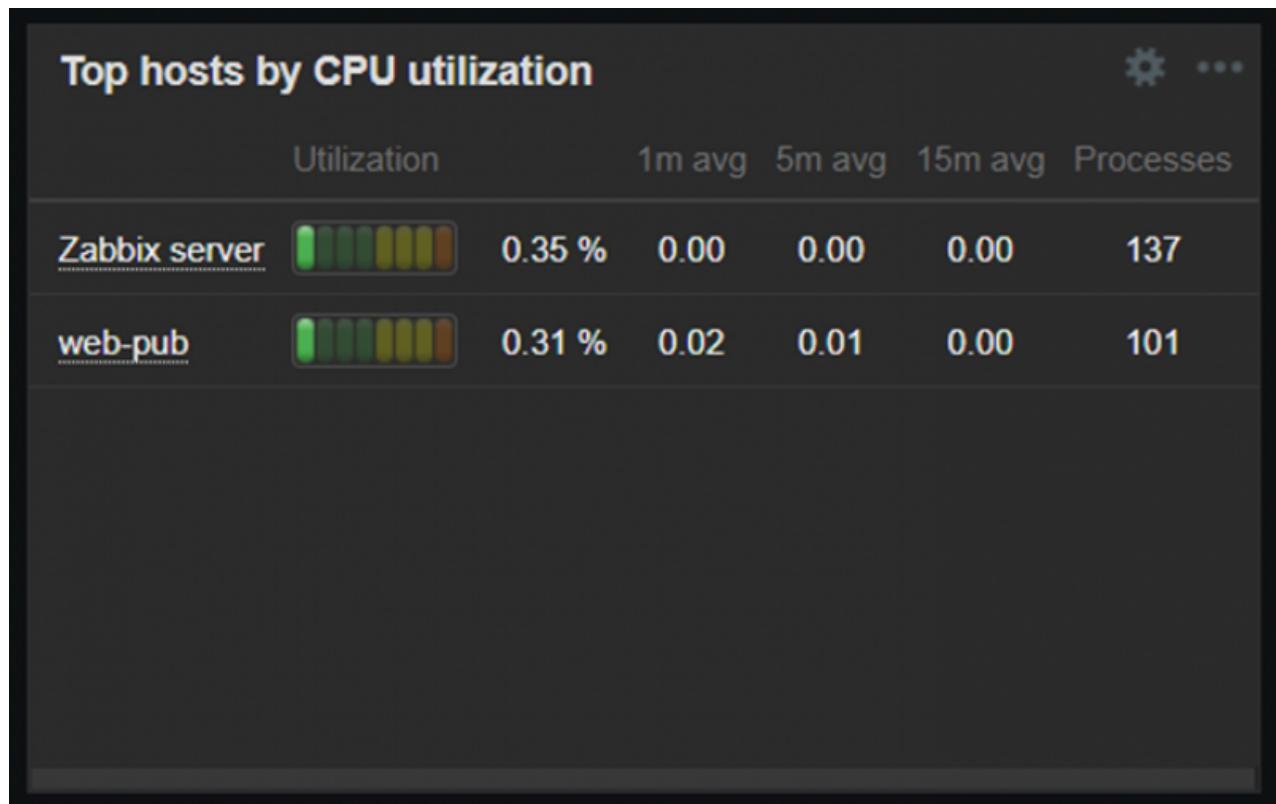
Add tag Contains value Remove

Columns:

Name	Data	Action
Host name	Linux: CPU utilization	<a href="#">Edit</a> <a href="#">Remove</a>
Utilization	Linux: Load average (1m avg)	<a href="#">Edit</a> <a href="#">Remove</a>
1m avg	Linux: Load average (5m avg)	<a href="#">Edit</a> <a href="#">Remove</a>
5m avg	Linux: Load average (15m avg)	<a href="#">Edit</a> <a href="#">Remove</a>
15m avg	Linux: Number of processes	<a href="#">Edit</a> <a href="#">Remove</a>
Processes		<a href="#">Edit</a> <a href="#">Remove</a>

