



**ZABBIX**  
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Webinar

# What's new in Zabbix 7.0 LTS

all our microphones are muted

ask your questions in Q&A, not in the Chat

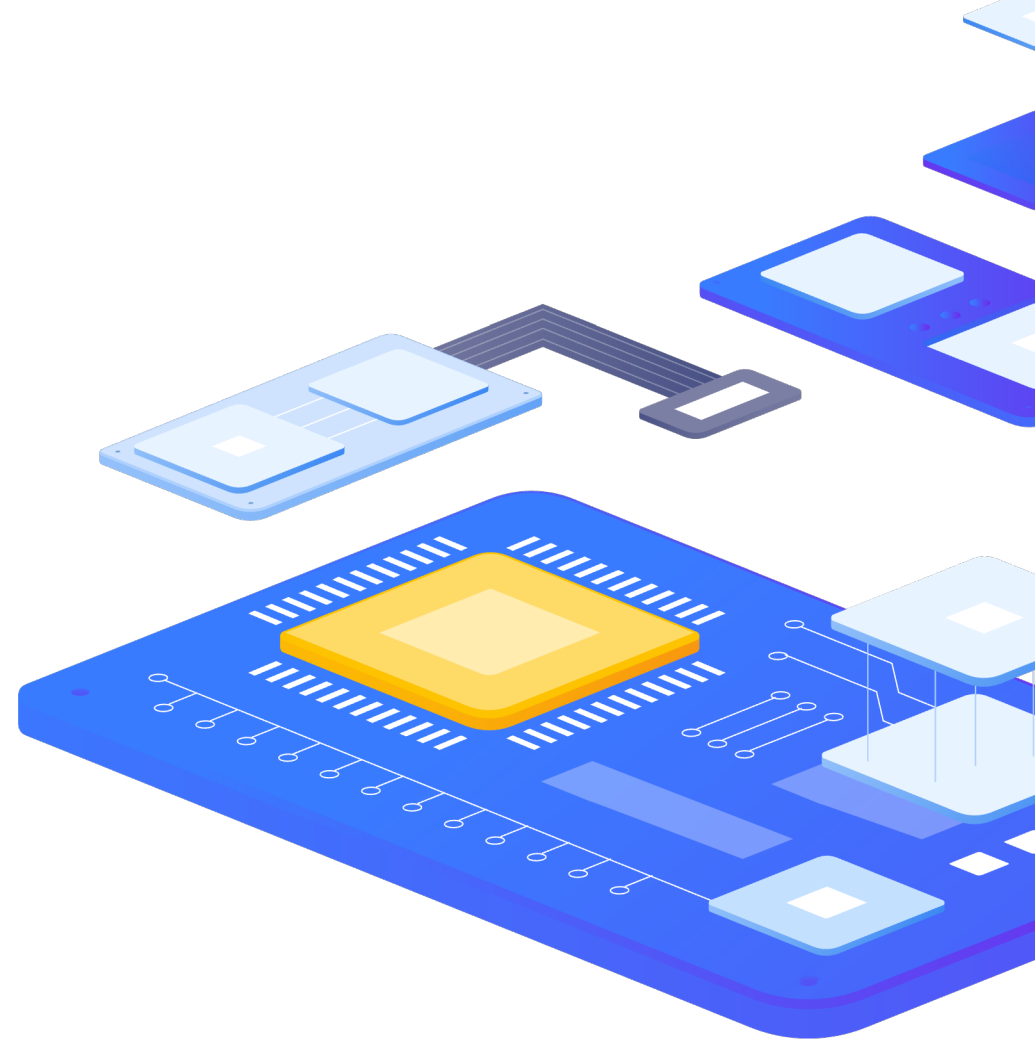
use Chat for discussion, networking or applause

ZABBIX 7.0 LTS



# Main Focus

Focus on enterprise grade features enabling **new use cases, better performance and out-of-the-box scalability**



1

Synthetic end-user web monitoring



# Synthetic end-user web monitoring

- ▶ Synthetic web monitoring
  - ▶ Simulate an interaction by a real user with a real browser
  - ▶ Performed by writing custom scripts
  - ▶ Test various aspects of a website or web application – availability, performance, transaction statuses and more.



# Synthetic end-user web monitoring

- ▶ Synthetic web monitoring in Zabbix
  - ▶ A Selenium Server or a plain WebDriver to perform synthetic web monitoring
  - ▶ Selenium Server utilizes a headless browser to perform tests
  - ▶ Selenium Server is not provided as a part of Zabbix packages
  - ▶ Most simple way to get started – Selenium Docker containers

# Synthetic end-user web monitoring

- ▶ Synthetic web monitoring in Zabbix
  - ▶ Point Zabbix server at the WebDriver URL
  - ▶ Browser pollers are responsible for polling Browser items

```
### Option: WebDriverURL
#   WebDriver interface HTTP[S] URL. For example http://localhost:4444 used with
#   Selenium WebDriver standalone server.
#
# Mandatory: no
# Default:
# WebDriverURL=
WebDriverURL=http://192.168.X.X:4444

### Option: StartBrowserPollers
#   Number of pre-forked instances of browser item pollers.
#
# Mandatory: no
# Range: 0-1000
# Default:
# StartBrowserPollers=1
StartBrowserPollers=3
```

# Synthetic end-user web monitoring

## ► New item type - Browser

Item

Item Tags Preprocessing

\* Name

www.initmax.com

Type

Browser

\* Key

initmax

Select

Type of information

Text

Parameters

Name	Value	Action
		<a href="#">Remove</a>

[Add](#)

\* Script

var browser = new Browser(Browser.chromeOptions());

\* Update interval

1m

Custom intervals

Type	Interval
<a href="#">Flexible</a> <a href="#">Scheduling</a>	50s

[Add](#)

\* Timeout

Global

Override

1m

Timeouts

\* History

Do not store

Store up to

31d

JavaScript

```
1 var browser = new Browser(Browser.chromeOptions());
2
3 try {
4     browser.navigate("https://www.initmax.com");
5     browser.collectPerfEntries();
6 }
7 finally {
8     return JSON.stringify(browser.getResult());
9 }

```

65341 characters remaining

Apply

Cancel

# Synthetic end-user web monitoring

- ▶ The Browser item uses JavaScript to collect data in JSON
  - ▶ The default script collects performance entries and session statistics
  - ▶ Website by Browser template is available for more complex scenarios

## Website by Browser

### Overview

### Requirements

Zabbix version: 7.0 and higher.

### Tested versions

This template has been tested on:

- ChromeDriver 124.0.6367.207, selenium-server-4.0.0-alpha-6

### Configuration

Zabbix should be configured according to the instructions in the Templates out of the box section.

### Setup

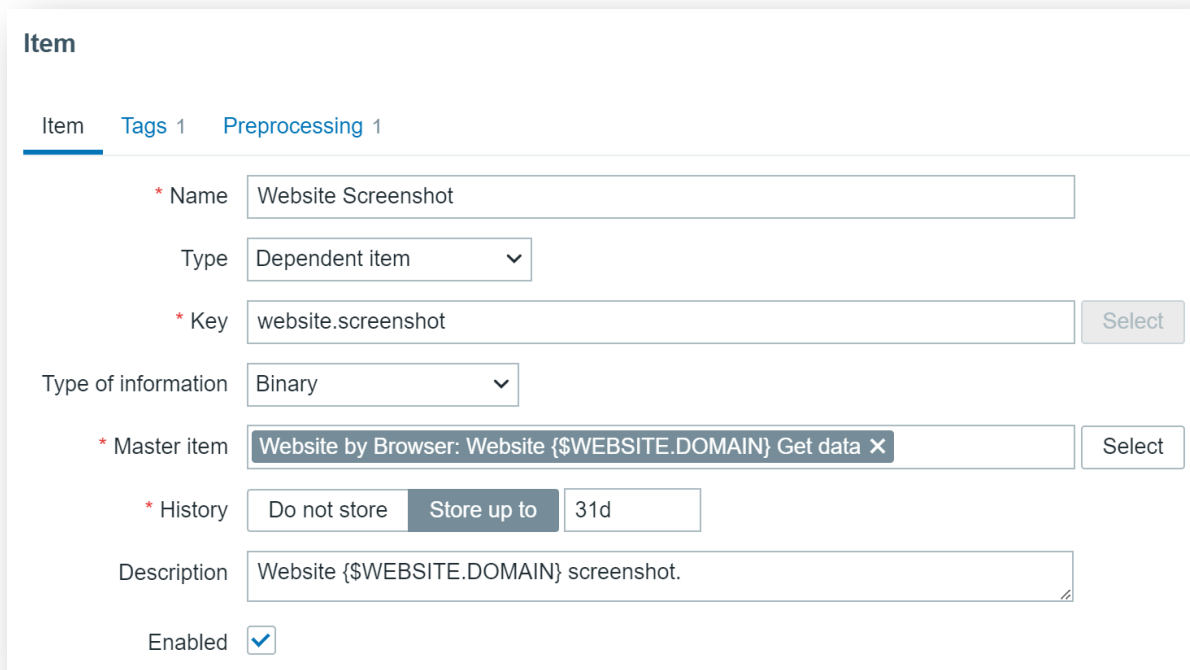
Install WebDriver. For more information, please refer to the Selenium WebDriver page. Run selenium-server. Add in configuration file WebDriver interface HTTP[S] URL. For example `http://localhost:4444`

# Synthetic end-user web monitoring

- ▶ Website by Browser template contains:
  - ▶ Items for website navigation and resource statistics
  - ▶ Current website screenshot
  - ▶ Triggers for slow load times and website availability
  - ▶ A dashboard displaying website screenshot and various performance statistics

# Synthetic end-user web monitoring

- ▶ The new Binary type of information can be used to collect and store images
  - ▶ Browser item can collect screenshots of the website in base64 format
  - ▶ It can be stored in a binary dependent item



The screenshot shows the 'Item' configuration page in Zabbix. The 'Item' tab is selected, and the 'Preprocessing' section shows one rule. The configuration is as follows:

Field	Value
Name	Website Screenshot
Type	Dependent item
Key	website.screenshot
Type of information	Binary
Master item	Website by Browser: Website {\$WEBSITE.DOMAIN} Get data
History	Do not store / Store up to 31d
Description	Website {\$WEBSITE.DOMAIN} screenshot.
Enabled	<input checked="" type="checkbox"/>

# Synthetic end-user web monitoring

- ▶ The Item history widget can now display screenshots:

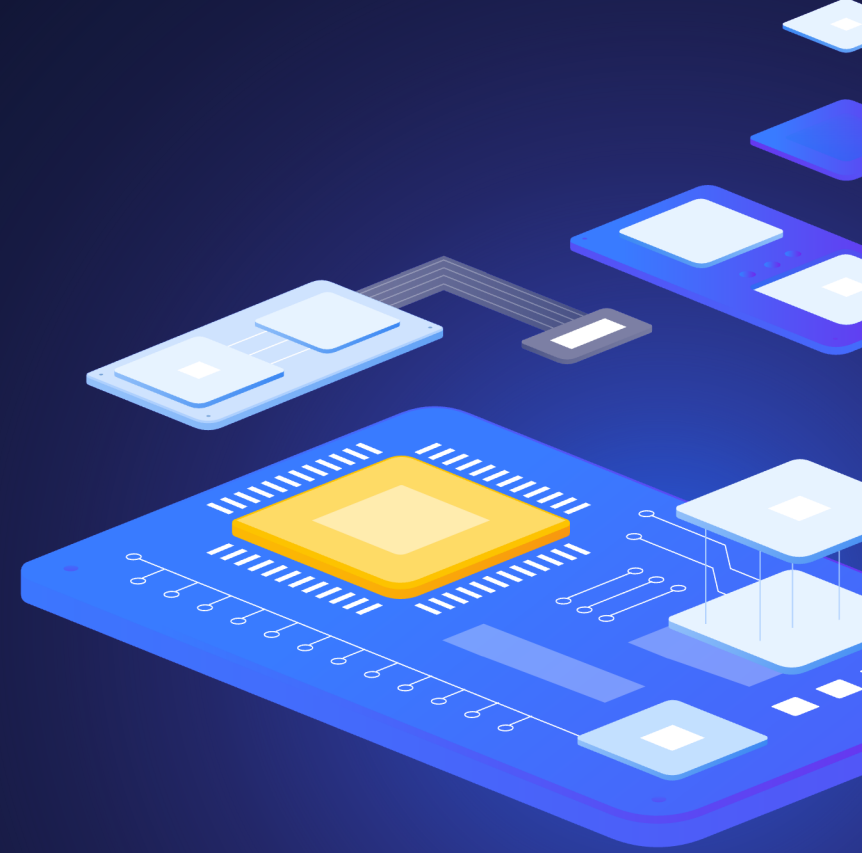


- ▶ TIP: <https://www.initmax.com/wiki/installation-and-basic-usage-of-browser-item/> EN

- ▶ TIP: <https://www.initmax.cz/wiki/instalace-a-zakladni-pouziti-pro-item-browser/> CZ

# 2

## Asynchronous data polling





# Data collectors

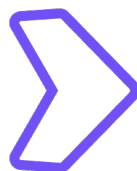
- ▶ Data in Zabbix is collected by various data collectors:
  - ▶ Pollers
  - ▶ Trappers
  - ▶ Pingers
  - ▶ etc.
- ▶ Poller processes can collect only a single metric at once:
  - ▶ As a result, hundreds of pollers are required in some scenarios
  - ▶ The maximum number of pollers is limited to 1000

# Specific poller types

- ▶ In Zabbix 7.0, specific poller types are introduced
  - ▶ SNMP poller
  - ▶ Zabbix Agent poller
  - ▶ HTTP check poller

Poller

Zabbix 6.0



SNMP Poller

Agent Poller

HTTP Agent  
Poller

Zabbix 7.0

# Asynchronous polling

- ▶ Each poller type now is an **asynchronous process**:
  - ▶ Up to 1000 values can be collected by each process in a single cycle
  - ▶ A separate thread is started to synchronize with configuration cache
- ▶ Asynchronous processes are a programming concept that allows tasks to be executed independently of each other and without blocking the main program's execution.

