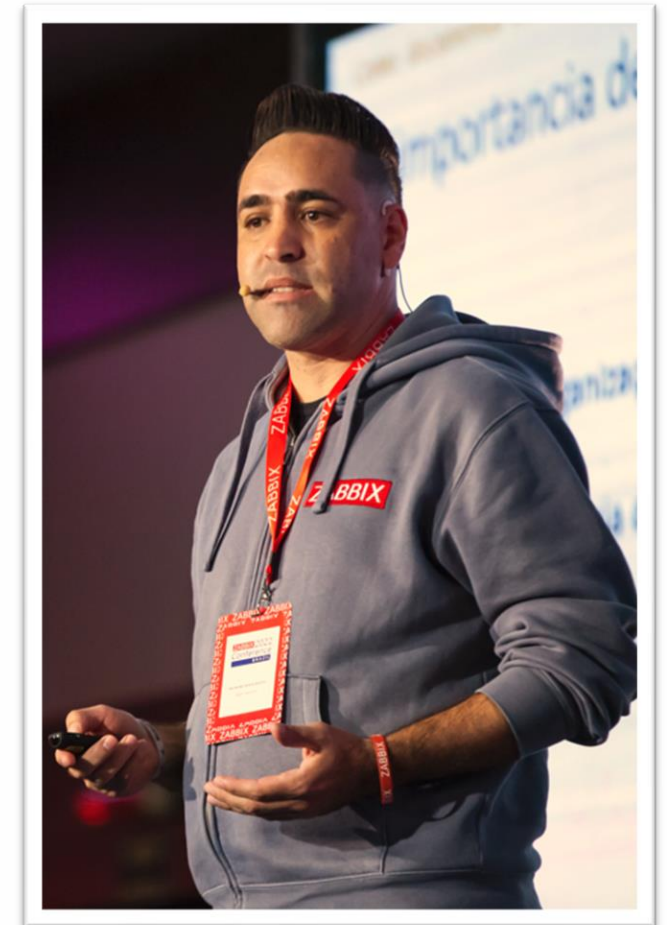


# AUTOMATIZANDO TAREFAS DIÁRIAS COM ZABBIX

**HERNANDES MARTINS**

# Hernandes Martins

- ▶ Atuando com Zabbix há mais de 12 anos
- ▶ ZCS-ZCP-ZCE-ZCT(Trainer)
- ▶ Colaborador nas redes sociais, Zabbix Fórum Oficial nos canais da comunidade Zabbix Brasil e internacionais.
- ▶ Consultor Especialista Zabbix na Lunio(Zabbix Partner)





Somos **Partner da Zabbix SIA** e responsáveis por sustentar os ambientes de monitoramento complexos e desafiadores.

A **Lunio Cloud Solutions** é uma empresa especializada em Monitoramento, serviços de TI, Cloud Computing e Segurança, criada para possibilitar aos nossos clientes a utilização da tecnologia a favor de seus negócios.

Com mais de 10 anos de atuação no mercado, situada no polo de tecnologia do Porto Digital em Recife (PE).

# Agenda

1. O poder da automação com Zabbix
2. Tarefas diárias com Zabbix
3. Como automatizar suas tarefas
4. Cases e exemplos de uso



# 1.

## O poder da automação do Zabbix

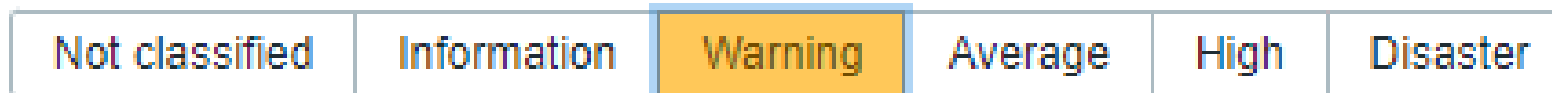
É fundamental conhecer o potencial que o Zabbix oferece em relação a automação.



# Principais automações do Zabbix

## 1. Automação de alertas

- ▶ É possível configurar alertas com base nos eventos de monitoramento.
- ▶ Personalizar alertas e definir ações automáticas para lidar com eles.





## 1. Automação de alertas

▶ Execução de scripts ou reinicialização de serviços com comando remoto

The screenshot shows the Zabbix alert interface. A table lists alerts with columns: Time, Severity, Recovery time, Status, Info, Host, Problem, Duration, Ack, Actions, and Tags. One alert is highlighted: Time: 14:41:38, Severity: High, Status: PROBLEM, Host: myapps-01, Problem: The Apache HTTP Server not running, Duration: 29s, Ack: No, Actions: 1, Tags: location: sudeste. A dropdown menu is open for the 'Actions' column, showing a table with columns: Time, User/Recipient, Action, Message/Command, Status, and Info. The menu contains two entries: one with Action 'Remote command' and Status 'Executed', and another with a calendar icon. Red arrows point to the 'Remote command' action and its 'Executed' status in the dropdown menu.

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
14:41:38	High		PROBLEM		myapps-01	The Apache HTTP Server not running	29s	No	1	location: sudeste

Time	User/Recipient	Action	Message/Command	Status	Info
2020-09-18 14:41:41		>_	Remote command	Executed	
2020-09-18 14:41:38		📅			

This is a close-up of the dropdown menu from the previous screenshot. It shows the 'Remote command' action with a status of 'Executed'. Red arrows point to the 'Remote command' text and the 'Executed' status.

Action	Message/Command	Status	Info
>_	Remote command	Executed	
📅			

## 1. Automação de alertas

▶ Execução de integrações nativas e escalonamento de notificações

Media types

<input type="checkbox"/> Name ▲	Type
<input type="checkbox"/> Brevis.one	Webhook
<input type="checkbox"/> Discord	Webhook
<input type="checkbox"/> Email	Email
<input type="checkbox"/> Email (HTML)	Email
<input type="checkbox"/> Event-Driven Ansible	Webhook
<input type="checkbox"/> Express.ms	Webhook
<input type="checkbox"/> Github	Webhook
<input type="checkbox"/> GLPi	Webhook
<input type="checkbox"/> Gmail	Email
<input type="checkbox"/> Gmail relay	Email

<input type="checkbox"/> iLert	Webhook
<input type="checkbox"/> iTop	Webhook
<input type="checkbox"/> Jira	Webhook
<input type="checkbox"/> Jira ServiceDesk	Webhook
<input type="checkbox"/> Jira with CustomFields	Webhook
<input type="checkbox"/> Line	Webhook
<input type="checkbox"/> ManageEngine ServiceDesk	Webhook
<input type="checkbox"/> Mattermost	Webhook
<input type="checkbox"/> MS Teams	Webhook
<input type="checkbox"/> Office365	Email
<input type="checkbox"/> Office365 relay	Email
<input type="checkbox"/> Opsgenie	Webhook
<input type="checkbox"/> OTRS	Webhook
<input type="checkbox"/> OTRS CE	Webhook

<input type="checkbox"/> PagerDuty	Webhook
<input type="checkbox"/> Pushover	Webhook
<input type="checkbox"/> Redmine	Webhook
<input type="checkbox"/> Rocket.Chat	Webhook
<input type="checkbox"/> ServiceNow	Webhook
<input type="checkbox"/> SIGNAL4	Webhook
<input type="checkbox"/> Slack	Webhook
<input type="checkbox"/> SMS	SMS
<input type="checkbox"/> SolarWinds Service Desk	Webhook
<input type="checkbox"/> SysAid	Webhook
<input type="checkbox"/> Telegram	Webhook
<input type="checkbox"/> TOPdesk	Webhook
<input type="checkbox"/> VictorOps	Webhook
<input type="checkbox"/> Zammad	Webhook
<input type="checkbox"/> Zendesk	Webhook



## 1. Automação de alertas

- ▶ Requer configuração de triggers
- ▶ Requer configuração de ações
- ▶ Requer configuração do agente para permitir execução de comandos remotos



## 2. Automações agendadas

- 1) Coletas de dados agendadas
- 2) Período de manutenção
- 3) Envio de relatórios



## 2. Coletas de dados agendadas

▶ permite agendar um horário ou intervalo de coleta específico para a coleta de dados.

Item Tags Preprocessing

\* Name

Type Zabbix agent

\* Key

Type of information Numeric (unsigned)

Units

\* Update interval

Custom intervals	Type	Interval	Period	Action
	Flexible Scheduling	<input type="text" value="50s"/>	<input type="text" value="1-7,00:00-24:00"/>	<a href="#">Remove</a>
	Flexible Scheduling	<input type="text" value="wd1-5h9-18"/>		<a href="#">Remove</a>

[Add](#)

\* History storage period

\* Trend storage period

Value mapping

## 2. Coletas de dados agendadas

The image displays the Zabbix configuration and monitoring interface. On the left, the configuration form for the item 'Identification of the system' is shown. The 'Update interval' is set to 0, which is highlighted with a red box. The configuration includes:

- Name: Identification of the system
- Type: Zabbix agent
- Key: system.uname
- Type of information: Character
- Host interface: 127.0.0.1:10050
- Update interval: 0

Below the configuration, there are tabs for 'Flexible' and 'Scheduling' under 'Custom intervals', and an 'Add' button.

On the right, the monitoring interface shows the 'Latest data' for the item 'hostname001: Identification of the system'. The table below shows the data collection history:

Timestamp	identification of the system
2023-05-30 10:15:42	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:15:37	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:15:32	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:15:27	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:15:22	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:15:17	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:15:12	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:15:07	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64

The Zabbix navigation menu is visible on the left side of the monitoring interface, showing options like Dashboards, Monitoring, Problems, Hosts, Latest data, Maps, Discovery, Services, Inventory, Reports, and Data collection.

## 2. Coletas de dados agendadas

\* Update interval

Custom intervals

Type	Interval	Period	Action
Flexible Scheduling	5s	1-5,10:15-10:20	<a href="#">Remove</a>
Flexible Scheduling	wd1-5h10m22		<a href="#">Remove</a>

[Add](#)



### hostname001: Identification of the system

Timestamp	Identification of the system
2023-05-30 10:22:00	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:19:57	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:19:52	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64
2023-05-30 10:19:47	Linux localhost.localdomain 4.18.0-425.19.2.el8_7.x86_64 #1 SMP Tue Apr 4 22:38:11 UTC 2023 x86_64

## 2. Período de manutenção

- ▶ É possível configurar períodos de manutenção automáticos no Zabbix.
- ▶ Evitando notificações desnecessárias durante períodos de manutenção planejada.