Buttons: Apply Cancel

configuration dashboard



dashboard avant test

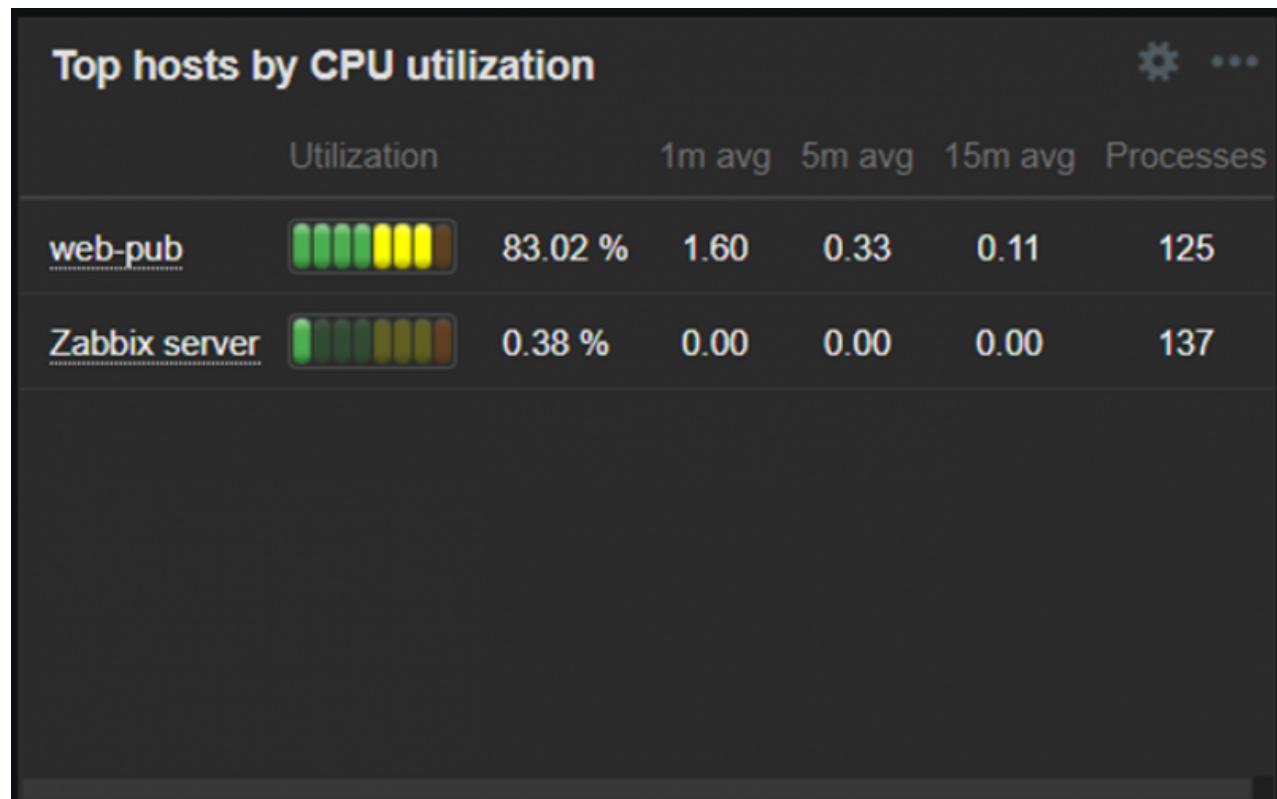
```
root@srv-web2-1:~# stress --cpu 20
stress: info: [123356] dispatching hogs: 20 cpu, 0 io, 0 vm, 0 hdd
^C
root@srv-web2-1:~#
```

test stress cpu

```
top - 14:11:32 up 34 days, 22:18, 4 users, load average: 10,43, 6,23, 2,84
Tâches: 106 total, 1 en cours, 105 en veille, 0 arrêté, 0 zombie
%Cpu(s): 0,0 ut, 0,0 sy, 0,0 ni,100,0 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0
MiB Mem : 1966,9 total, 528,4 libr, 589,9 util, 1116,3 tamp/cache
MiB Éch : 975,0 total, 975,0 libr, 0,0 util. 1377,0 dispo Mem
```