# Number of concurrent checks

- ▶ The maximum number of concurrent checks can be specified:
  - ▶ Specified by the MaxConcurrentChecksPerPoller value
  - ▶ The default value is 1000

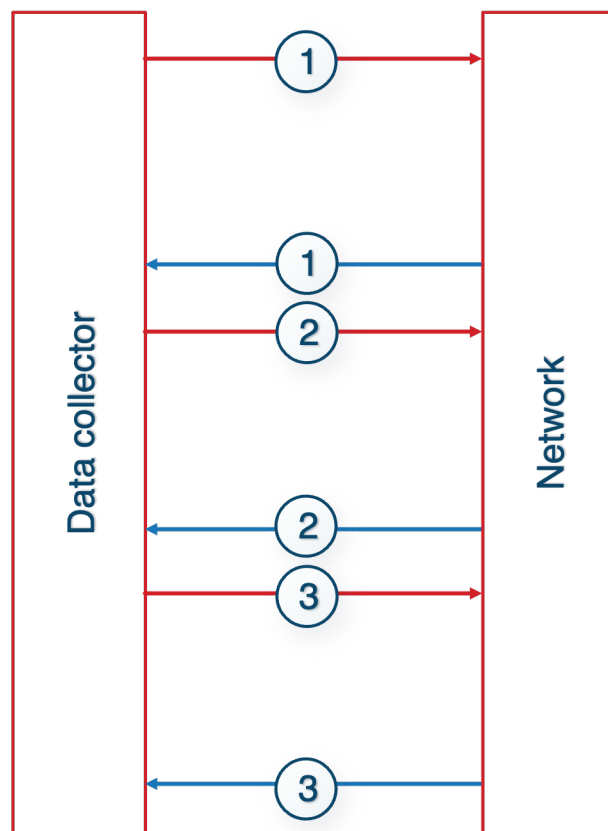
```
### Option: MaxConcurrentChecksPerPoller
#       Maximum number of asynchronous checks that can be executed at once
#
# Mandatory: no
# Range: 1-1000
# Default:

MaxConcurrentChecksPerPoller=1000
```

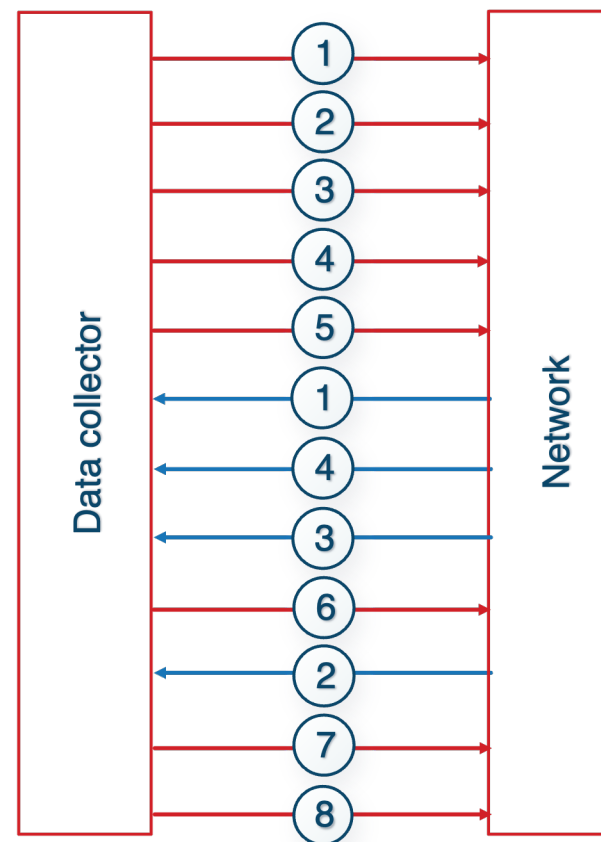
- ▶ TIP: <https://www.initmax.com/wiki/zabbix-7-0-and-increasing-system-limits/> EN
- ▶ TIP: <https://www.initmax.cz/wiki/zabbix-7-0-a-navyseni-systemovych-limitu/> CZ

# Concurrent checks

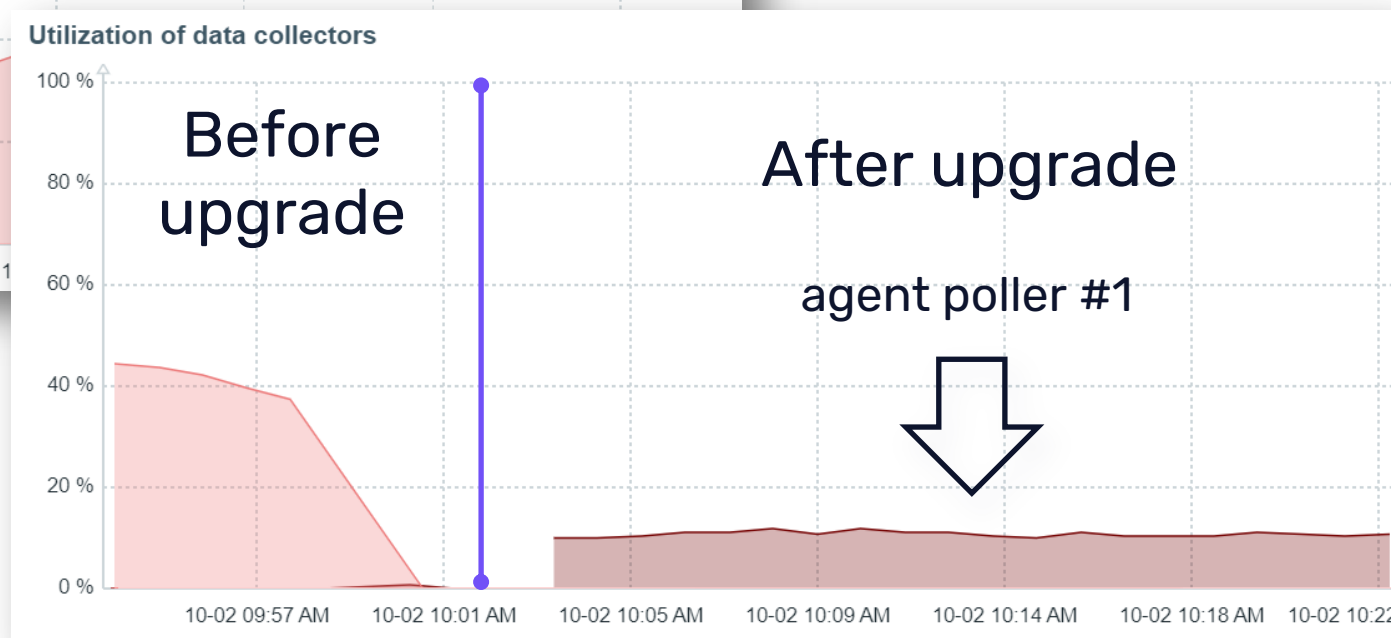
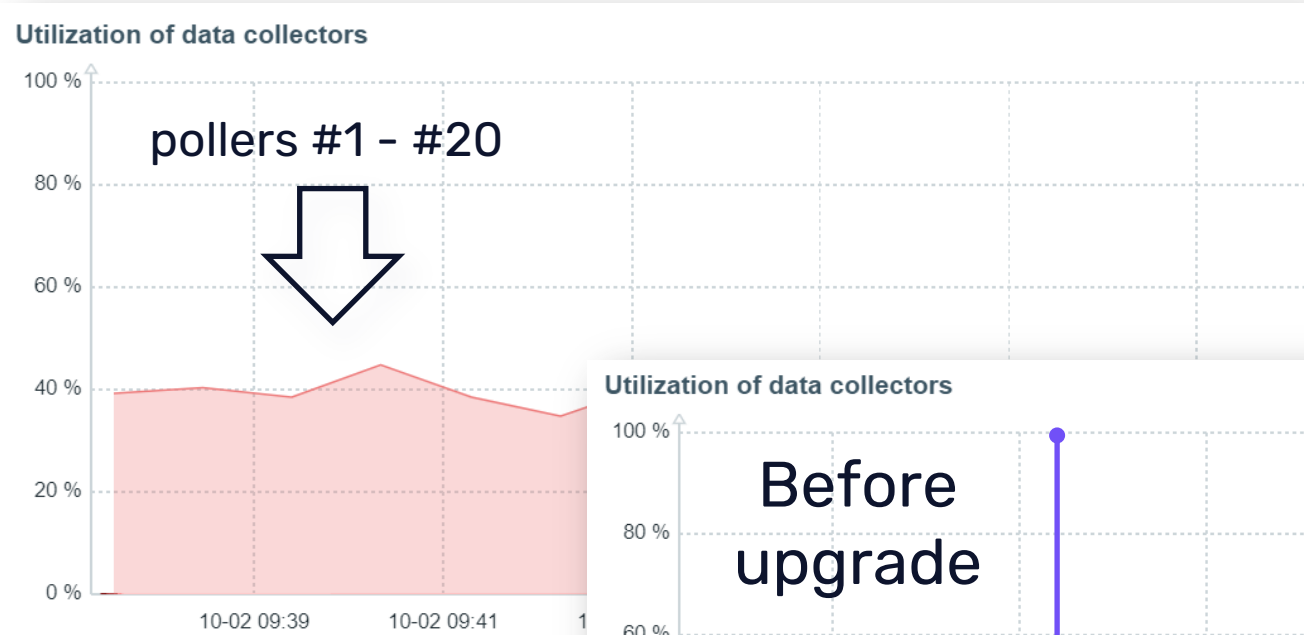
Synchronous data collection  
(Zabbix 6.0)



Asynchronous data collection  
(Zabbix 7.0)



# Zabbix 6.0 vs 7.0



3

Proxy high availability and load balancing



# Proxy groups

- ▶ **Proxy groups** are introduced to support LB and HA logic
- ▶ Hosts can be monitored by a proxy group or a single proxy

Host

Host IPMI Tags Macros Inventory Encryption Value mapping

\* Host name

Visible name

Templates

Name	Action
Linux by Zabbix agent active	<a href="#">Unlink</a> <a href="#">Unlink and clear</a>

\* Host groups

Interfaces No interfaces are defined.

[Add](#)

Description

Monitored by

Assigned proxy Proxy is not assigned yet.