Maintenance periods

\* Name

Maintenance type  With data collection  No data collection

\* Active since

\* Active till

\* Periods

Period type	Schedule	Period	Action
<a href="#">Add</a>			

Host groups

Hosts

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

Tags

And/Or  Or

Contains  Equals

[Add](#)

Description



## 2. Período de manutenção

Maintenance periods

Host groups   State **Any** Active Approaching Expired

Name

<input type="checkbox"/>	Name ▲	Type	Active since	Active till	State
<input type="checkbox"/>	GMUD 002029303	With data collection	2023-05-30 10:40	2023-06-04 00:00	Approaching

Name ▲

hostname001 🗝

Items

All hosts / hostname001 In maintenance ZBX

Show symptoms  Compact view

Show suppressed problems  Show details

Show unacknowledged only  Highlight

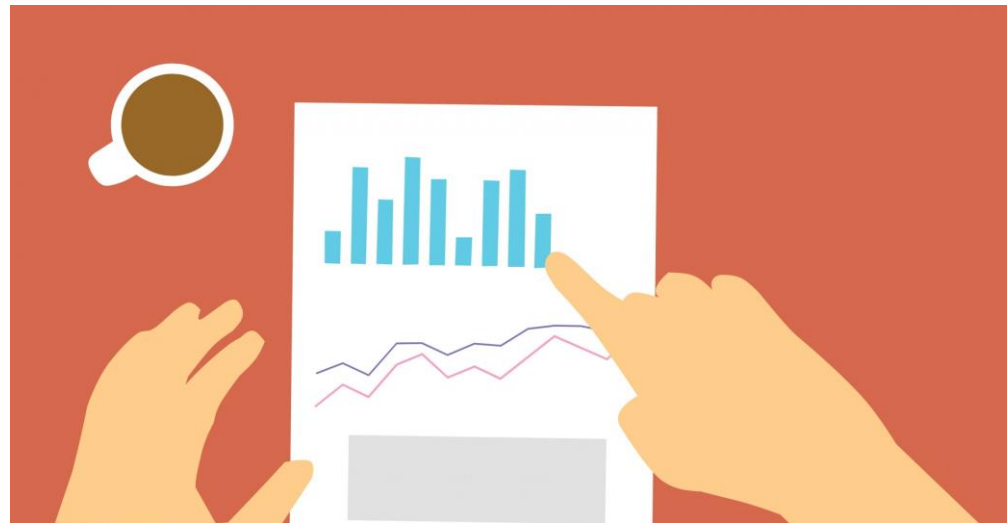
<input type="checkbox"/>	Time ▼	Severity	Recovery time	Status	Info	Host	Problem	Duration
<input type="checkbox"/>	10:44:56	High			🗝	hostname001 🗝	test ?	7s

0 selected

Suppressed till: 10:52  
Maintenance: GMUD 002029303

## 2. Automação de relatórios

- ▶ Geração relatórios com base nos dados coletados pelo Zabbix.
- ▶ Agendamento de relatórios para serem gerados em intervalos regulares.
- ▶ Envio de relatórios por e-mail para destinatários específicos.



## 2. Automação de relatórios

▶ Exemplo de automação de relatórios nativos

Owner: Admin (Zabbix Administrator)

Name:

Dashboard: type here to search

Period:

Cycle:

Start time:  :

Start date:

End date:

Subject:

Message:

Subscriptions

Recipient	Generate report by	Status	Action
Admin (Zabbix Administra...	Admin (Zabbix Administra...	<input checked="" type="checkbox"/> Include	<a href="#">Remove</a>

[Add user](#) [Add user group](#)

Description:

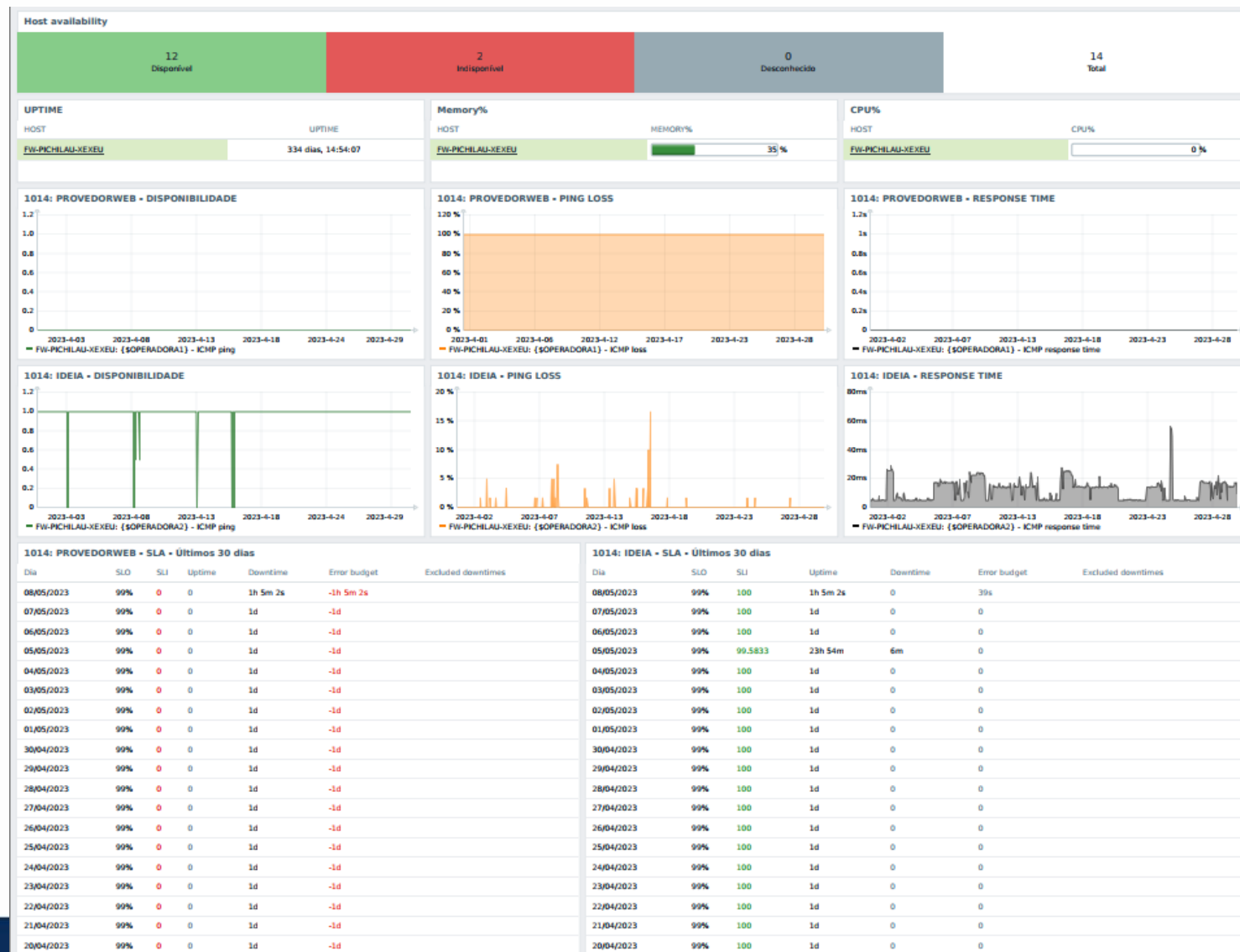
Enabled:

## 2. Automação de relatórios



## 2. Automação de relatórios

## Principais automações do Zabbix



### 3. Automação com Network Discovery

- ▶ Com o Zabbix pode descobrir automaticamente novos dispositivos em sua rede.
- ▶ Configurando regras de descoberta e ações automáticas para adicionar hosts ao monitoramento.





### 3. Automação com Network Discovery

### Principais automações do Zabbix

PASSIVE

Criteriaes Discovery Roles

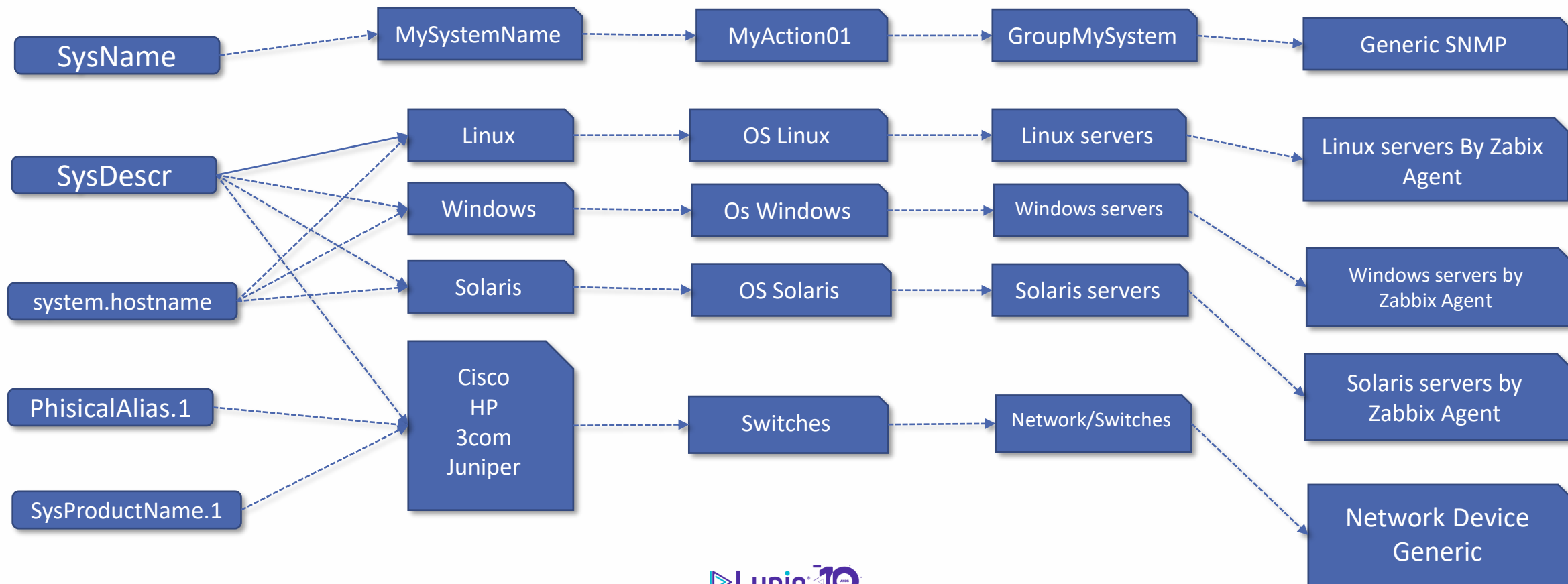
Received Value

Action Name

Add Grupo

Add Template, Host,inventory...