PID	UTIL.	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TEMPS+	COM.
-----	-------	----	----	------	-----	-----	---	------	------	--------	------

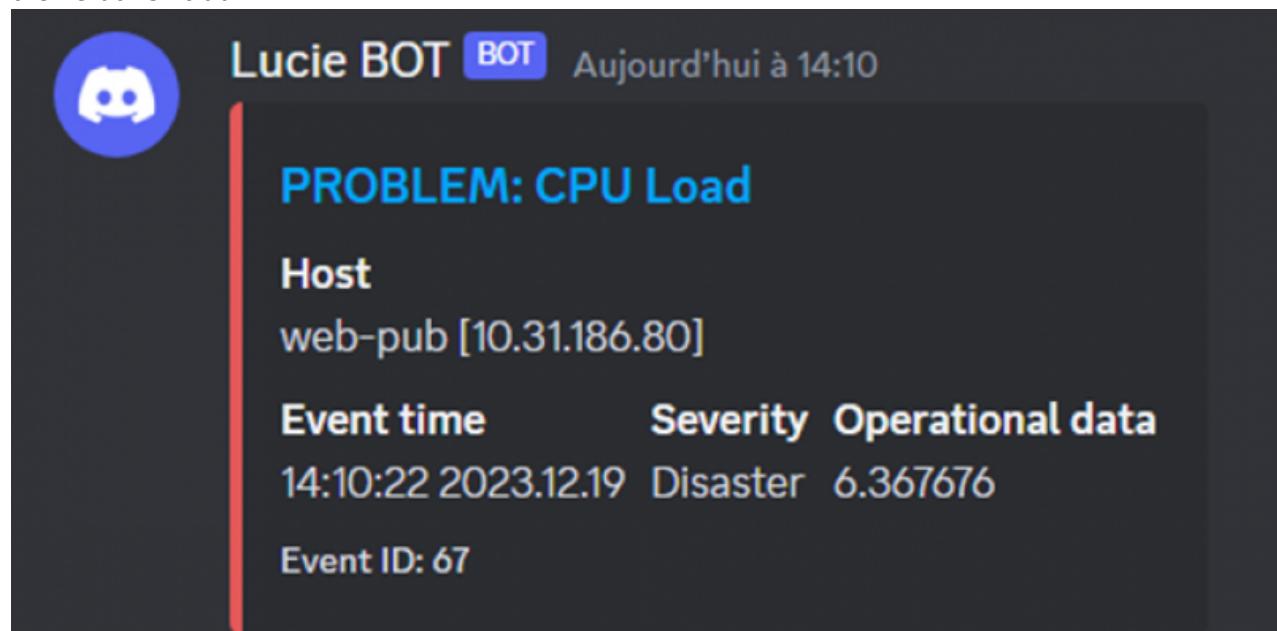
stress cpu



dashboard pendant le test

Current problems							
Time	Info	Host	Problem • Severity	Duration	Update	Actions	Tags
14.06.12		web-pub	CPU Load	38s	Update		

alerte dans zabbix



alerte discord

## Top hosts by CPU utilization

	Utilization	1m avg	5m avg	15m avg	Processes
Zabbix server		0.34 %	0.00	0.00	0.00
web-pub		0.28 %	1.00	3.89	2.44

dashboard après le test

**OK: CPU Load**

**Host**

web-pub [10.31.186.80]

**Recovery time      Severity      Operational data**

14:12:22 2023.12.19 Disaster 4.916992

**Event ID: 67**

alerte discord 2

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