Enabled ☒



# Proxy groups

- ▶ **Proxy groups** are introduced to support LB and HA logic
  - ▶ Hosts can be monitored by a proxy group or a single proxy

**Proxy group**

\* Name

\* Failover period

\* Minimum number of proxies

Description

Proxies [initMAX-proxy1](#), [initMAX-proxy2](#)

[Update](#) [Clone](#) [Delete](#) [Cancel](#)

**Proxy groups** [Create proxy group](#)

State [Any](#) [Online](#) [Degrading](#) [Offline](#) [Recovering](#) [Filter](#)

[Apply](#) [Reset](#)

<input type="checkbox"/> Name	State	Failover period	Online proxies	Minimum proxies	Proxies
<input type="checkbox"/> <a href="#">initMAX</a>	<span>Online</span>	1m	2	1	2 <a href="#">initMAX-proxy1</a> , <a href="#">initMAX-proxy2</a>

Displaying 1 of 1 found

**Host**

[Host](#) [IPMI](#) [Tags](#) [Macros](#) [Inventory](#) [Encryption](#) [Value mapping](#)

\* Host name

Visible name

Templates

Name	Action
<a href="#">Linux by Zabbix agent active</a>	<a href="#">Unlink</a> <a href="#">Unlink and clear</a>

[Select](#)

\* Host groups  [Select](#)

Interfaces [No interfaces are defined.](#)

[Add](#)

Description

Monitored by [Server](#) [Proxy](#) [Proxy group](#)

[Select](#)

Assigned proxy [Proxy is not assigned yet.](#)

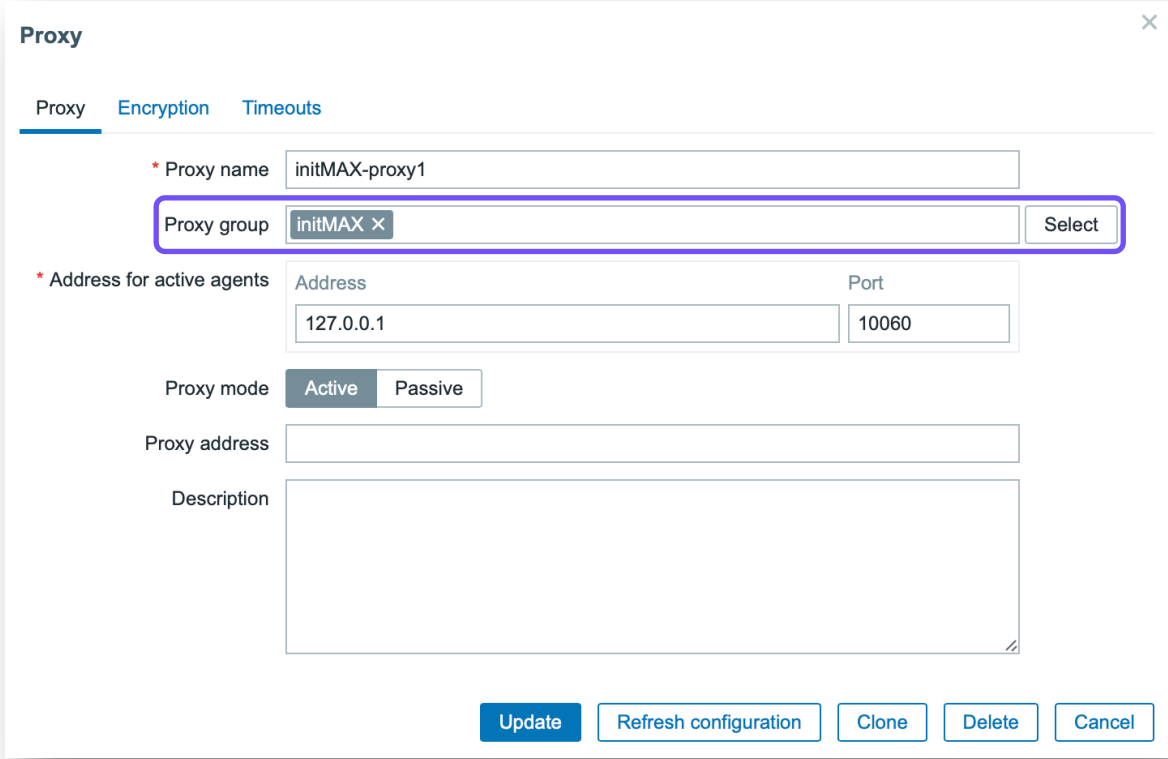
Enabled ☒

# Proxy groups

- ▶ More about proxy groups:
  - ▶ Failover period is used to decide when a proxy is online/offline
  - ▶ A minimal number of online proxies can be configured for a proxy group to be online
  - ▶ Proxies of older versions (and hosts assigned to them) will be excluded from host rebalancing
  - ▶ If a proxy group is offline (less than minimum number of proxies online), hosts assigned to that group will stop being monitored

# Proxy groups

- ▶ Proxies are assigned to proxy groups using the proxy configuration form:



The screenshot shows the 'Proxy' configuration form in Zabbix. The form has tabs for 'Proxy', 'Encryption', and 'Timeouts'. The 'Proxy' tab is active. The form contains the following fields and controls:

- Proxy name:** A text input field containing 'initMAX-proxy1'.
- Proxy group:** A dropdown menu showing 'initMAX' with a close icon (X). A 'Select' button is located to the right of the dropdown. This entire section is highlighted with a red rectangle.
- Address for active agents:** A section with two sub-fields:
  - Address:** A text input field containing '127.0.0.1'.
  - Port:** A text input field containing '10060'.
- Proxy mode:** Two radio buttons, 'Active' (selected) and 'Passive'.
- Proxy address:** A text input field.
- Description:** A large text area for additional information.

At the bottom of the form, there are five buttons: 'Update' (highlighted in blue), 'Refresh configuration', 'Clone', 'Delete', and 'Cancel'.

# Proxy groups

- ▶ Hosts are rebalanced if the following conditions are met:
  - ▶ The number of hosts assigned to a proxy differs from the average by twice or more
  - ▶ Difference is not less than 10 hosts
  - ▶ Hosts exceeding the average are unassigned from proxies
  - ▶ The unassigned hosts are then assigned to proxies with fewer hosts

# Proxy groups

► Proxy rebalancing example:



30



30



30



30



30

Average = 30

Unbalanced  
 $60 / 30 = 2$

Unbalanced  
 $15 / 30 = 0.5$

# Proxy groups

- ▶ When a new proxy is added, the group is automatically rebalanced
  - ▶ New average is calculated
  - ▶ Excess hosts are unassigned
  - ▶ Unassigned hosts are reassigned between proxies

# Zabbix Agent

- ▶ Agents need to be configured to accept connections from proxies in a proxy group:
  - ▶ For active agent mode, ServerActive needs to contain the IP of at least one (preferably multiple) proxy node groups
  - ▶ For passive agent mode, Server parameter needs to include IP addresses of all proxy nodes in a proxy group

4

Proxy memory buffer





# New proxy buffer modes

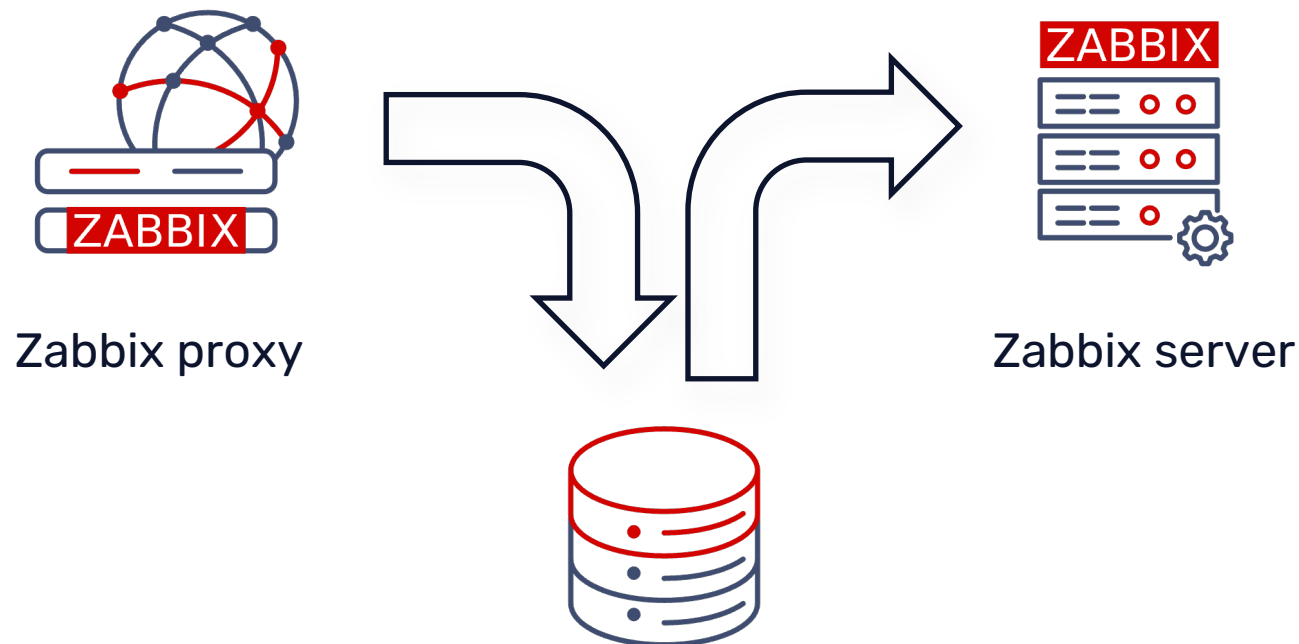
- ▶ Zabbix 7.0 will introduce new proxy buffer modes:
  - ▶ Disk                      Current behavior
  - ▶ Memory                    Data stored only in shared memory
  - ▶ Hybrid                     Buffer works in memory mode with DB as backup (Default now)

```
### Option: ProxyBufferMode
#   Specifies history, discovery and auto registration data storage
#   mechanism:
#   disk      - data are stored in database and uploaded from database
#   memory    - data are stored in memory and uploaded from memory.
#   hybrid    - the proxy buffer normally works like in memory mode until it
#               runs out of memory or the oldest record exceeds the configured
#               age
# Default:
# ProxyBufferMode=disk

ProxyBufferMode=hybrid
```

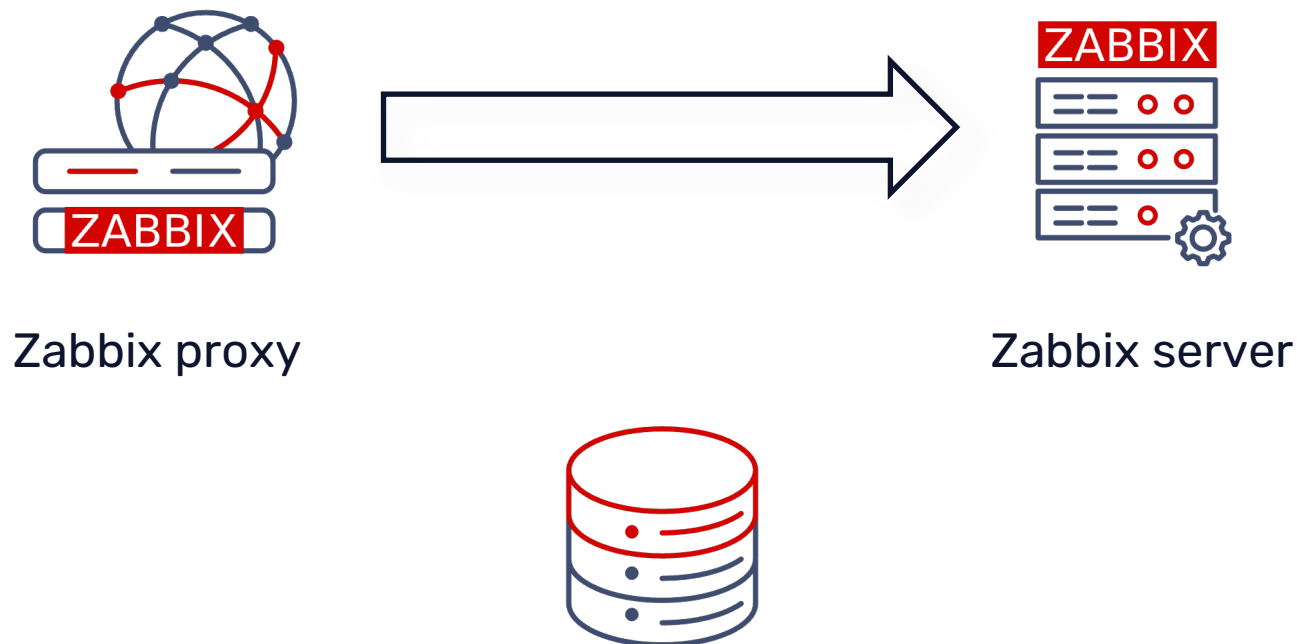
# Disk mode

- ▶ Each value collected by Zabbix proxy goes through a database:
  - ▶ Database (MySQL, Postgres, or SQLITE) required on each proxy
  - ▶ This may cause a bottleneck on large proxies