Discovery Roles



### 3. Automação com Network Discovery

#### ▶ Exemplo de automação com Network Discovery

Discovery rules

Name  Status **Any** Enabled Disabled

<input type="checkbox"/> Name ▲	IP range	Proxy		Interval	Checks
<input type="checkbox"/> Discovery REDE - 172.26.0.0-254	172.26.0.1-254	ZBX-PROX	VI	22h	SNMPv2 agent
<input type="checkbox"/> Discovery REDE - 172.26.1.0-254	172.26.1.1-254	ZBX-PROX	VI	22h	SNMPv2 agent
<input type="checkbox"/> Discovery REDE - 172.26.2.0-254	172.26.2.1-254	ZBX-PROX	VI	22h	SNMPv2 agent
<input type="checkbox"/> Discovery REDE - 172.26.3.0-254	172.26.3.1-254	ZBX-PROX	VI	22h	SNMPv2 agent
<input type="checkbox"/> Discovery REDE - 172.26.22.0-254	172.26.22.1-254	ZBX-PROX	VI	22h	SNMPv2 agent
<input type="checkbox"/> Discovery REDE - 172.26.23.0-254	172.26.23.1-254	ZBX-PROX	VI	22h	SNMPv2 agent
<input type="checkbox"/> Local network	192.168.0.1-254			1h	Zabbix agent

## 4. Automação com Auto registro

- ▶ Um novo servidor ou dispositivo foi criado, é possível registrar-se automaticamente.
- ▶ Configurando ações de auto registro para adicionar hosts ao monitoramento.



## 4. Automação com Auto registro

▶ Exemplo de automação com auto registro

Autoregistration ▾

Encryption level  No encryption  
 PSK

**Update**

Autoregistration actions ▾

Name

<input type="checkbox"/> Name ▲	Conditions

New condition

Type  ▾

Operator

\* Value

**Add** **Cancel**

Operation details

Operation  ▾

Send to user groups

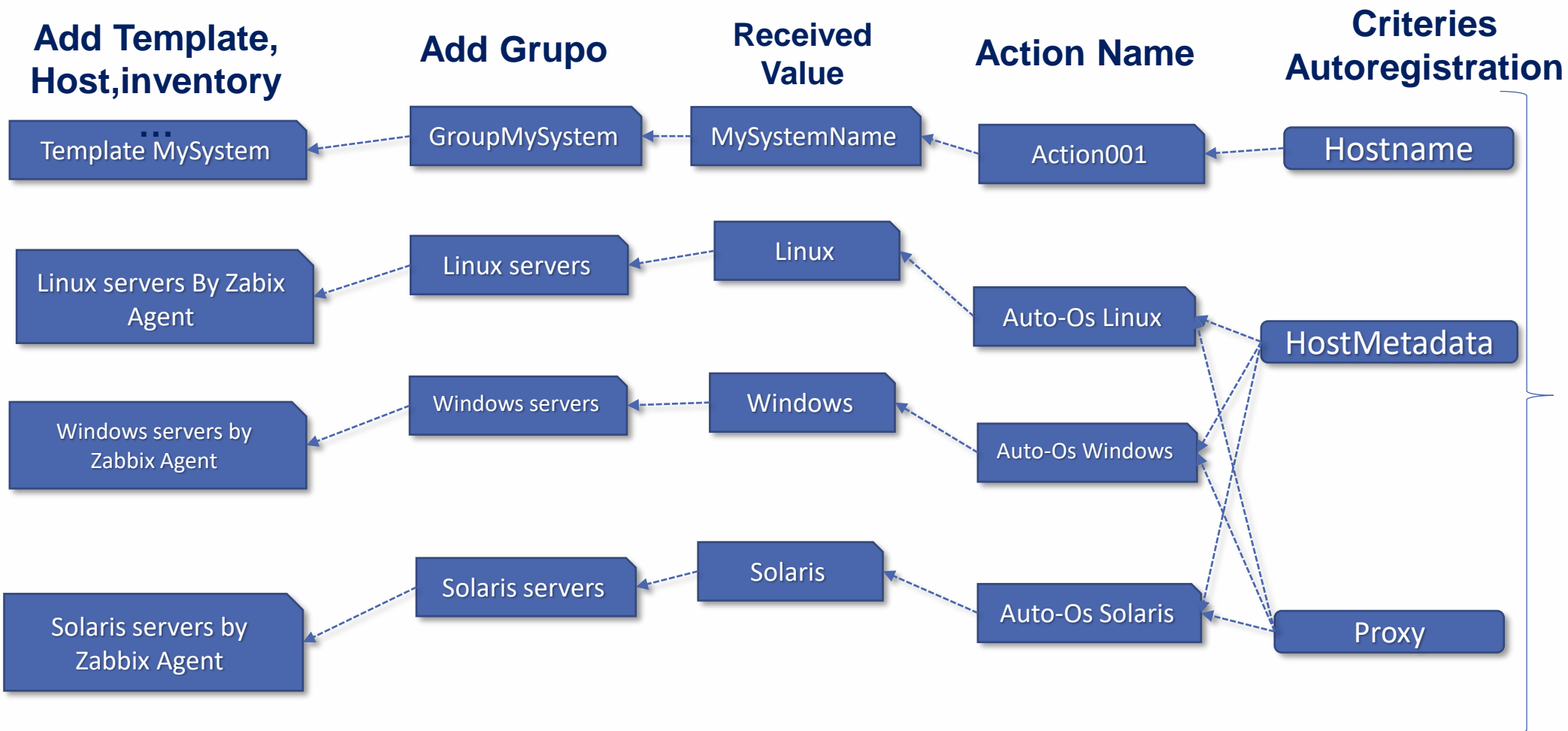
Send to users

Send only to

Custom message

**Add** **Cancel**

# 4. Automação com Auto registro



Auto Registration Roles



## 5. Descoberta de baixo nível (Low Level Discovery)

▶ A descoberta de baixo nível (LLD - Low-Level Discovery) é um recurso que permite que você descubra e crie automaticamente itens, gráficos, triggers e hosts prototypes. É especialmente útil quando você tem um grande número de itens a serem monitorados e não deseja adicionar cada um manualmente no Zabbix.





## 5. Descoberta de baixo nível(Low Level Discovery)

### ▶ Exemplo de automação de LLD

Discovery rules

All templates / Linux by Zabbix agent Items 45 Triggers 17 Graphs 8 Dashboards 2 Discovery rules 3 Web scenarios

Template groups   Type  Status

Templates   Update interval

Name  Keep lost resources period

Key

<input type="checkbox"/>	Template	Name ▲	Items	Triggers	Graphs	Hosts	Key	Interva
<input type="checkbox"/>	Linux by Zabbix agent	Block devices discovery	Item prototypes 9	Trigger prototypes 1	Graph prototypes 3	Host prototypes	vfs.dev.discovery	1h
<input type="checkbox"/>	Linux by Zabbix agent	Mounted filesystem discovery	Item prototypes 5	Trigger prototypes 4	Graph prototypes 1	Host prototypes	vfs.fs.discovery	1h
<input type="checkbox"/>	Linux by Zabbix agent	Network interface discovery	Item prototypes 9	Trigger prototypes 4	Graph prototypes 1	Host prototypes	net.if.discovery	1h

## 6. Automações via interface web

▶ É possível utilizar do zabbix via interface web

The image displays the Zabbix web interface with several navigation menus and service control options highlighted. The main menu on the left includes:

- HOST
  - Inventory
  - Latest data
  - Problems
  - Graphs
  - Screens
  - Web
  - Configuration
- SCRIPTS
  - Cluster Pacemaker
  - Detect operating system
  - Internet
  - Linux
  - Ping
  - Traceroute
  - VMWare
  - Windows
  - Zabbix Utils

The 'Linux' menu is expanded to show 'Services', which is further expanded to list various services:

- Apache
- Firewalld
- Mysql-server
- Zabbix-agent
- Zabbix-server

The 'Zabbix Utils' menu is also expanded to show 'PrintSpooler', which has control options:

- restart
- start
- stop

Another 'Zabbix Utils' menu is expanded to show 'Zabbix agent', 'Zabbix proxy', and 'Zabbix server', with 'Zabbix server' having control options:

- config\_cache\_reload
- housekeeper\_execute
- snmp\_cache\_reload

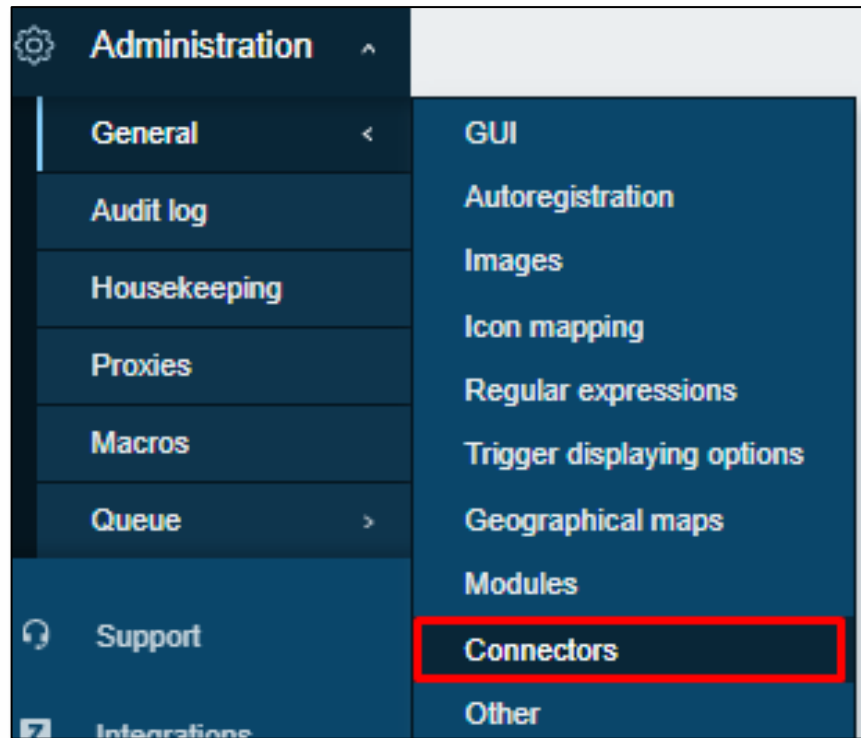
In the bottom left, a server icon labeled 'myapps-01' is shown with the status 'Service Apache: active (1) OK'.

## 7. Zabbix Streaming Protocol v1.0

- ▶ Novidade no zabbix 6.4
- ▶ É possível configurar e enviar os valores coletados dos itens para outros sistemas via HTTP.



## 7. Zabbix Streaming Protocol v1.0



The image shows the 'New connector' form in Zabbix. The form is titled 'New connector' and has a close button (X) in the top right corner. The fields and options are:

- \* Name:
- Protocol: Zabbix Streaming Protocol v1.0
- Data type:  Item values  Events
- \* URL:
- Tag filter:  And/Or  Or
- Tag filter details:  Equals  [Remove](#)
- [Add](#)
- HTTP authentication:
- Advanced configuration:
- Description:
- Enabled:

Buttons: [Add](#) [Cancel](#)

## 8. Event-Driven Ansible webhook

▶ Novidade no zabbix 6.4



Nesta primeira abordagem, vimos como é possível simplificar a gestão do monitoramento utilizando automações nativas do zabbix.



# 2.

## Quais são as suas tarefas diárias com Zabbix?

**Conhecer a sua rotina de tarefas, permite identificar de forma rápida o que pode ser automatizado**

# Quais são as suas tarefas diárias com Zabbix?

Zabbix Docker Repository GitHub



Official Dockerfiles

Create map

Import

Download and install Zabbix

Zabbix Installation from containers

Read manual

Create dashboard

Zabbix Packages

Zabbix Cloud Images

Zabbix Containers

Zabbix Appliance

Zabbix Sources

Zabbix Agents

Create trigger

Create user group

Create host

Create maintenance period

Create template group

Create item

Create web scenario

Create user role

Create graph

Create host group

Create user

Create discovery rule

Create template

Import

1 Choose your platform

ZABBIX VERSION	OS DISTRIBUTION	OS VERSION	ZABBIX COMPONENT	DATABASE	WEB SERVER
6.4	Alma Linux	9	Server, Frontend, Agent	MySQL	Apache
6.0 LTS	CentOS	8	Proxy	PostgreSQL	Nginx
5.0 LTS	Debian		Agent		
4.0 LTS	Oracle Linux		Agent 2		
7.0 PRE-RELEASE	Raspberry Pi OS		Java Gateway		
	Red Hat Enterprise				

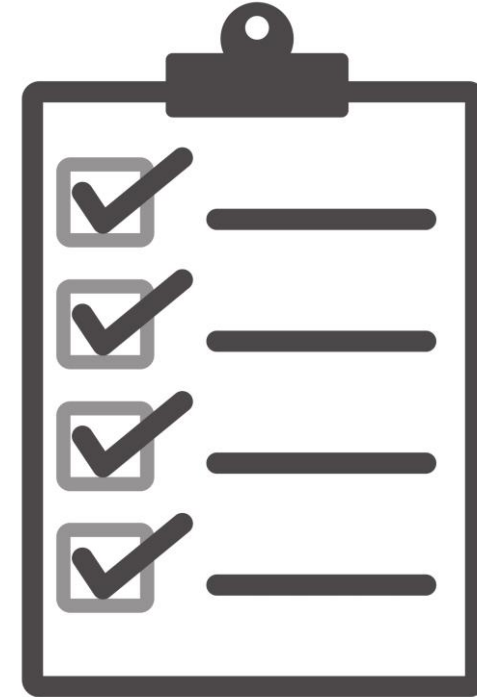
Ubuntu (arm64)

Release Notes 6.4



# Quais são as suas tarefas diárias com Zabbix?

1. Tarefas de instalação
2. Tarefas de Configuração
3. Tarefas de Administração



## 1. Tarefas de instalação

- ▶ validação de pré-requisitos/arquitetura
- ▶ execução das tarefas de instalação
- ▶ validação de instalação e configuração



## 2. Tarefas de Configuração

- ▶ organização de grupos de usuários e usuários
- ▶ organização de grupos de hosts
- ▶ população de hosts e atribuição de templates
- ▶ validação de coleta de dados
- ▶ Criação de mapas e dashboards

## 3. Tarefas de Administração

- ▶ geração de relatório de saúde diário
- ▶ atualização e migração de ambiente



# 3.

## Como automatizar suas tarefas?

**Ganhe velocidade e padronização, sempre: 'Automatize! Automatize! e Automatize!'**

### 1. Use Zabbix como código

O mesmo conceito de infraestrutura como código (IaC) pode ser aplicado para o Zabbix, ou seja é possível gerenciar e automatizar as tarefas utilizando códigos.

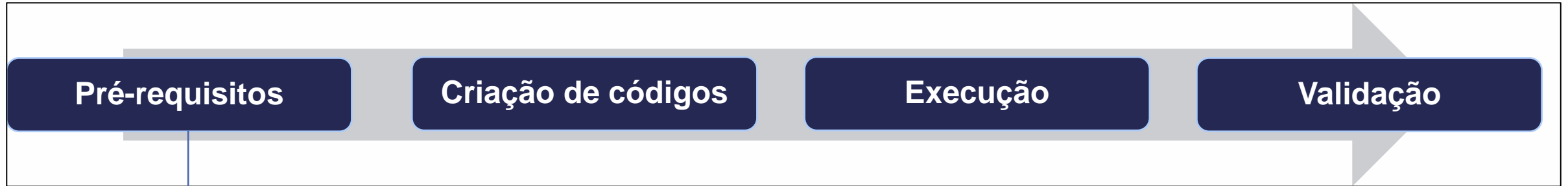
No zabbix temos diversas formas de automatizar, mas também em alguns casos precisamos executar tarefas manuais para instalação, configuração e administração

Ex: Chegada de novos clientes, Upgrade de versão



#### Ex: Pipeline resumida





- Tarefas
- Validar arquitetura necessária
    1. Cpu
    2. Disco
    3. Memória
    4. Conectividade Internet



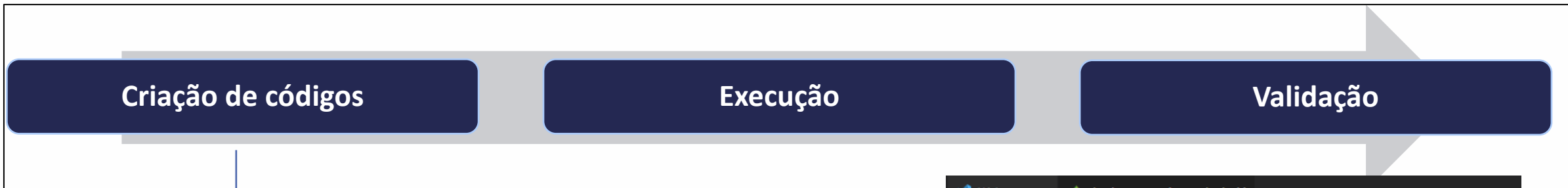
## Obtendo o código

1. Cpu  
`# lscpu`
2. Disco  
`# df -h`
3. Memória  
`# free -h`
4. Internet/Rede /Conectividade  
`# speedtest-cli --json`



# 1. Tarefas de instalação

## Como automatizar suas tarefas?



### Escrevendo código

1. shell
2. python
3. PHP
4. Perl
5. Go

```
Welcome  check-pre-requirements.sh X
$ check-pre-requirements.sh
1  #!/bin/bash
2  #####
3  #
4  # [LUNIO]
5  # [LUNIO]
6  # [LUNIO]
7  # [LUNIO]
8  # [LUNIO]
9  #Company Name   : lunio
10 #Script Name    : check-pre-requirements.sh
11 #Description    : get info from server
12 #Author        : hernandes martins
13 #Email         : hernandes.martins@lunio.br.com
14 #####
15
16 #Get cpu information
17 lscpu
18
19 #Get disk information
20 df -h
21
22 #Get memory information
23 free -h
24
25 #Install speedtest-cli requirements
26 apt install python3-pip
27
28 #Install speedtest-cli package
29 pip install speedtest-cli
30
31 #Get internet information
32 speedtest-cli --json
```

# 1. Tarefas de instalação

## Como automatizar suas tarefas?

```
root@trn-ubnt-22-04-srv-01:~# cat check-pre-requirements.sh
#!/bin/bash
#####
#
# LUNIOBR
#
#Company Name : lunio
#Script Name : check-pre-requirements.sh
#Description : get info from server
#Author : hernandes martins
#Email : hernandes.martins@lunio.br.com
#####

#Get cpu information
lscpu

#Get disc information
df -h

#Get memory information
free -h

#Install speedtest-cli requirements
apt install python3-pip

#Install speedtest-cli package
pip install speedtest-cli

#Get internet information
speedtest-cli --json
```

```
root@trn-ubnt-22-04-srv-01:~# ./check-pre-requirements.sh
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Address sizes: 39 bits physical, 48 bits virtual
Byte Order: Little Endian
CPU(s): 2
On-line CPU(s) list: 0,1
Vendor ID: GenuineIntel
Model name: Intel(R) Core(TM) i7-7500U CPU @ 2.70 GHz
CPU family: 6
Model: 142
Thread(s) per core: 1
Core(s) per socket: 2
Socket(s): 1
```

```
Filesystem      Size  Used Avail Use% Mounted on
tmpfs           393M  1.2M  392M   1% /run
/dev/mapper/ubun-vg-ubuntu--lv 12G   6.1G  4.6G  58% /
tmpfs           2.0G   0  2.0G   0% /dev/shm
tmpfs           5.0M   0  5.0M   0% /run/lock
/dev/sda2       2.0G  130M  1.7G   8% /boot
tmpfs           393M   4.0K  393M   1% /run/user/0

total        used        free      shared  buff/cache   available
Mem:    3.8Gi  774Mi  2.1Gi  10Mi  992Mi  2.8Gi
Swap:   2.1Gi   0B  2.1Gi

Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

```
Successfully installed speedtest-cli-2.1.3
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv
{"download": 2393853.268266305, "upload": 6057604.407889884, "ping": 91.635, "server": {"url": "http://speedtest.cabotelecom.com.br:8080/speedtest/upload.php", "lat": "-5.7833", "lon": "-35.2000", "name": "Natal", "country": "Brazil", "cc": "BR", "sponsor": "Cabo Telecom", "id": "22461", "host": "speedtest.cabotelecom.com.br:8080", "d": 259.925124317594, "latency": 91.635}, "timestamp": "2023-03-10T17:21:29.877986Z", "bytes_sent": 8339456, "bytes_received": 3638608, "share": null, "client": {"ip": "186.208.7.246", "lat": "-8.1136", "lon": "-35.0145", "isp": "Lider i Telecom", "isprating": "3.7", "rating": "0", "ispdavg": "0", "ispulavg": "0", "loggedin": "0", "country": "BR"}}
```





# 1. Tarefas de instalação

Criação de códigos

## Escrevendo código

1. shell
2. python
3. PHP
4. Perl
5. Go

# Como automatizar suas tarefas?