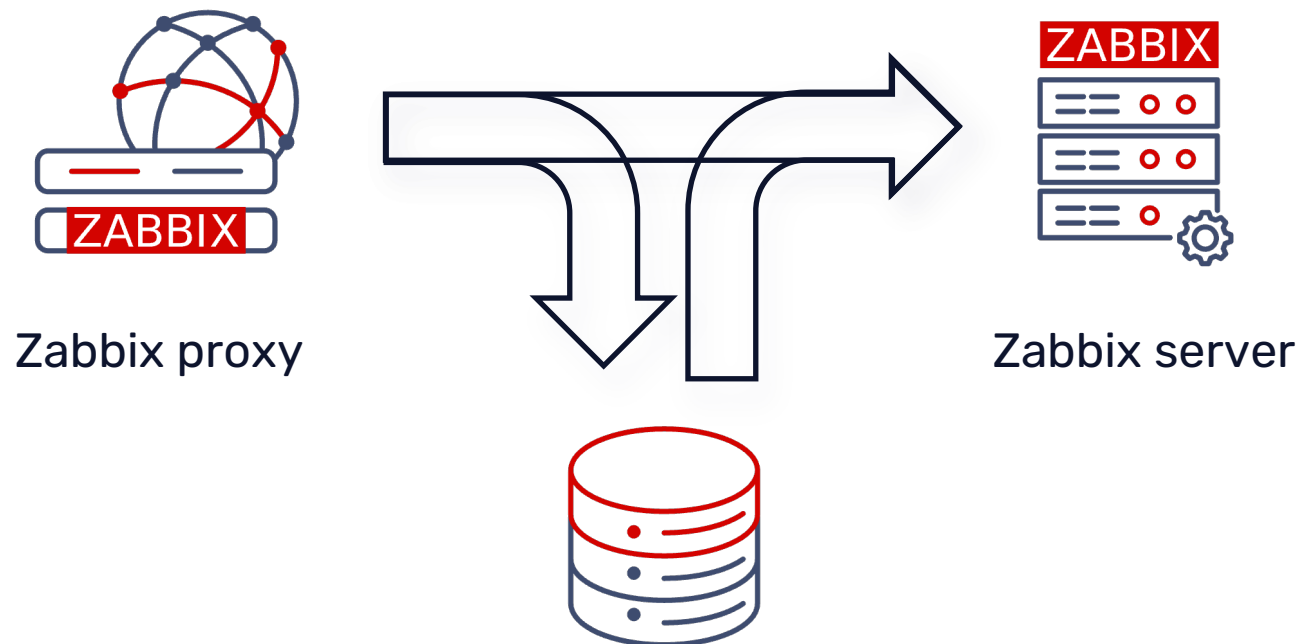
# Memory mode

- ▶ Data is sent to Zabbix server directly:
  - ▶ The history data is being stored in shared memory and uploaded from it
  - ▶ If buffer runs out of memory the old data will be discarded



# Hybrid mode

- ▶ Data is sent to the Zabbix server directly:
  - ▶ Buffer normally works like in the memory mode
  - ▶ The buffer is flushed in database if buffer does not have enough space



5

Centralized control of data collection timeouts



# Zabbix timeout

- ▶ Zabbix has a general timeout specified in the configuration file
  - ▶ Timeout affects all data collection on Zabbix server or proxy
  - ▶ Some item types have their own timeout (HTTP agent, Script)

```
### Option: Timeout
#     Specifies how long we wait for agent, SNMP device or external check
#
# Mandatory: no
# Range: 1-30
# Default:

Timeout=4
```

# Item level timeout

- ▶ Zabbix 7.0 will introduce item level timeout for most checks:
  - ▶ Timeout is defined using Zabbix graphical user interface
  - ▶ Range is from 1 to 600 seconds (10 minutes)
- ▶ Timeout can be defined on multiple levels:
  - ▶ On **Zabbix server** globally for all items
  - ▶ **Per proxy** for items monitored by the proxy
  - ▶ On **each item** individually

# Global timeouts

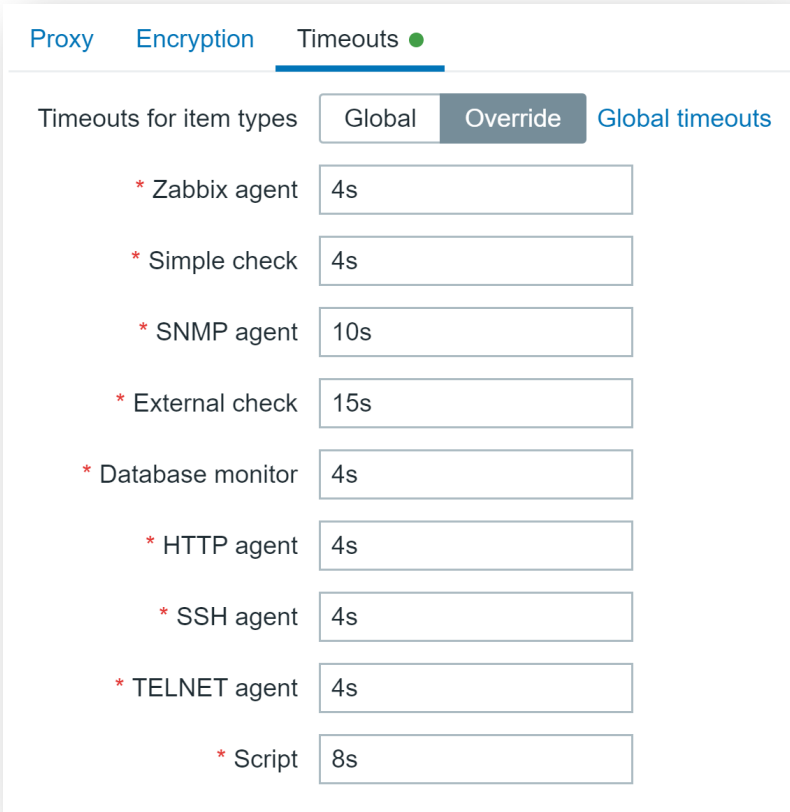
- ▶ Global timeouts can be defined in the Administration > General section

Timeouts for item types	
* Zabbix agent	<input type="text" value="4s"/>
* Simple check	<input type="text" value="4s"/>
* SNMP agent	<input type="text" value="4s"/>
* External check	<input type="text" value="4s"/>
* Database monitor	<input type="text" value="4s"/>
* HTTP agent	<input type="text" value="4s"/>
* SSH agent	<input type="text" value="4s"/>
* TELNET agent	<input type="text" value="4s"/>
* Script	<input type="text" value="4s"/>



# Proxy level timeouts

- ▶ A proxy level timeout will affect all items collected by a proxy
  - ▶ Each type can be tuned individually
  - ▶ Timeouts work as default values
  - ▶ Forced override can be enabled



The screenshot shows the Zabbix Proxy configuration interface with the 'Timeouts' tab selected. The interface includes tabs for 'Proxy', 'Encryption', and 'Timeouts'. Below the tabs, there are three buttons: 'Global', 'Override' (which is highlighted), and 'Global timeouts'. A list of item types with their corresponding timeout values is displayed:

Item Type	Timeout
* Zabbix agent	4s
* Simple check	4s
* SNMP agent	10s
* External check	15s
* Database monitor	4s
* HTTP agent	4s
* SSH agent	4s
* TELNET agent	4s
* Script	8s

# Individual timeouts

- ▶ By using item level timeout, it is possible to tune individual items:
  - ▶ Timeout defined globally or on proxy is used by default
  - ▶ Can be adjusted if needed for a specific item

Custom intervals

Type	Interval	Period	Action
<div><div>Flexible</div><div>Scheduling</div></div>	50s	1-7,00:00-24:00	<a href="#">Remove</a>
<a href="#">Add</a>			

\* Timeout

Global

Override

45s

[Timeouts](#)

\* History storage period

Do not keep history

Storage period

7d

# Timeout in the configuration file

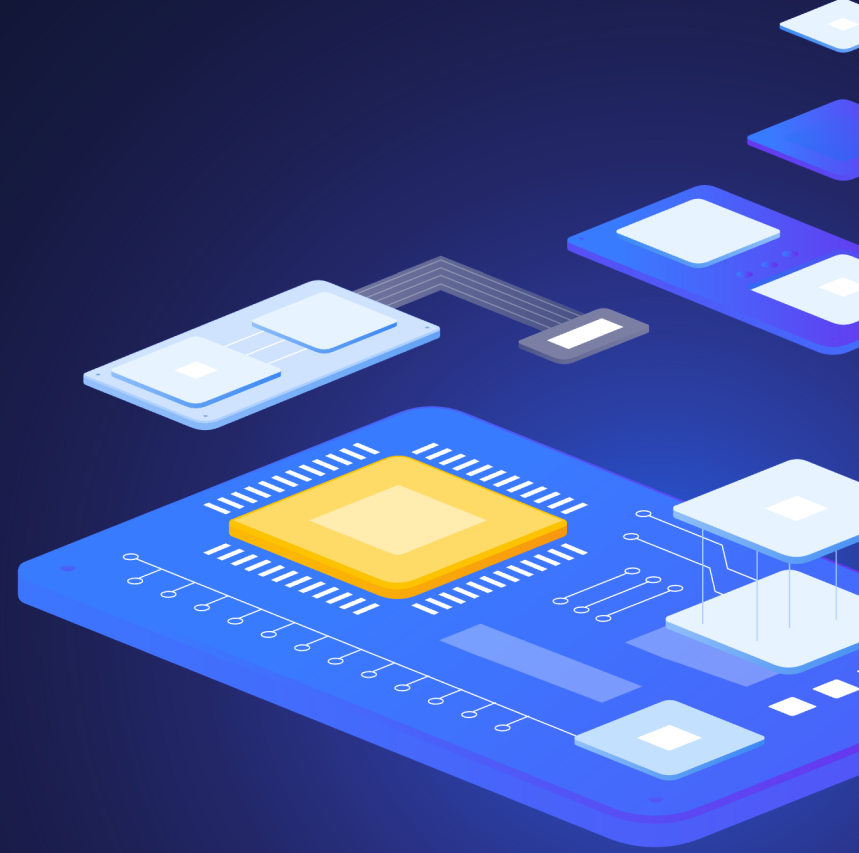
- ▶ The timeout setting from Zabbix server / proxy configuration file
  - ▶ Will become a default value for item timeout during the upgrade process
  - ▶ Will be used as a **timeout for communication** between server and proxy

```
### Option: Timeout
#     Specifies timeout for communications (in seconds).
# Mandatory: no
# Range: 1-30
# Default:
```

```
Timeout=4
```

6

Concurrent network discovery



# Network discovery

- ▶ Network discovery can be quite slow on large segments:
  - ▶ Each segment is processed by a single discoverer only
  - ▶ Each IP address and service is processed sequentially

\* Name

Office network discovery

Discovery by proxy

No proxy ▼

\* IP range

192.168.0.1-254

\* Update interval

1h

\* Checks

Type	Actions
SSH	<a href="#">Edit</a> <a href="#">Remove</a>
HTTP	<a href="#">Edit</a> <a href="#">Remove</a>
SNMPv2 agent "1.3.6.1.2.1.1.5.0"	<a href="#">Edit</a> <a href="#">Remove</a>
<a href="#">Add</a>	

# Sequential network discovery

## Single process

* Name	Office network discovery
Discovery by proxy	No proxy ▼
* IP range	192.168.0.1-254
* Update interval	1h
* Checks	Type SSH HTTP SNMPv2 agent "1.3.6.1.2.1.1.5.0" <a href="#">Add</a>

### Option: Timeout  
Timeout=3



# New processes

- ▶ Zabbix 7.0 introduces new processes
  - ▶ Discovery **manager**
  - ▶ Discovery **worker** (previously known as discoverer process)

```
### Option: StartDiscoverers
#       Number of pre-started instances of discovery workers.
#
# Mandatory: no
# Range: 0-1000
# Default:
```

```
StartDiscoverers=5
```