```
Welcome $ check-pre-requirements.sh X
$ check-pre-requirements.sh
1  #!/bin/bash
2  #####
3  #
4  #
5  #
6  #
7  #
8  #
9  #Company Name   : lunio
10 #Script Name    : check-pre-requirements.sh
11 #Description    : get info from server
12 #Author        : hernandes martins
13 #Email         : hernandes.martins@lunio.br.com
14 #####
15
16 #Get cpu information
17 lscpu
18
19 #Get disk information
20 df -h
21
22 #Get memory information
23 free -h
24
25 #Install speedtest-cli requirements
26 apt install python3-pip
27
28 #Install speedtest-cli package
29 pip install speedtest-cli
30
31 #Get internet information
32 speedtest-cli --json
```



# 1. Tarefas de instalação

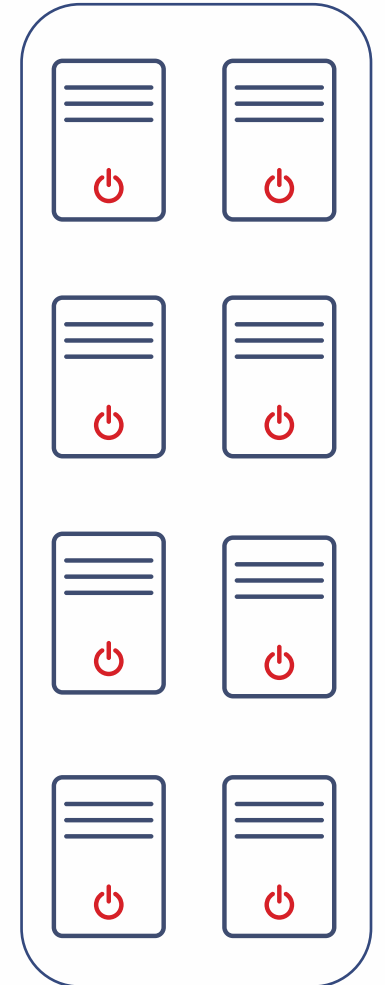


Utilizando ferramentas de automação



## Como automatizar suas tarefas?

Servers/Containers



# Use Automações com a API do Zabbix

1. Com a api do Zabbix é possível automatizar muitos mais tarefas.
2. É possível fazer realizara as tarefas citadas anteriormente

## 2. Tarefas de configuração

- ▶ organização de grupos de usuários e usuários
- ▶ organização de grupos de hosts
- ▶ população de hosts
- ▶ atribuição de templates
- ▶ validação de coleta de dados
- ▶ criação de mapas e dashboards

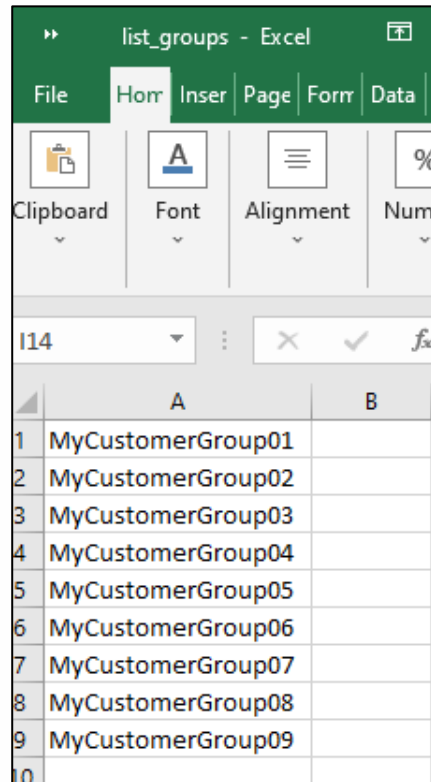


## 2. Tarefas de configuração

## Como automatizar suas tarefas?

### 1. Cadastro de grupos de hosts

- ▶ Faça um código para criar grupos
- ▶ É possível ler um arquivo csv para criar grupos



	A	B
1	MyCustomerGroup01	
2	MyCustomerGroup02	
3	MyCustomerGroup03	
4	MyCustomerGroup04	
5	MyCustomerGroup05	
6	MyCustomerGroup06	
7	MyCustomerGroup07	
8	MyCustomerGroup08	
9	MyCustomerGroup09	
10		

```
create_group_in_mass.py X
create_group_in_mass.py > ...
4 #
5 #
6 #
7 #
8 #
9 #
10 #
11 #Company Name : lunio
12 #Script Name : create_hosts_in_mass2.py
13 #Description : create hosts in mass
14 #Author : hernandes martins
15 #Created Date : 2022/02/12
16 #Email : hernandes.martins@luniobr.com
17 #-----
18 # version = '1.0'
19 # -----
20 from zabbix_api import ZabbixAPI
21 import csv
22
23 #Environment : Testing
24 zapi = ZabbixAPI(server="http://192.168.56.119/zabbix")
25 zapi.login("Admin", "zabbix")
26
27 #Environment : Production
28 #zapi = ZabbixAPI(server="http://192.168.56.119/zabbix")
29 #zapi.login("Admin", "zabbix")
30
31 f = csv.reader(open('/mnt/e/list_groups_csv.csv'), delimiter=';')
32 for [group] in f:
33     print("Registering: ",group)
34     groupcreated = zapi.hostgroup.create({
35         "name": group,
36         "Description": "Please insert your description here"
37     })
```

## 2. Tarefas de configuração

## Como automatizar suas tarefas?

```
hernandes@HPMDSTP-01:~/python_scripts$ /bin/python3 /home/hernandes/python_scripts/create_group_in_mass.py
Registering: MyCustomerGroup01
Registering: MyCustomerGroup02
Registering: MyCustomerGroup03
Registering: MyCustomerGroup04
Registering: MyCustomerGroup05
Registering: MyCustomerGroup06
Registering: MyCustomerGroup07
Registering: MyCustomerGroup08
Registering: MyCustomerGroup09
hernandes@HPMDSTP-01:~/python_scripts$
```

Novos grupos criados via api

<input type="checkbox"/> Name ▲
<input type="checkbox"/> MyCustomerGroup02
<input type="checkbox"/> MyCustomerGroup03
<input type="checkbox"/> MyCustomerGroup04
<input type="checkbox"/> MyCustomerGroup05
<input type="checkbox"/> MyCustomerGroup06
<input type="checkbox"/> MyCustomerGroup07
<input type="checkbox"/> MyCustomerGroup08
<input type="checkbox"/> MyCustomerGroup09
<input type="checkbox"/> MyCustomerGroup01

0 selected   Enable hosts   Disable hosts

## 2. Tarefas de configuração

## Como automatizar suas tarefas?

### Criar Usuários

▶ Faça um Código para cadastrar usuários

	A	B	C	D	E	F
1	student01	123@zabbix	student01	surname-student-01	surname-student-01@labmeetup.com	1
2	student02	123@zabbix	student02	surname-student-02	surname-student-01@labmeetup.com	1
3	student03	123@zabbix	student03	surname-student-03	surname-student-01@labmeetup.com	1
4	student04	123@zabbix	student04	surname-student-04	surname-student-01@labmeetup.com	1
5	student05	123@zabbix	student05	surname-student-05	surname-student-01@labmeetup.com	1
6	student06	123@zabbix	student06	surname-student-06	surname-student-01@labmeetup.com	1
7	student07	123@zabbix	student07	surname-student-07	surname-student-01@labmeetup.com	1
8	student08	123@zabbix	student08	surname-student-08	surname-student-01@labmeetup.com	1
9	student09	123@zabbix	student09	surname-student-09	surname-student-01@labmeetup.com	1
10	student10	123@zabbix	student10	surname-student-10	surname-student-01@labmeetup.com	1

```
create_user_in_mass2.py > ...
#
#
#
#
#
#Company Name : lunio
#Script Name : create_hosts_in_mass2.py
#Description : create hosts in mass
#Author : hernandes martins
#Created Date : 2022/02/12
#Email : hernandes.martins@lunio.br.com
#-----
# version = '1.0'
# -----
from zabbix_api import ZabbixAPI
import csv

#Enviroment : Testing
zapi = ZabbixAPI(server="http://192.168.56.112/zabbix")
zapi.login(api_token='d07db288c947dd218f1bbad6adb6c5e13d173da4d3796fb6f65a9263ea7acc8d')

#Enviroment : Production
#zapi = ZabbixAPI(server="http://192.168.56.119/zabbix")
#zapi.login("Admin", "zabbix")

f = csv.reader(open('/mnt/d/listadeusers.csv'), delimiter=',')
for [alias,zpasswd,name,surname,typeuser,usergroupid] in f:
    print("Creating user:",alias,"from line ", f.line_num)
    usercreated = zapi.user.create({
        "username": alias,
        "passwd": zpasswd,
        "roleid": '3',
        "name": name,
```



## 2. Tarefas de configuração

## Como automatizar suas tarefas?

```
hernandes@HPMDSTP-01:~/python_scripts$ /bin/python3 /home/hernandes/python_scripts/create_user_in_mass2.py
```

```
Creating user: student01 from line
Creating user: student02 from line
Creating user: student03 from line
Creating user: student04 from line
Creating user: student05 from line
Creating user: student06 from line
Creating user: student07 from line
Creating user: student08 from line
Creating user: student09 from line
Creating user: student10 from line
Creating user: student11 from line
Creating user: student12 from line
Creating user: student13 from line
Creating user: student14 from line
Creating user: student15 from line
Creating user: student16 from line
Creating user: student17 from line
Creating user: student18 from line
Creating user: student19 from line
Creating user: student20 from line
Creating user: student21 from line
Creating user: student22 from line
Creating user: student23 from line
Creating user: student24 from line
Creating user: student25 from line
Creating user: student26 from line
```

Username	<input type="text"/>	User roles	<input type="text" value="type here to search"/>
Name	<input type="text" value="student"/>	User groups	<input type="text" value="type here to search"/>
Last name	<input type="text"/>		
		<input type="button" value="Apply"/>	<input type="button" value="Reset"/>

<input type="checkbox"/>	Username ▲	Name	Last name	User role	Groups	Is online?	Login	Front
<input type="checkbox"/>	student02	student02	surname-student-02	Super admin role	<a href="#">Internal</a>	No	Ok	Intern
<input type="checkbox"/>	student03	student03	surname-student-03	Super admin role	<a href="#">Internal</a>	No	Ok	Intern
<input type="checkbox"/>	student04	student04	surname-student-04	Super admin role	<a href="#">Internal</a>	No	Ok	Intern
<input type="checkbox"/>	student05	student05	surname-student-05	Super admin role	<a href="#">Internal</a>	No	Ok	Intern
<input type="checkbox"/>	student06	student06	surname-student-06	Super admin role	<a href="#">Internal</a>	No	Ok	Intern
<input type="checkbox"/>	student07	student07	surname-student-07	Super admin role	<a href="#">Internal</a>	No	Ok	Intern
<input type="checkbox"/>	student08	student08	surname-student-08	Super admin role	<a href="#">Internal</a>	No	Ok	Intern

Novos usuários criados via api

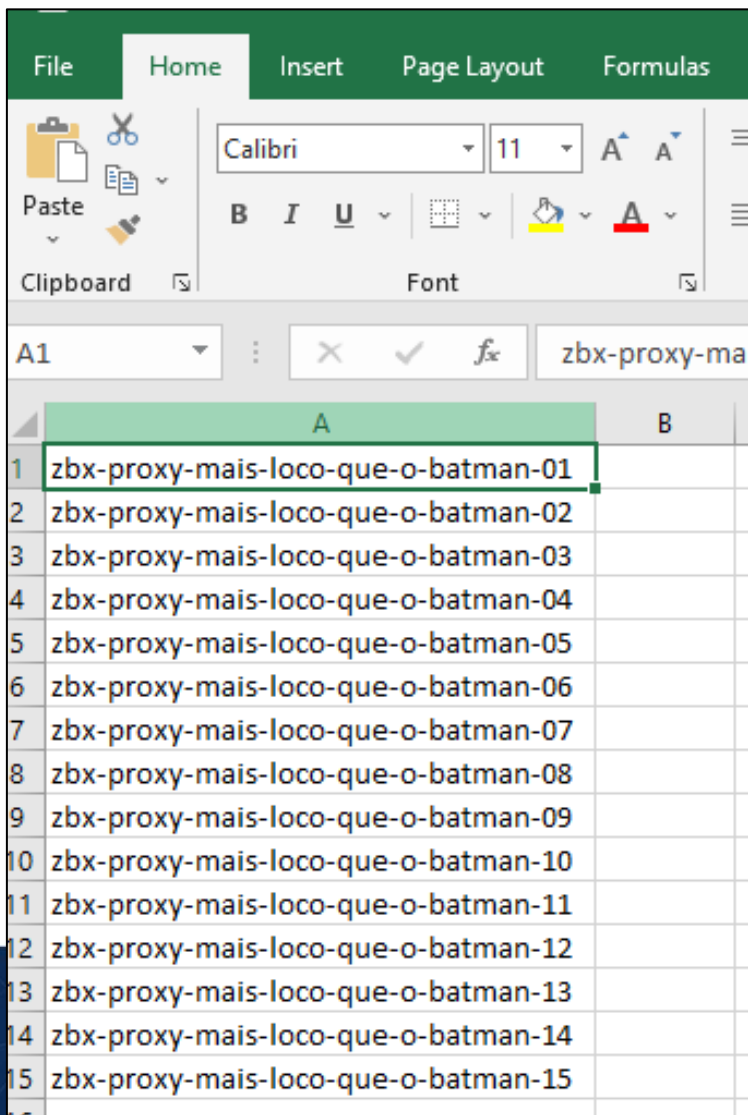
## 2. Tarefas de configuração

População do Zabbix

Cadastro de Proxies

Faça um código para criar zabbix proxies

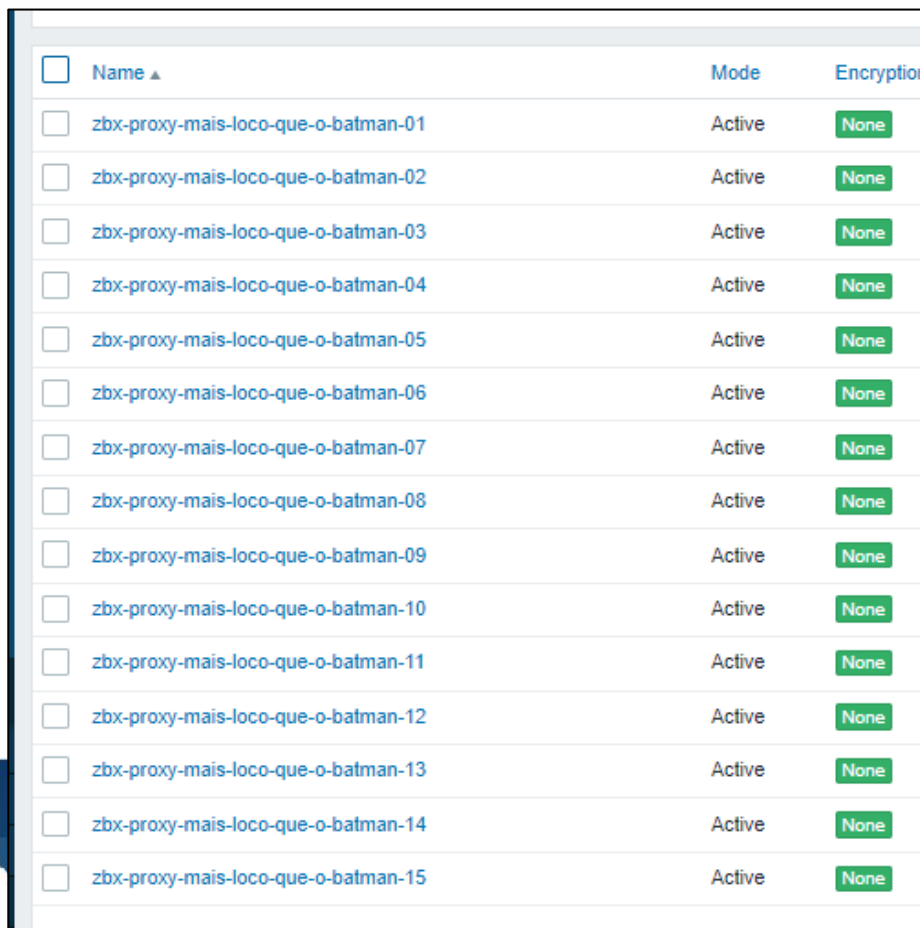
Como automatizar suas tarefas?



The image shows a screenshot of the Microsoft Excel application. The 'Home' tab is selected, and the 'Font' section of the ribbon is visible. The font is set to 'Calibri' and size '11'. The active cell is A1, and the formula bar contains the text 'zbx-proxy-ma'. The spreadsheet contains a list of proxy names in column A, from row 1 to row 15.

	A	B
1	zbx-proxy-mais-loco-que-o-batman-01	
2	zbx-proxy-mais-loco-que-o-batman-02	
3	zbx-proxy-mais-loco-que-o-batman-03	
4	zbx-proxy-mais-loco-que-o-batman-04	
5	zbx-proxy-mais-loco-que-o-batman-05	
6	zbx-proxy-mais-loco-que-o-batman-06	
7	zbx-proxy-mais-loco-que-o-batman-07	
8	zbx-proxy-mais-loco-que-o-batman-08	
9	zbx-proxy-mais-loco-que-o-batman-09	
10	zbx-proxy-mais-loco-que-o-batman-10	
11	zbx-proxy-mais-loco-que-o-batman-11	
12	zbx-proxy-mais-loco-que-o-batman-12	
13	zbx-proxy-mais-loco-que-o-batman-13	
14	zbx-proxy-mais-loco-que-o-batman-14	
15	zbx-proxy-mais-loco-que-o-batman-15	

```
f = csv.reader(open('/mnt/d/listadeproxies.csv'), delimiter=',')
for [zbxprxname] in f:
    print("Proxy",zbxprxname," created Ra tá tá tá!")
    proxycriado = zapi.proxy.create({
        "host": zbxprxname,
        "status": 5,
    })
```



The image shows a screenshot of the Zabbix web interface. It displays a table of proxies with columns for Name, Mode, and Encryption. The table contains 15 rows of proxy names, all with a Mode of 'Active' and Encryption of 'None'.

<input type="checkbox"/>	Name ▲	Mode	Encryption
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-01	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-02	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-03	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-04	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-05	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-06	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-07	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-08	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-09	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-10	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-11	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-12	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-13	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-14	Active	None
<input type="checkbox"/>	zbx-proxy-mais-loco-que-o-batman-15	Active	None

## 2. Tarefas de configuração

População do Zabbix

Cadastro de hosts e atribuição de templates/proxy aos hosts

- ▶ Faça um Código para cadastrar hosts
- ▶ Adicione modulos para cadastrar hosts com multiplos parâmetros.

	A	B	C	
1	hostname	127.0.0.1	10564	
2	hostname	127.0.0.1	10001	
3	hostname	127.0.0.1	10564	
4	hostname	127.0.0.1	10001	
5	hostname	127.0.0.1	10564	
6	hostname	127.0.0.1	10001	
7	hostname	127.0.0.1	10564	
8	hostname	127.0.0.1	10001	
9	hostname	127.0.0.1	10564	

## Como automatizar suas tarefas?

```
f = csv.reader(open('/mnt/d/listadehosts-meetup.csv'), delimiter=',')
for [hostname,ip,zbxtmplate] in f:
    #create host
    hostcriado = zapi.host.create({
        "host": hostname,
        "status": 0,
        "interfaces": [
            {
                "type": 1,
                "main": 1,
                "useip": 1,
                "ip": ip,
                "dns": "",
                "port": "10564"
            }
        ],
        "groups": [
            {
                "groupid": 2
            }
        ],
        "templates": [
            {
                "templateid": zbxtmplate
            }
        ]
    })
    print("Host", hostname, "created successfully dow dow!")
```

## 2. Tarefas de configuração

## Como automatizar suas tarefas?

Hosts											
<input type="checkbox"/>	Name ▲	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability
<input type="checkbox"/>	hostname001	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname01	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname02	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname03	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname04	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname05	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname06	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname07	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname08	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname09	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname10	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname11	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname12	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname13	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX
<input type="checkbox"/>	hostname14	Items 3	Triggers 3	Graphs	Discovery	Web	127.0.0.1:10050		ICMP Ping	Enabled	ZBX



## 2. Tarefas de configuração

Automação de Mapas

Cadastro de mapas

Faça um código para criar mapas

	A	B	C	D
1	supermapa001	2	Topologia Titulo01	
2	supermapa002	2	Topologia Titulo02	
3	supermapa003	2	Topologia Titulo03	
4	supermapa004	2	Topologia Titulo04	
5	supermapa005	2	Topologia Titulo05	
6	supermapa006	2	Topologia Titulo06	
7	supermapa007	2	Topologia Titulo07	
8	supermapa008	2	Topologia Titulo08	
9	supermapa009	2	Topologia Titulo09	
10	supermapa010	2	Topologia Titulo10	
1				

## Como automatizar suas tarefas?

The screenshot shows the Zabbix web interface for configuring maps. The left sidebar contains navigation options: Dashboards, Monitoring (Problems, Hosts, Latest data, Maps, Discovery), Services, Inventory, Reports, Data collection, Alerts, Users, and Administration. The main content area is titled 'Maps' and features a search bar with 'Name' and 'Apply'/'Reset' buttons. Below is a table listing various maps:

<input type="checkbox"/>	Name ▲	Width	Height	Actions
<input type="checkbox"/>	Local network	680	200	Properties Constructor
<input type="checkbox"/>	mapatemplate01	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa001	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa002	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa003	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa004	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa005	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa006	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa007	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa008	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa009	1366	768	Properties Constructor
<input type="checkbox"/>	supermapa010	1366	768	Properties Constructor



### 3. Tarefas de Administração

#### ▶ Geração de relatório de saúde diário

É possível automatizar o envio de relatórios de saúde do ambiente zabbix

#### ▶ Atualização e migração de ambiente

Faça um código para migrar seu ambiente de produção para ambiente de homologação diariamente utilizando a api do zabbix.



### 3. Tarefas de Administração

#### Migração de ambiente via Zabbix API



Zabbix Server old  
6.4



Zabbix Server New  
7.0



Zabbix Server Production



Zabbix Server Testing