# Discovery rule configuration

- Concurrency is configured on discovery rule level

\* Name

Office network discovery

Discovery by proxy

No proxy ▼

\* IP range

192.168.0.1-254

\* Update interval

1h

Maximum concurrent checks

One

Unlimited

Custom

\* Checks

Type	Actions
SSH	<a href="#">Edit</a> <a href="#">Remove</a>
HTTP	<a href="#">Edit</a> <a href="#">Remove</a>
SNMPv2 agent "1.3.6.1.2.1.1.5.0"	<a href="#">Edit</a> <a href="#">Remove</a>
<a href="#">Add</a>	



# Concurrent network discovery

\* Name

Discovery by proxy

\* IP range

\* Update interval

Maximum concurrent checks ☐ One ☒ Unlimited ☐ Custom

\* Checks

Type

SSH

HTTP

SNMPv2 agent "1.3.6.1.2.1.1.5.0"

[Add](#)

	#1	#2	#3
192.168.0.1	SSH	HTTP	SNMP
192.168.0.2	SSH	HTTP	SNMP
192.168.0.3	SSH	HTTP	SNMP
192.168.0.4	SSH	HTTP	SNMP
192.168.0.5	SSH	HTTP	SNMP
192.168.0.6	SSH	HTTP	SNMP

# Internal monitoring

- ▶ New **internal items** are introduced:
  - ▶ The count of network checks enqueued monitored in the discovery queue
  - ▶ Utilization of discovery manager and workers

<input type="checkbox"/>	Name ▲	Triggers	Key	Interval	History	Trends	Type
<input type="checkbox"/>	... Zabbix server: Discovery queue		zabbix[discovery_queue]	1m	1w	365d	Zabbix internal
<input type="checkbox"/>	... Zabbix server: Utilization of discovery manager internal processes, in %	<u>Triggers</u> 1	zabbix[process,discovery manager,avg,busy]	1m	1w	365d	Zabbix internal
<input type="checkbox"/>	... Zabbix server: Utilization of discovery worker internal processes, in %	<u>Triggers</u> 1	zabbix[process,discovery worker,avg,busy]	1m	1w	365d	Zabbix internal

7

Sending metrics over HTTP



# history.push

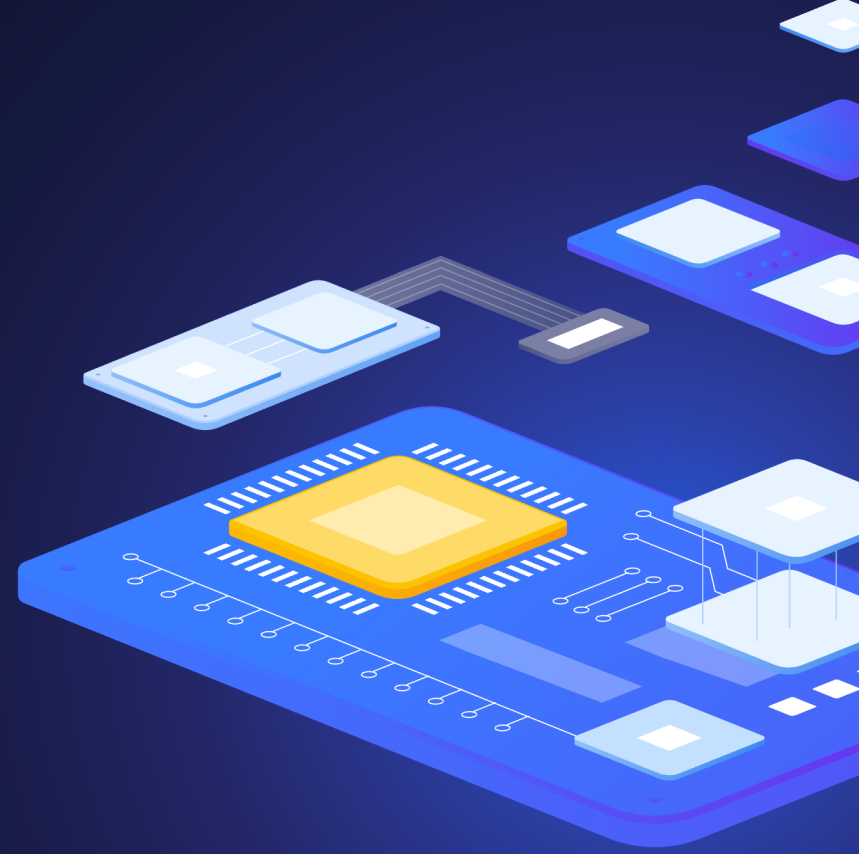
- ▶ New API method – [history.push](#)
  - ▶ Data received by the history.push method can only be accepted by items of Zabbix Trapper type and HTTP Agent type with Enable trapping ON
  - ▶ Sender's IP will be verified against the Allow hosts configuration parameter
  - ▶ Permissions to execute the API method can be added/removed in user role configuration

# history.push – example request

```
{
  "jsonrpc": "2.0",
  "method": "history.push",
  "params": [
    {
      "itemid": 10600,
      "value": "[Tue Jun 12 06:01:35 2023] [error] [client 1.2.3.4] File does not exist: /var/www/html/robots.txt",
      "clock": 1690891294,
      "ns": 454409041
    },
  ],
  "id": 1
}
```

8

Custom input in frontend scripts



# Custom input in frontend scripts

- ▶ Scripts can use `{MANUALINPUT}` macros to reference custom input data

Script

\* Name

Scope

Menu path

Type

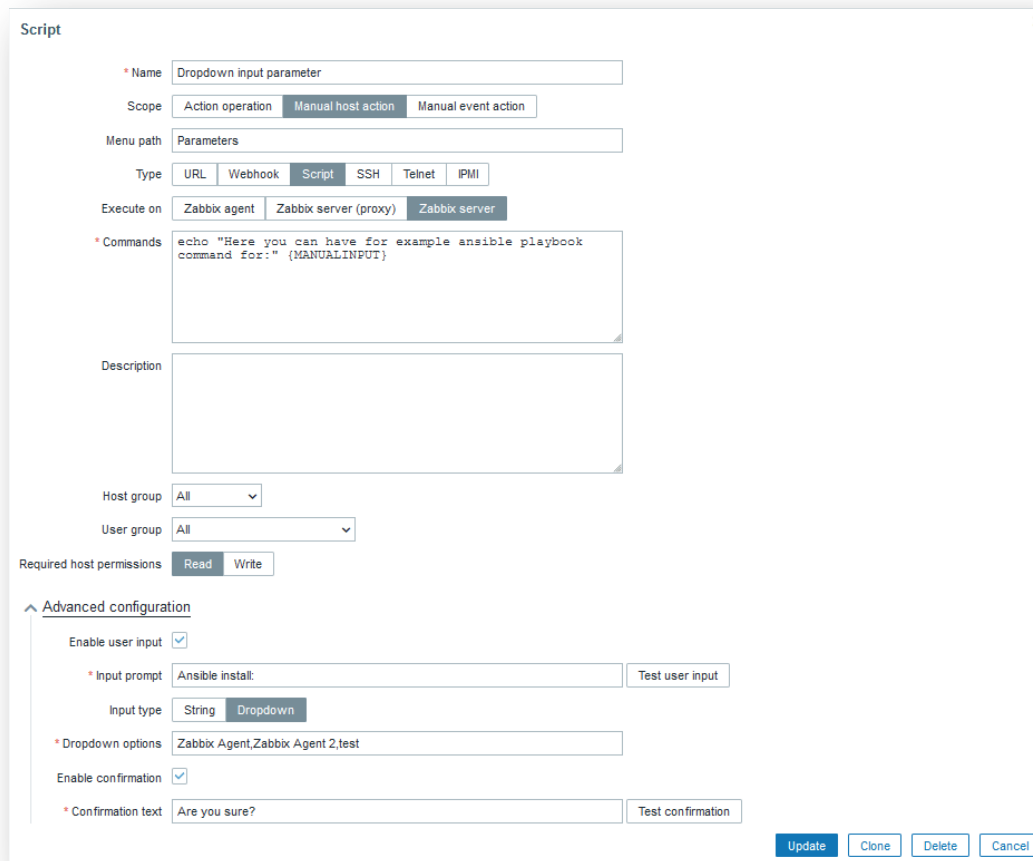
Execute on

\* Commands 

```
echo "Here you can have for example ansible playbook  
command for:" {MANUALINPUT}
```

# Custom input in frontend scripts

- ▶ Input data can be specified in a **comma-separated list of options**, or use any string matching a pattern



The screenshot shows the 'Script' configuration form in Zabbix. The 'Name' field is 'Dropdown input parameter'. The 'Scope' is 'Manual host action'. The 'Menu path' is 'Parameters'. The 'Type' is 'Script'. The 'Execute on' is 'Zabbix server'. The 'Commands' field contains the text: `echo "Here you can have for example ansible playbook command for:" {MANUALINPUT}`. The 'Description' field is empty. The 'Host group' is 'All' and the 'User group' is 'All'. The 'Required host permissions' are 'Read' and 'Write'. The 'Advanced configuration' section is expanded, showing 'Enable user input' checked. The 'Input prompt' is 'Ansible install:'. The 'Input type' is 'Dropdown'. The 'Dropdown options' are 'Zabbix Agent,Zabbix Agent 2,test'. 'Enable confirmation' is checked. The 'Confirmation text' is 'Are you sure?'. At the bottom right are buttons for 'Update', 'Clone', 'Delete', and 'Cancel'.

Script

\* Name: Dropdown input parameter

Scope: Action operation Manual host action Manual event action

Menu path: Parameters

Type: URL Webhook Script SSH Telnet IPMI

Execute on: Zabbix agent Zabbix server (proxy) Zabbix server

\* Commands: `echo "Here you can have for example ansible playbook command for:" {MANUALINPUT}`

Description:

Host group: All

User group: All

Required host permissions: Read Write

Advanced configuration

Enable user input: ☒

\* Input prompt: Ansible install: Test user input

Input type: String Dropdown

\* Dropdown options: Zabbix Agent,Zabbix Agent 2,test

Enable confirmation: ☒

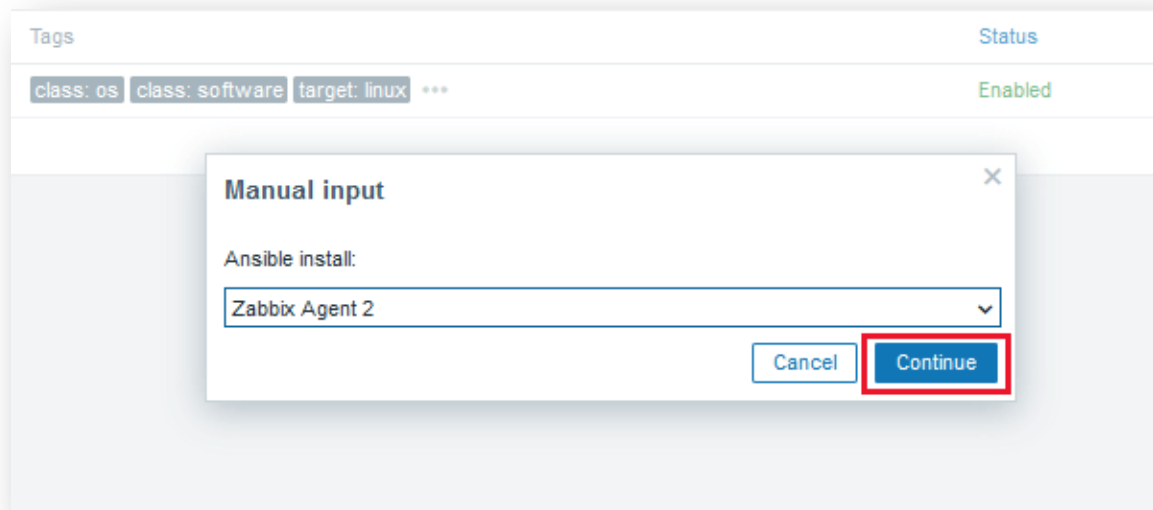
\* Confirmation text: Are you sure? Test confirmation

Update Clone Delete Cancel



# Custom input in frontend scripts

- ▶ Input data can be specified in a **comma-separated list of options**, or use any string matching a pattern



The screenshot shows the Zabbix frontend interface. In the background, there is a table with the title 'Tags'. The table has two columns: 'Tags' and 'Status'. The first row of data contains the tags 'class: os', 'class: software', and 'target: linux', followed by three dots. The status for this row is 'Enabled'. Overlaid on top of this table is a 'Manual input' dialog box. The dialog box has a title bar with a close button. Inside, it says 'Ansible install:' followed by a dropdown menu that currently shows 'Zabbix Agent 2'. At the bottom of the dialog box are two buttons: 'Cancel' and 'Continue'. The 'Continue' button is highlighted with a red rectangular border.