```
#!/usr/bin/env python
# -*- coding: utf-8 -*-
# This script migrates hosts and their information to another remote zabbix.
# Created by Hernandes Martins 11/2022
# Reviewd by Rafael Magalhaes 12/2022

# Python Modules
from zabbix_api import ZabbixAPI
import ssl
import configparser

# Read config file config.ini
config = configparser.ConfigParser()
config.read('config.ini')

# Read parameters in file config.ini
zbxsourceurl = config['DefaultConfigSource']['zbxsourceurl']
zbxsourceuser = config['DefaultConfigSource']['zbxsourceuser']
zbxsourcepass = config['DefaultConfigSource']['zbxsourcepass']
zbxsourceatoken = config['DefaultConfigSource']['zbxsourceatoken']
zbxdesturl = config['DefaultConfigDest']['zbxdesturl']
zbxdestuser = config['DefaultConfigDest']['zbxdestuser']
zbxdestpass = config['DefaultConfigDest']['zbxdestpass']
zbxdestatoken = config['DefaultConfigDest']['zbxdesttoken']

zbxgrouptomigrate = config['DefaultConfigDest']['zbxdestgroup']
#print("Debug group to migrate", zbxgrouptomigrate )
timeout = config['DefaultConfig']['timeout']

# Functions Parameters
def connect_zbx_source():
    zapi = ZabbixAPI(server=zbxsourceurl,timeout=int(timeout))
    zapi.validate_certs = False
    ssl._create_default_https_context = ssl._create_unverified_context
    zapi.login(zbxsourceuser,zbxsourcepass)
    print("Connected to Zabbix API Version %s" % zapi.api_version())
    return zapi

def connect_zbx_dest():
    zapi = ZabbixAPI(server=zbxdesturl,timeout=int(timeout))
    zapi.validate_certs = False
```

### 3. Tarefas de Administração

#### Migração de ambiente via Zabbix API

```
hernandes@HPMDSTP-01:~/python_scripts/zbx_migrate_import_hosts$ /bin/python3 /home/hernandes/python_sc
#####
##### START INFORMATION #####
#####
Total hosts Zabbix server source: 53
Total hosts Zabbix server dest: 1

#####
##### GETTING AND IMPORTING HOSTS #####
#####
--- Host exist in zabbix server B: Zabbix server
>>>> Importing hostname001 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname01 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname02 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname03 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname04 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname05 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname06 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname07 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname08 - 127.0.0.1 : 10050 to zabbix server B.

>>>> Importing hostname42 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname43 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname44 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname45 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname46 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname47 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname48 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname49 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname50 - 127.0.0.1 : 10050 to zabbix server B.
>>>> Importing hostname51 - 127.0.0.1 : 10050 to zabbix server B.

#####
##### LUNIO REPORT HOSTS MIGRATION #####
#####
Getting total host list Zabbix server source: 53
Getting total host list Zabbix server dest: 54
```



# 3. Tarefas de Administração

Migração efetuada com sucesso.



Linux servers 52 hostname001, hostname01, hostname02, hostname03, hostname04, hostname05, hostname06, hostname07, hostname15, hostname16, hostname17, hostname18, hostname19, hostname20, hostname21, hostname22, hostname30, hostname31, hostname32, hostname33, hostname34, hostname35, hostname36, hostname37, hostname45, hostname46, hostname47, hostname48, hostname49 ...

Virtual machines

Zabbix servers 1 Zabbix server

0 selected Enable hosts Disable hosts Delete

**6.4.2**

Zabbix 6.4.2. © 2001–2023, Zabbix SIA

ZabbixConference2023Group 52 hostname001, hostname01, hostname02, hostname03, hostname04, hostname05, hostname12, hostname13, hostname14, hostname15, hostname16, hostname17, hostname24, hostname25, hostname26, hostname27, hostname28, hostname29, hostname36, hostname37, hostname38, hostname39, hostname40, hostname41, hostname48, hostname49 ...

Zabbix servers 1 Zabbix server

0 selected Enable hosts Disable hosts Delete

**7.0.0 alpha1**

Zabbix 7.0.0alpha1. © 2001–2023, Zabbix SIA



[https://github.com/mrhernandes/zbx\\_migrate\\_import](https://github.com/mrhernandes/zbx_migrate_import)

# 4.

## Cases e exemplos de uso

Compartilhar experiências e conhecimento  
é importante para o crescimento de todos



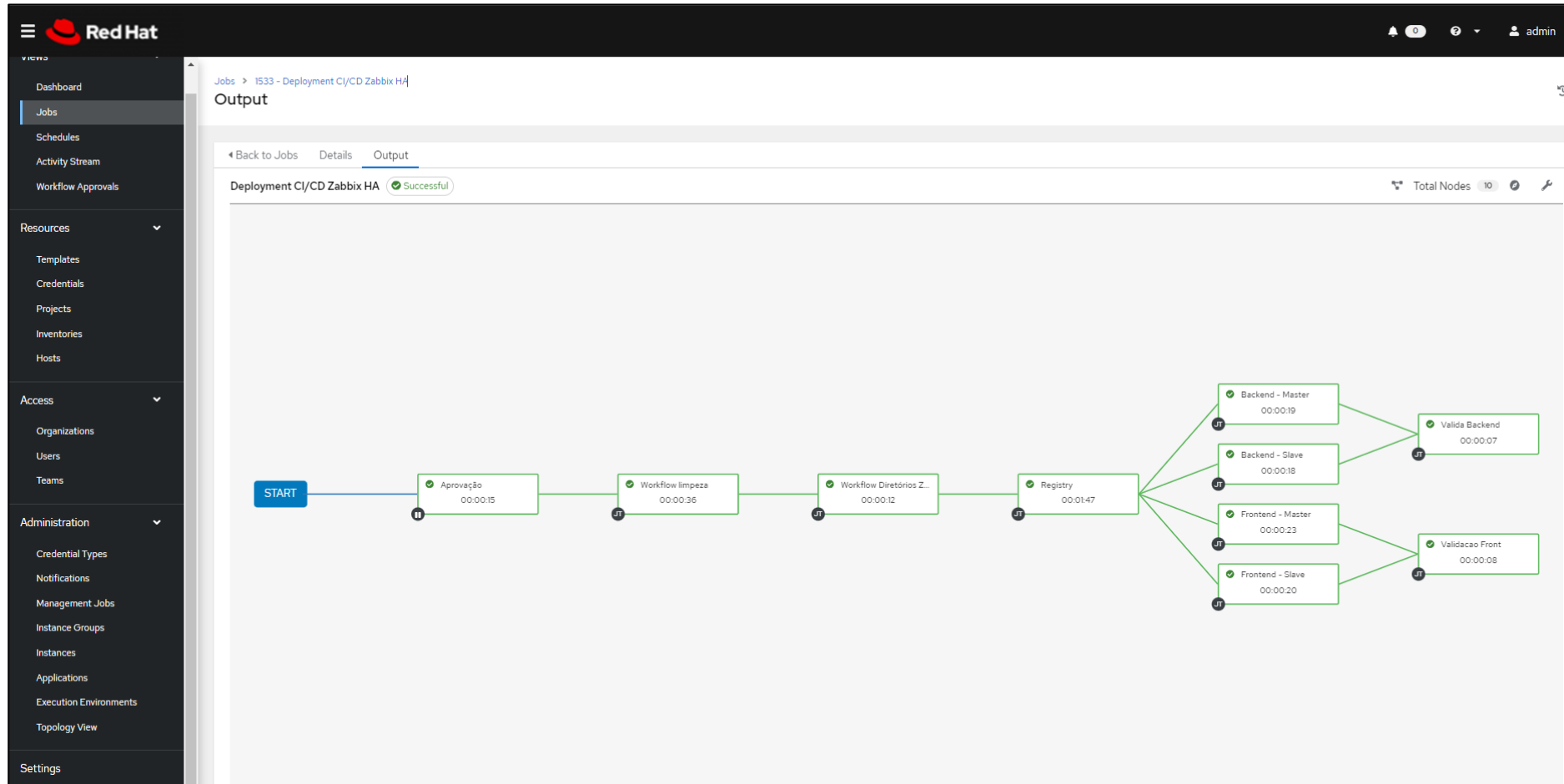
# 1. Aplicação para população de hosts

● HOSTS ● MAPAS ● LUNIO ● AWX

The screenshot shows the 'Zabbix Host Importer' application window. The title bar includes the application name and standard window controls. The interface features a dark red header with the 'PANOPS' logo and a 'Modo escuro' (Dark Mode) toggle. A sidebar on the left contains two menu items: 'Conexão com API' (checked) and 'Informações'. The main content area is titled 'Informações de Cadastro de Novos Hosts' and contains four input fields: 'Grupo de Host \*', 'Templates \*', 'Utilizar servidor Zabbix Proxy' (with a toggle switch), and 'Proxy do Host'. Each input field has a search icon and a refresh icon on the right side.

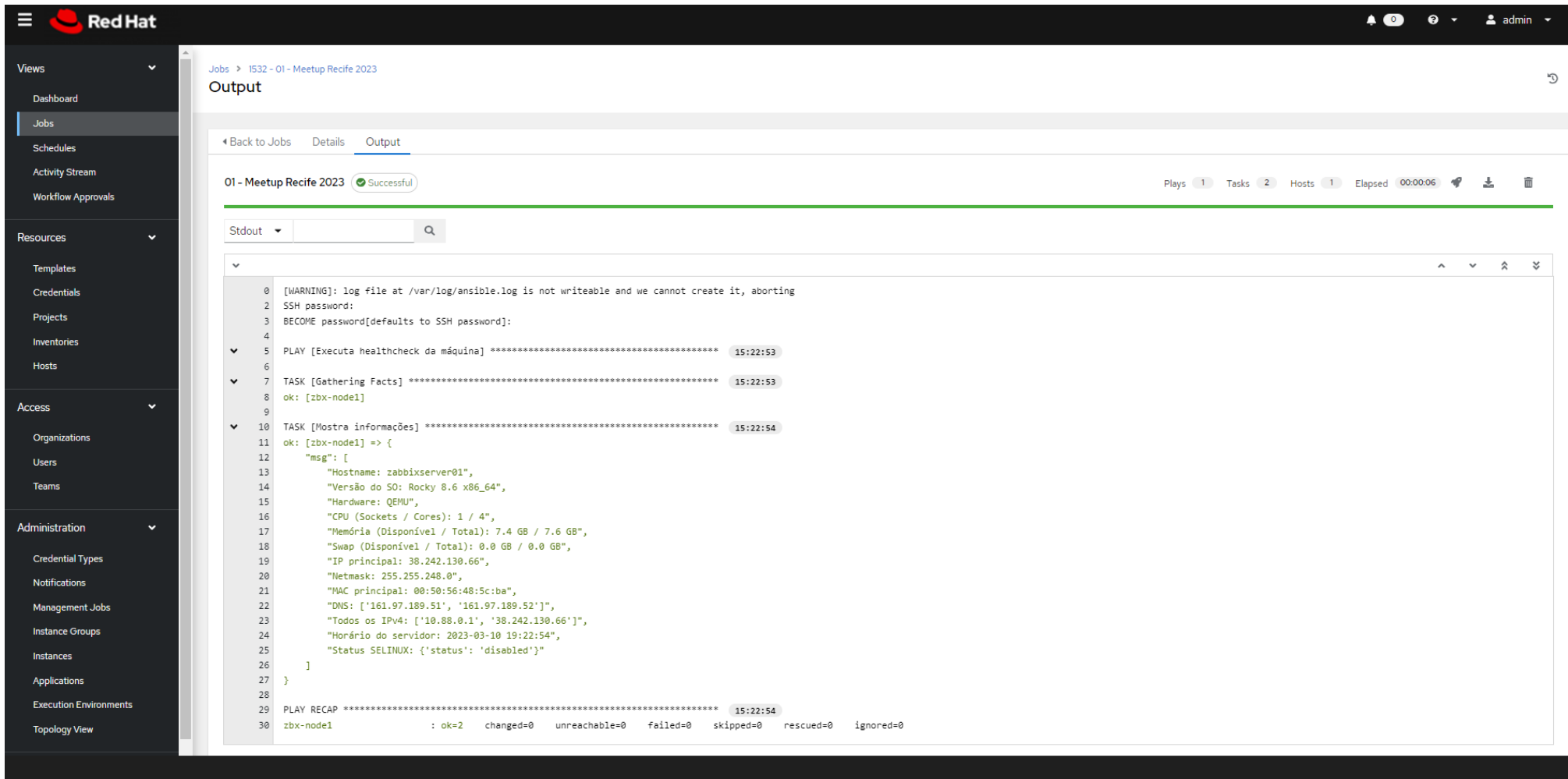


## 2. Criação de pipeline automatizada para criação de ambientes





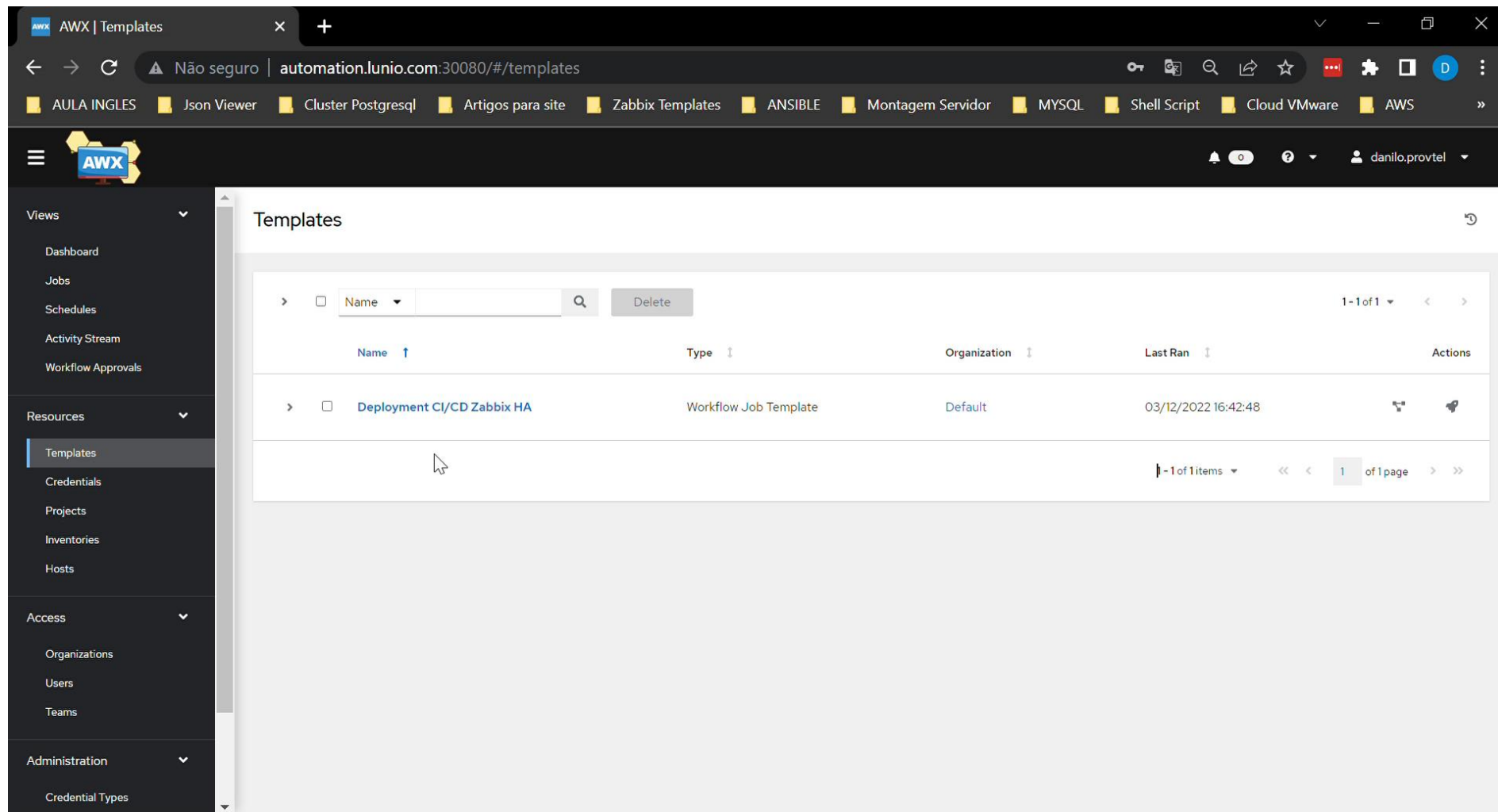
## 2. Criação de pipeline automatizada para criação de ambientes



The screenshot displays the Red Hat Ansible Tower interface. The left sidebar shows navigation options: Views (Dashboard, Jobs, Schedules, Activity Stream, Workflow Approvals), Resources (Templates, Credentials, Projects, Inventories, Hosts), Access (Organizations, Users, Teams), and Administration (Credential Types, Notifications, Management Jobs, Instance Groups, Instances, Applications, Execution Environments, Topology View). The main content area shows the 'Output' of a job named '01 - Meetup Recife 2023', which is marked as 'Successful'. The output is displayed in a terminal window with a search bar and a dropdown menu set to 'Stdout'. The output text is as follows:

```
0 [WARNING]: log file at /var/log/ansible.log is not writeable and we cannot create it, aborting
2 SSH password:
3 BECOME password[defaults to SSH password]:
4
5 PLAY [Executa healthcheck da máquina] ***** 15:22:53
6
7 TASK [Gathering Facts] ***** 15:22:53
8 ok: [zbx-node1]
9
10 TASK [Mostra informações] ***** 15:22:54
11 ok: [zbx-node1] => {
12   "msg": [
13     "Hostname: zabbixserver01",
14     "Versão do SO: Rocky 8.6 x86_64",
15     "Hardware: QEMU",
16     "CPU (Sockets / Cores): 1 / 4",
17     "Memória (Disponível / Total): 7.4 GB / 7.6 GB",
18     "Swap (Disponível / Total): 0.0 GB / 0.0 GB",
19     "IP principal: 38.242.130.66",
20     "Netmask: 255.255.248.0",
21     "MAC principal: 00:50:56:48:5c:ba",
22     "DNS: ['161.97.189.51', '161.97.189.52']",
23     "Todos os IPv4: ['10.88.0.1', '38.242.130.66']",
24     "Horário do servidor: 2023-03-10 19:22:54",
25     "Status SELINUX: {'status': 'disabled'}"
26   ]
27 }
28
29 PLAY RECAP ***** 15:22:54
30 zbx-node1      : ok=2   changed=0   unreachable=0   failed=0   skipped=0   rescued=0   ignored=0
```

## 2. Criação de pipeline automatizada para criação de ambientes



The screenshot shows the AWX (Ansible Automation Platform) interface in a browser. The browser address bar shows the URL `automation.lunio.com:30080/#/templates`. The page title is "Templates". On the left, there is a navigation sidebar with categories: Views (Dashboard, Jobs, Schedules, Activity Stream, Workflow Approvals), Resources (Templates, Credentials, Projects, Inventories, Hosts), Access (Organizations, Users, Teams), and Administration (Credential Types). The main content area displays a table of templates. The table has columns for Name, Type, Organization, Last Ran, and Actions. One template is listed: "Deployment CI/CD Zabbix HA", which is a "Workflow Job Template" under the "Default" organization, last ran on "03/12/2022 16:42:48".

Name	Type	Organization	Last Ran	Actions
Deployment CI/CD Zabbix HA	Workflow Job Template	Default	03/12/2022 16:42:48	

# PERGUNTAS

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