Tags	Status
class: os class: software target: linux ...	Enabled

**Manual input**

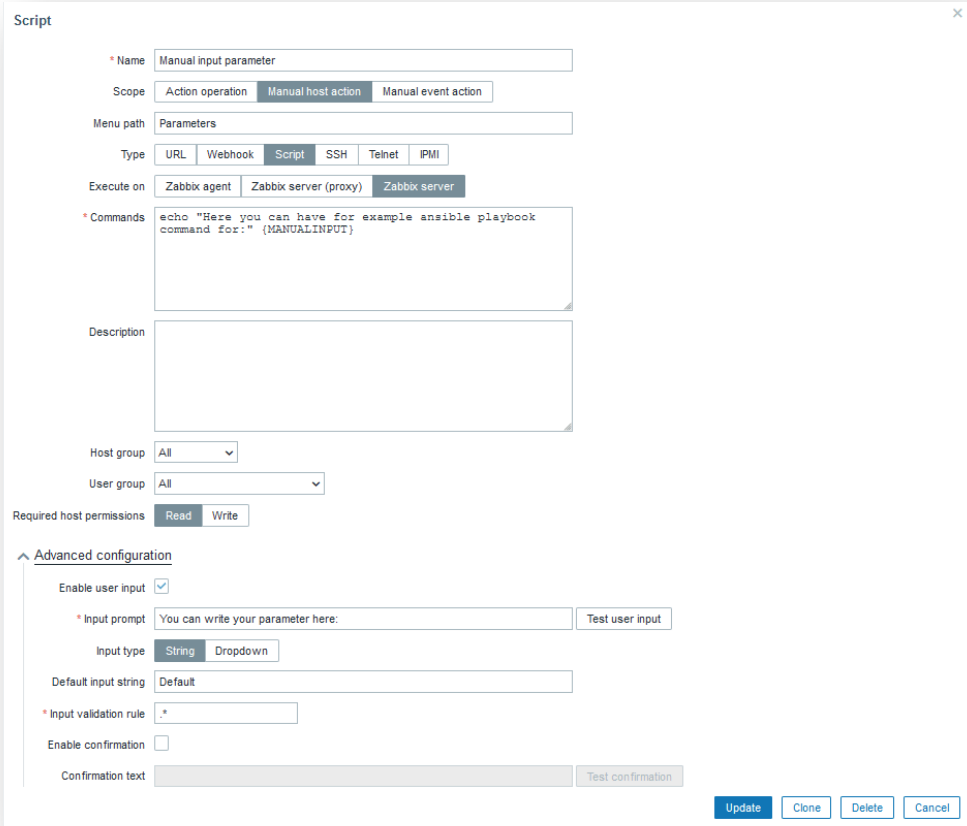
Ansible install:

Zabbix Agent 2

Cancel Continue

# Custom input in frontend scripts

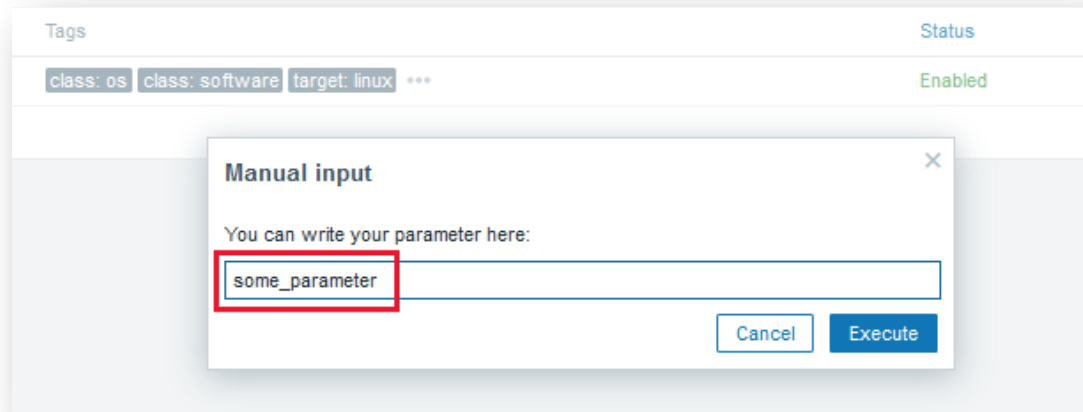
- ▶ Input data can be specified in a comma-separated list of options, or use **any string matching a pattern**



The screenshot shows the 'Script' configuration form in Zabbix. The 'Name' field is 'Manual input parameter'. The 'Scope' is 'Manual host action'. The 'Menu path' is 'Parameters'. The 'Type' is 'Script'. The 'Execute on' is 'Zabbix server'. The 'Commands' field contains the text: `echo "Here you can have for example ansible playbook command for:" (MANUALINPUT)`. The 'Description' field is empty. The 'Host group' is 'All' and the 'User group' is 'All'. The 'Required host permissions' are 'Read' and 'Write'. The 'Advanced configuration' section is expanded, showing 'Enable user input' checked. The 'Input prompt' is 'You can write your parameter here:'. The 'Input type' is 'String'. The 'Default input string' is 'Default'. The 'Input validation rule' is '\*'. The 'Enable confirmation' checkbox is unchecked. The 'Confirmation text' field is empty. At the bottom right, there are buttons for 'Update', 'Clone', 'Delete', and 'Cancel'.

# Custom input in frontend scripts

- ▶ Input data can be specified in a comma-separated list of options, or use **any string matching a pattern**



The screenshot shows the Zabbix frontend interface. In the background, the 'Tags' configuration page is visible, showing a list of tags: 'class: os', 'class: software', and 'target: linux', followed by a 'Status' indicator set to 'Enabled'. Overlaid on this is a 'Manual input' dialog box. The dialog box has a title bar with a close button. Inside, it says 'You can write your parameter here:' followed by a text input field containing the text 'some\_parameter'. The input field is highlighted with a red rectangle. At the bottom right of the dialog box are two buttons: 'Cancel' and 'Execute'.

9

New ways to visualize your data



# New widgets in Zabbix 7.0

- ▶ Various new widgets are introduced in Zabbix 7.0
  - ▶ Honeycomb
  - ▶ Gauge
  - ▶ Pie chart
  - ▶ Host and item navigator
  - ▶ Top triggers
  - ▶ Item history
- ▶ TIP: <https://git.initmax.cz/initMAX-Public> (Additional widgets and modules for free)

# Honeycomb

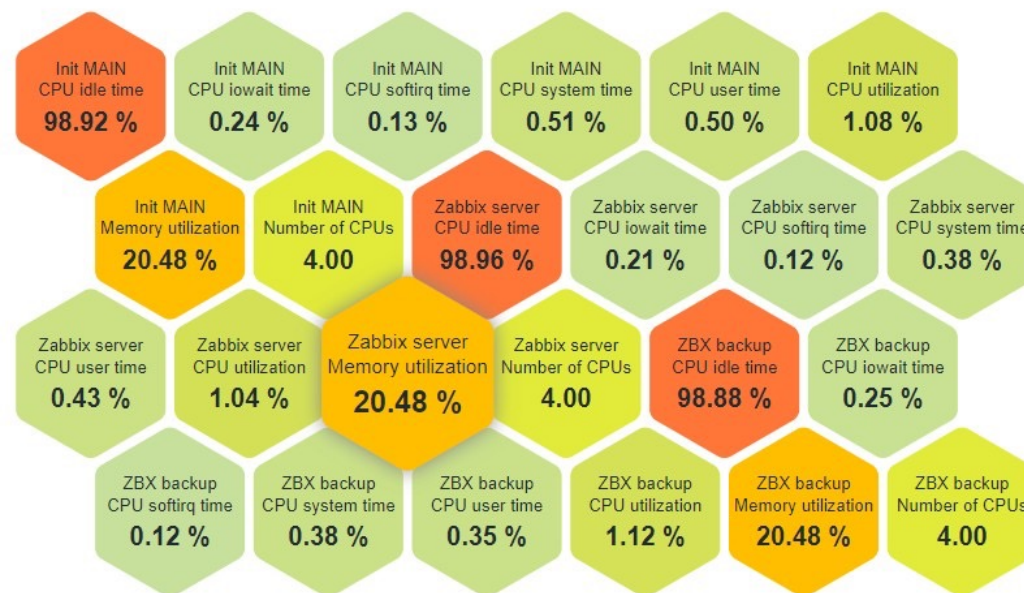
Holistic overview of large clusters of metrics

Efficient and granular data selection

Zoom in on each cell

Compare metrics against thresholds

Send out source data for enhanced interactivity

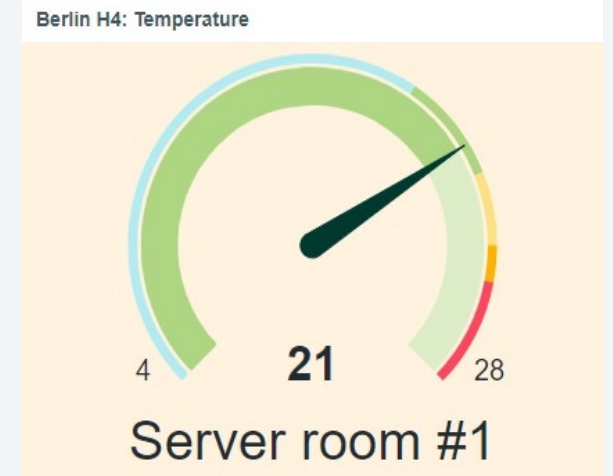
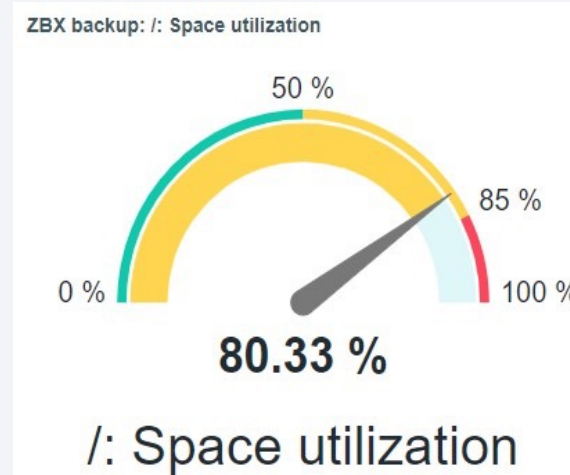


# Gauge

Monitor a specific metric in relation to thresholds

Real-time performance monitoring

Customizable visual representation



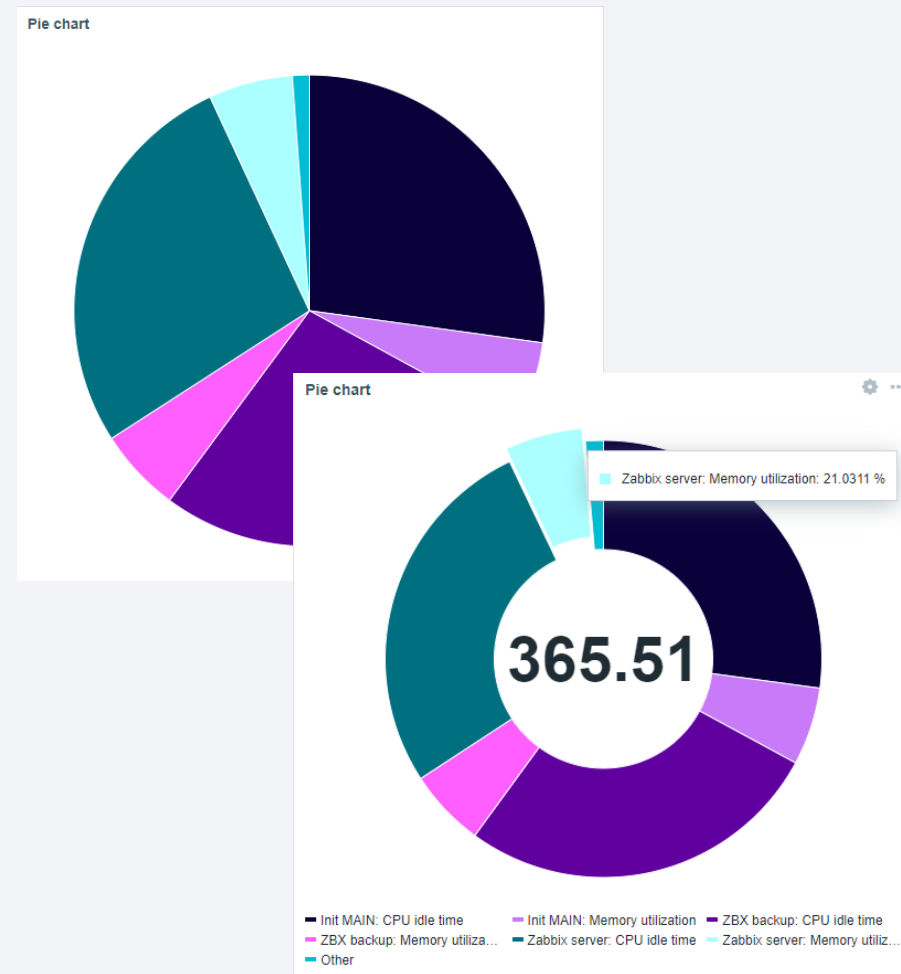
# Pie charts

Interactive monitoring data display

Breakdown of metrics by dimensions

- › Select and separate data by host and item pattern
- › Customize colors, sizing, units, and more
- › Aggregate by item or data set
- › Merge sectors below a threshold

Total value comparison





# Top triggers

Display critical issues with the highest number of problems

Improve time management and resource allocation

Customize and filter data displayed for precise issue troubleshooting

Top triggers			
Host	Trigger	Severity	Number of problems
Zabbix server	/: Disk space is low	Warning	1
Berlin MAIN	/: Disk space is low	Warning	1
Zabbix server	/var/snap/firefox/common/host-hunspell: Disk space is low	Warning	1
Berlin MAIN	/var/snap/firefox/common/host-hunspell: Disk space is low	Warning	1
Zabbix server	Zabbix server: Version has changed	Information	1
ZBX backup	Zabbix server: Version has changed	Information	1
Berlin MAIN	Zabbix server: Version has changed	Information	1

# New widgets in Zabbix 7.0

► New widgets enable a variety of new visualization use-cases



# 10

Dynamic dashboard widget navigation



# Dynamic dashboard widget navigation

- ▶ A new communication framework has been introduced for dashboard widgets, enabling communication between widgets
  - ▶ A widget can behave as a data source for other widgets
  - ▶ Information displayed in dashboard widget is dynamically updated based on the data source
  - ▶ Widgets can serve as a host or item data source

# Dynamic dashboard widget navigation

Host-based widget

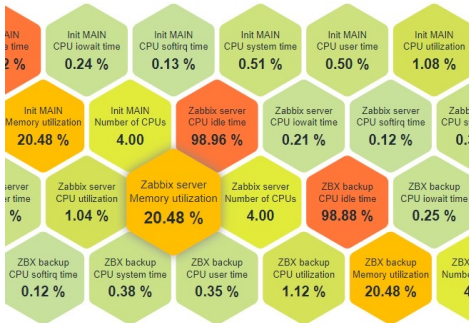
◀ Host and item-based widget ▶

Item-based widget

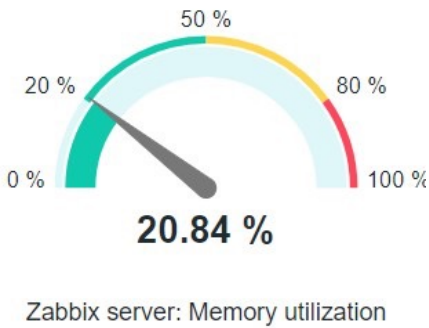
Top triggers

Host	Trigger	Severity	Numb
Zabbix server	/var/snap/firefox/common/host-hunspell: Disk space is low	Warning	1
Zabbix server	Linux: Zabbix server has been restarted	Warning	1

Host ID



Item ID



Host navigator

◀ Item navigator ▶

Item-based widget

Host navigator

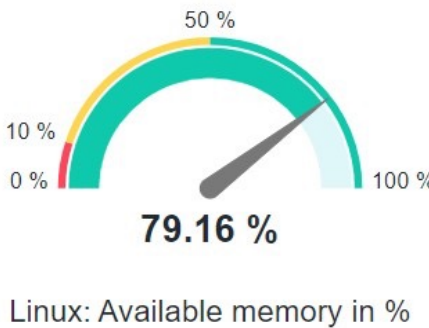
▲ Tag value
▲ Host group 1
Server 1
Server 2
▼ Host group 2

Host ID

Item navigator

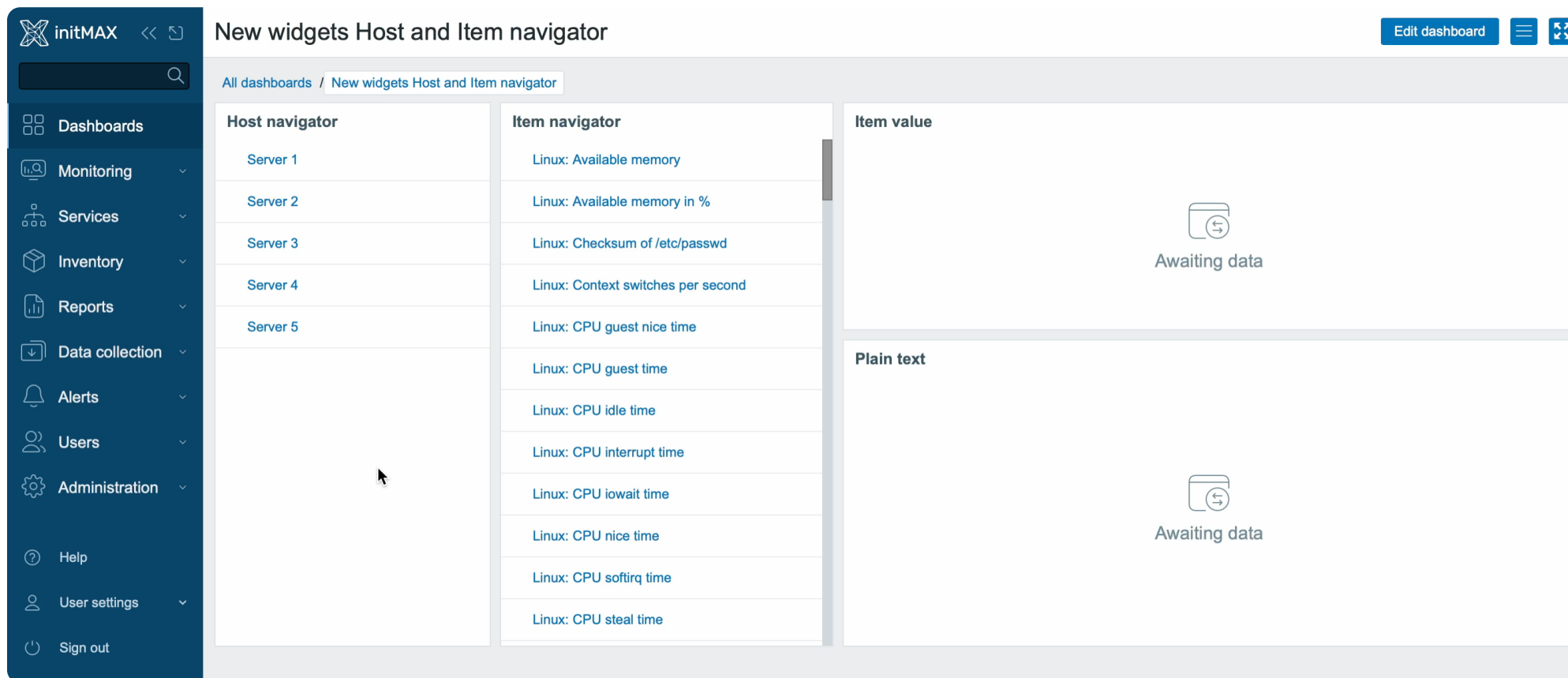
▲ Linux servers
▲ Server 01
CPU Load
Free disk space on /
▲ Windows servers
▲ MS Exchange
AD status

Item ID



# Dynamic dashboard widget navigation

- ▶ A new communication framework has been introduced for dashboard widgets, enabling communication between widgets

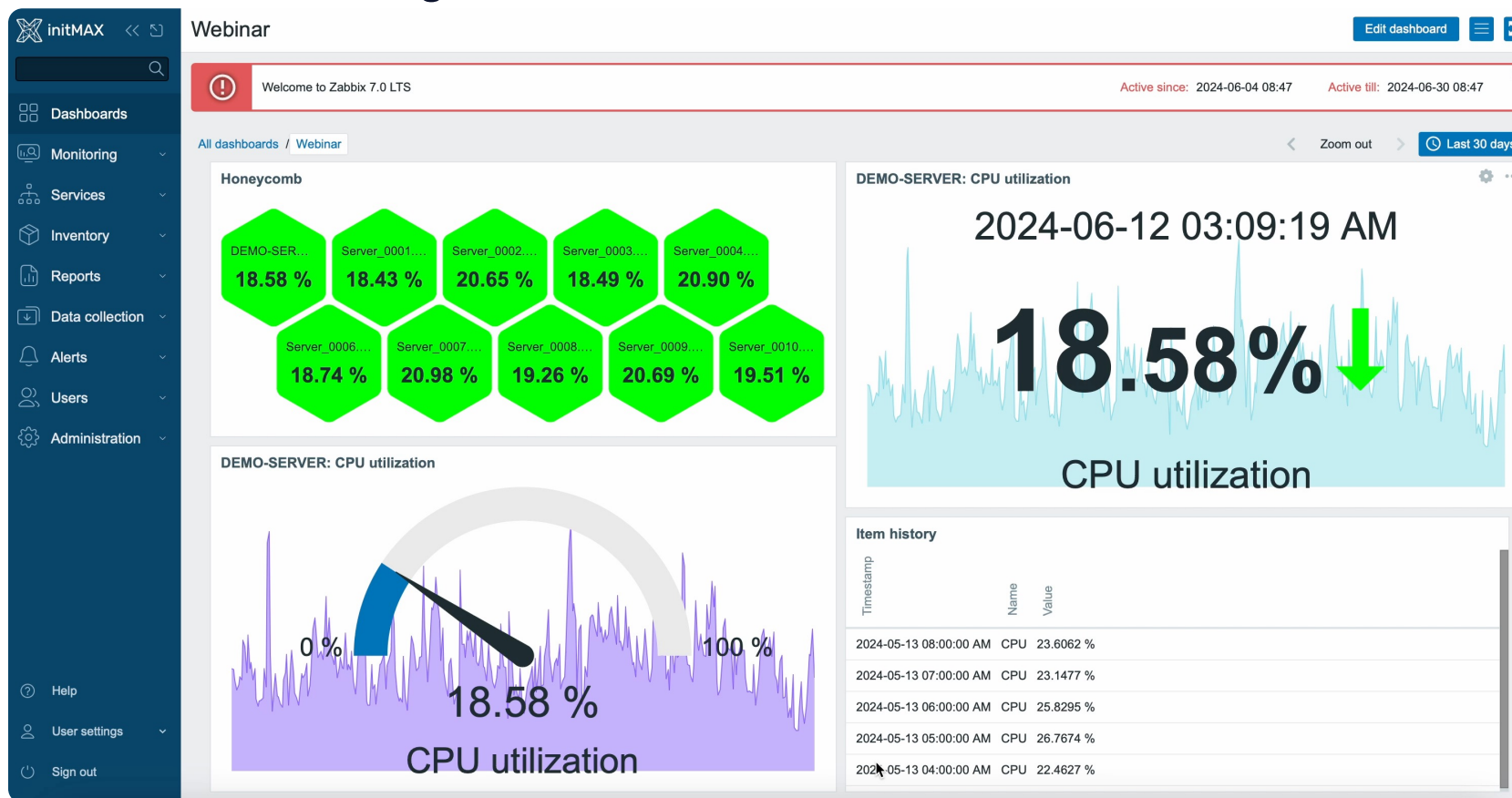


The screenshot displays the Zabbix 7.0 LTS dashboard interface. On the left is a dark blue sidebar with navigation links: Dashboards, Monitoring, Services, Inventory, Reports, Data collection, Alerts, Users, Administration, Help, User settings, and Sign out. The main content area is titled "New widgets Host and Item navigator". It features a breadcrumb trail "All dashboards / New widgets Host and Item navigator". The dashboard is divided into three columns. The first column, "Host navigator", lists five servers: Server 1, Server 2, Server 3, Server 4, and Server 5. The second column, "Item navigator", lists various Linux system metrics: Linux: Available memory, Linux: Available memory in %, Linux: Checksum of /etc/passwd, Linux: Context switches per second, Linux: CPU guest nice time, Linux: CPU guest time, Linux: CPU idle time, Linux: CPU interrupt time, Linux: CPU iowait time, Linux: CPU nice time, Linux: CPU softirq time, and Linux: CPU steal time. The third column contains two large widgets. The top widget, "Item value", and the bottom widget, "Plain text", both display an icon of a document with a circular arrow and the text "Awaiting data". In the top right corner of the dashboard, there are buttons for "Edit dashboard", a hamburger menu icon, and a full-screen icon.



# Dynamic dashboard widget navigation

- ▶ A new communication framework has been introduced for dashboard widgets, enabling communication between widgets



# Host dashboard widgets

## System performance

All hosts / Zabbix server / System performance

From: now-1h To: now

Last 2 days Yesterday Today  
Last 7 days Day before yesterday Today so far  
Last 30 days This day last week This week Last 30 minutes

Dashboard System performance Network interfaces System performance Zabbix server health Zabbix server processes

## Host dashboards

All hosts / Zabbix server

Network interfaces Server health System performance Zabbix server health Zabbix server processes

### CPU and Memory status

Metric	Value
CPU idle time	98.71 %
CPU iowait time	0.16 %
CPU softirq time	0.15 %
CPU system time	0.49 %
CPU user time	0.48 %
CPU utilization	1.39 %
Memory utilization	19.42 %
Number of CPUs	4.00

### CPU utilization

0 % 100 %

1.39 %

### Memory information

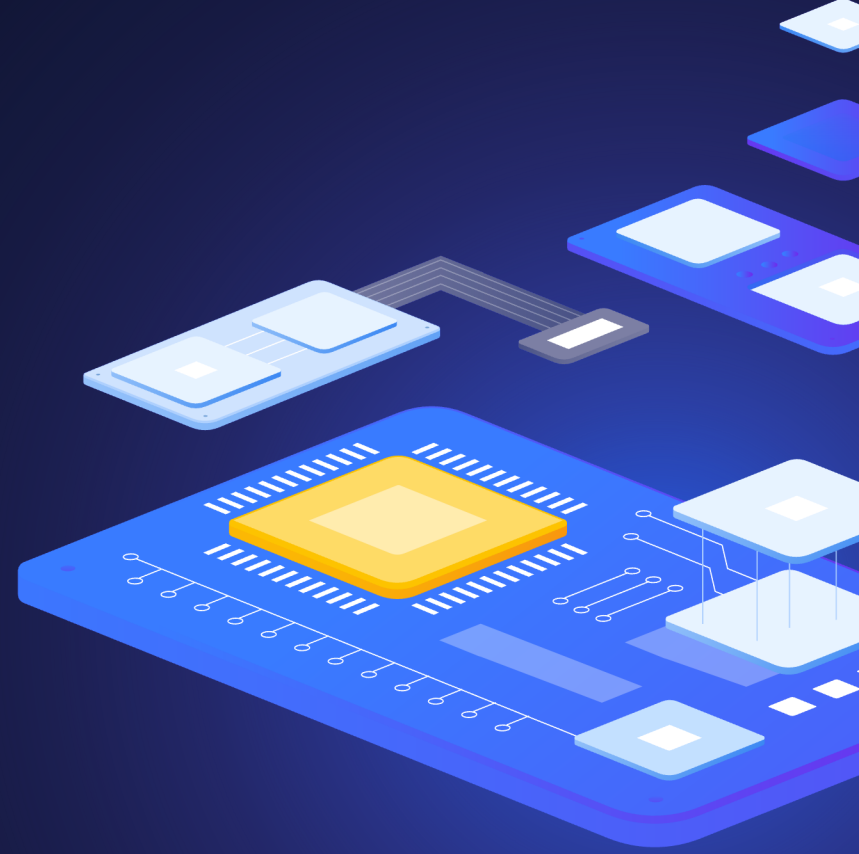
100.00

Legend: Zabbix server: Linux: Availabl... Zabbix server: Memory utilizat...



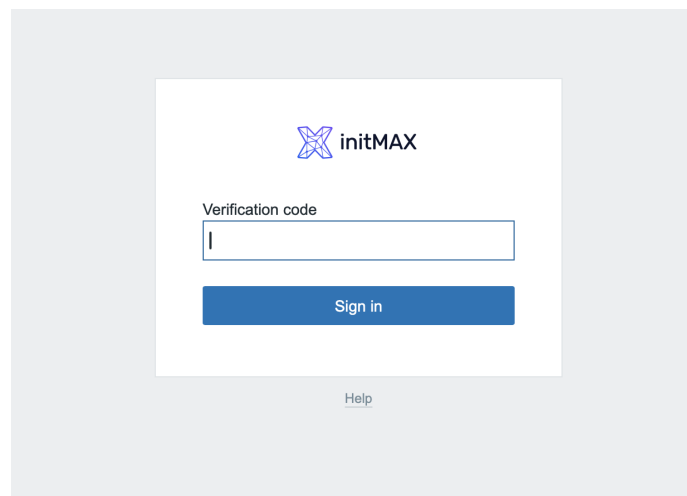
11

Multi-factor authentication (2FA)



# Multi-factor authentication

- ▶ Out-of-the-box support of multi-factor authentication (MFA):
  - ▶ Time-Based One-Time Password (TOTP) authentication
  - ▶ Duo Universal Prompt authentication



- ▶ TIP: <https://www.initmax.com/wiki/two-factor-authentication-2fa-in-zabbix-7-0/> EN
- ▶ TIP: <https://www.initmax.cz/wiki/dvoufaktorova-autentifikace-2fa-v-zabbixu-7-0/> CZ

# 12

Other features and improvements



# Other improvements





















- ▶ The Zabbix licensing model has been updated to GNU Affero General Public License version 3 (AGPLv3)
- ▶ An optional Zabbix server and frontend update check has been introduced via the System information section/widget
- ▶ New net.dns.perf and net.dns.get items
- ▶ User macro support in item prototype and item names
- ▶ Ability to customize media for JIT provisioned users (our WIKI)
- ▶ Major performance improvements for frontend permission checks
- ▶ HTTP connector for native Kafka topics
- ▶ Improved behavior when the same host group is discovered by multiple LLDs

# Other improvements

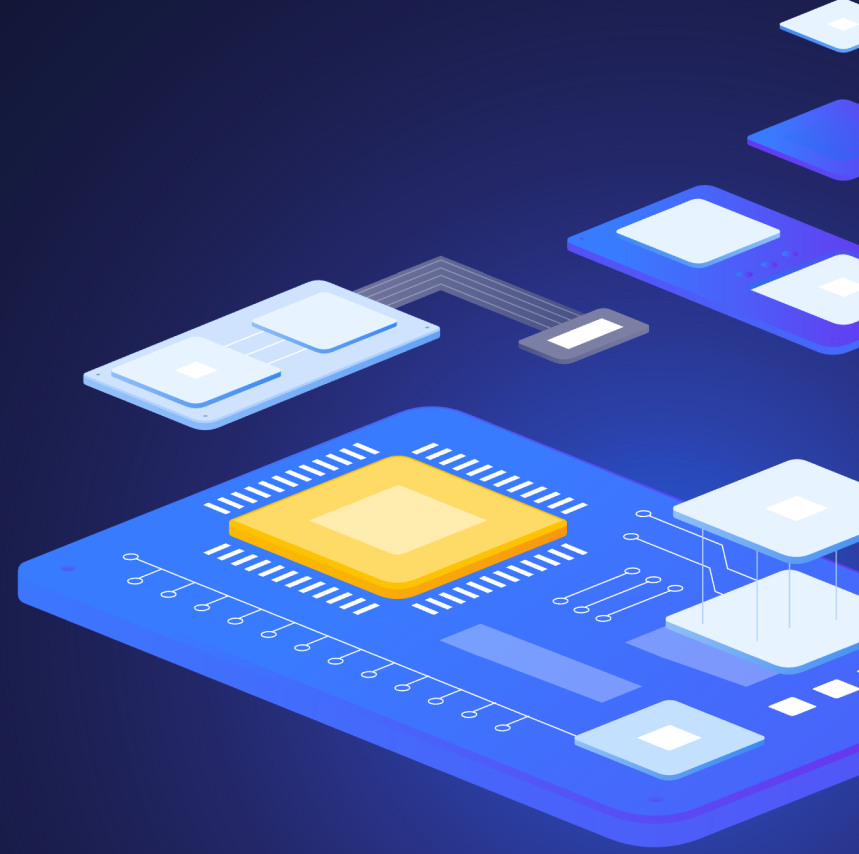
- Remote command execution via active checks
- Improved not supported item handling in aggregation calculations
- Expanded aggregation calculation value matching and other improvements
- Ability to assign tags during host autoregistration
- Support of multi-page PDF report generation (our WIKI)
- Enhanced handling of item error messages via validation preprocessing
- Command-line testing/validation of configuration files
- New jsonpath and xpath trigger functions
- Ability to turn off LLD/autoregistration/discovery logging
- Faster recalculation of host maintenance status

...And more!

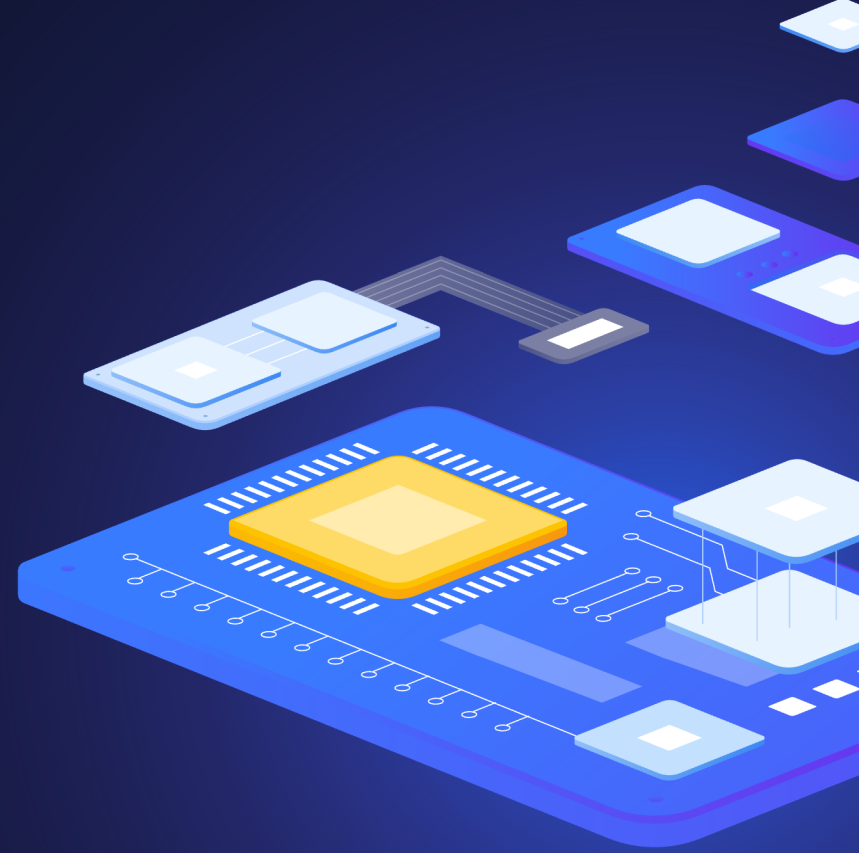
# New templates and integrations

 Google Cloud Platform	 Microsoft Azure Cost Management	 Microsoft Azure Cosmos DB for MongoDB	 Amazon Elastic Container Service	 AWS ELB Application Load Balancer
 Oracle Cloud Infrastructure	 Microsoft SQL by Zabbix agent 2	 Microsoft SQL by ODBC template improvements	 CheckPoint Quantum Security Gateway	 Nextcloud
 Fortinet FortiGate	 HPE iLO	 Cisco SD-WAN	 HashiCorp Nomad	 PostgreSQL by ODBC
 OpenStack Nova	 Acronis Cyber Protect Cloud	 YugabyteDB	 Event-Driven Ansible Webhook	 Mantis Bug Tracker

# Demo



Questions?





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