



Webinar

What's new in Zabbix 6.0 LTS

all our microphones are muted

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

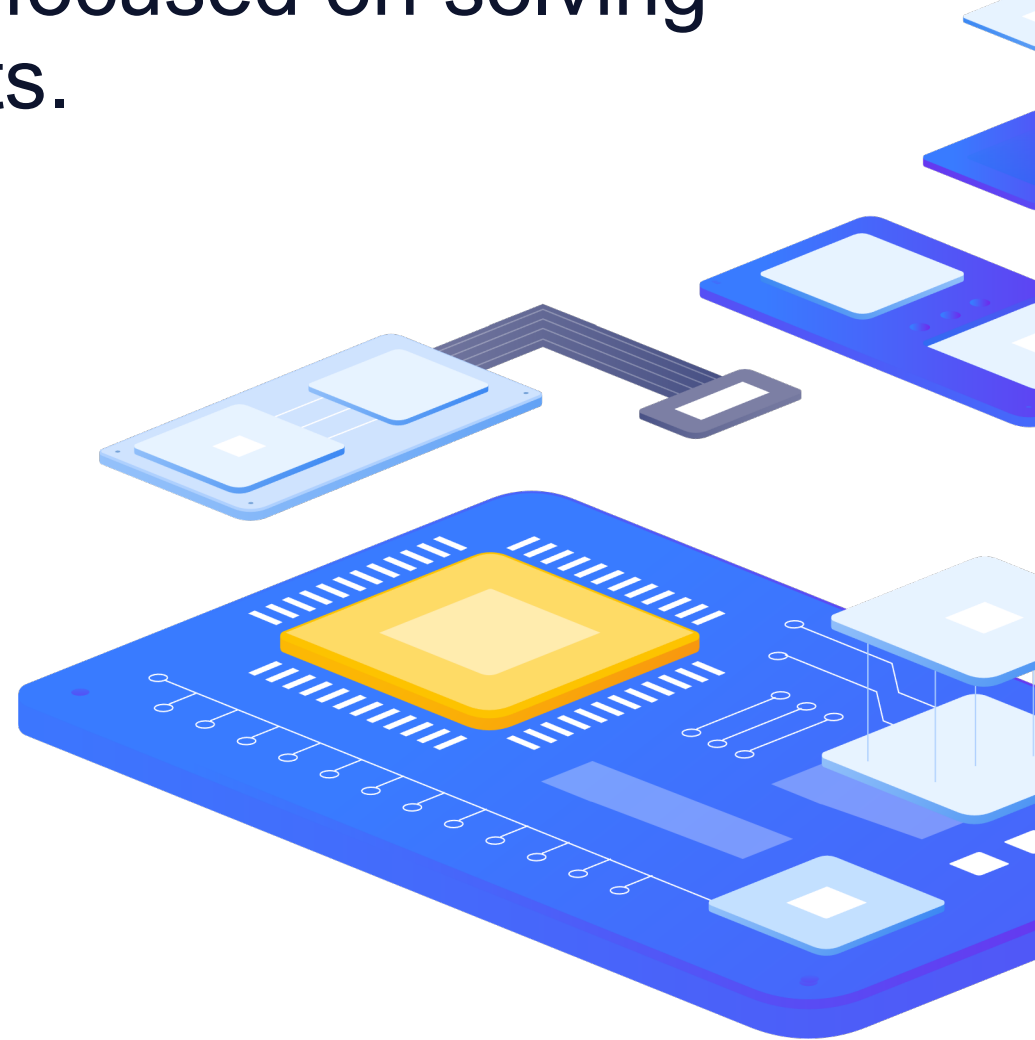
use Chat for discussion, networking or applause

Zabbix 6.0 LTS

Many of Zabbix 6.0 LTS features are focused on solving complex enterprise-level requirements.

Zabbix 6.0 focuses on:

- › Solving enterprise level security and redundancy requirements
- › Improving performance for large Zabbix instances
- › Providing additional value to different types of Zabbix users – DevOps and ITOps teams, Business process owner, Managers
- › Further extending Zabbix monitoring and data collection capabilities
- › Continued delivery of official integrations with 3rd party systems





Zabbix server High availability Cluster

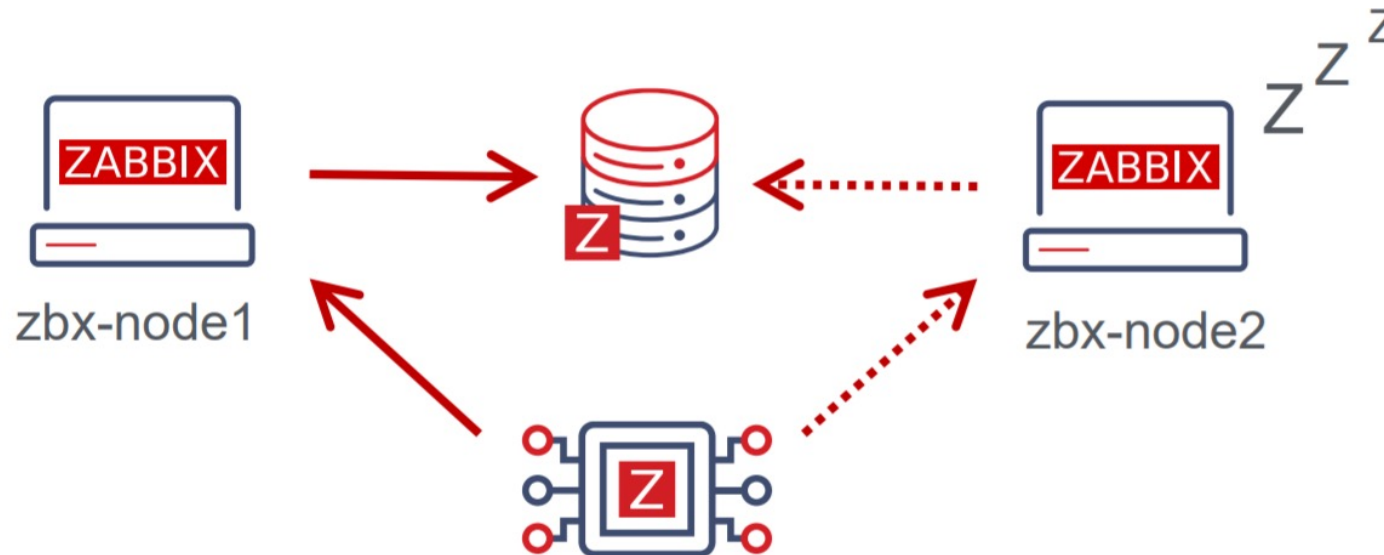


Zabbix 6.0 LTS

Zabbix Server high availability cluster

Zabbix administrators now have the ability to define Zabbix server HA clusters:

- › Define one or multiple redundant nodes
- › All nodes use the same database
- › Ability to define the failover delay period
- › The Zabbix server nodes send their heartbeat to the Zabbix database every 5 seconds



Zabbix 6.0 LTS

Zabbix Server high availability cluster

New parameter in Zabbix Server configuration file – HANodeName:

- › Empty by default
- › This parameter should contain an arbitrary name of the HA node
- › The parameter is mandatory for the node to start in the HA mode

```
## Option: HANodeName
#       The high availability cluster node name.
#       When empty server is working in standalone mode.
HANodeName=zbx-node1
```

Zabbix 6.0 LTS

Zabbix Server high availability cluster

New parameter in Zabbix Server configuration file – NodeAddress:

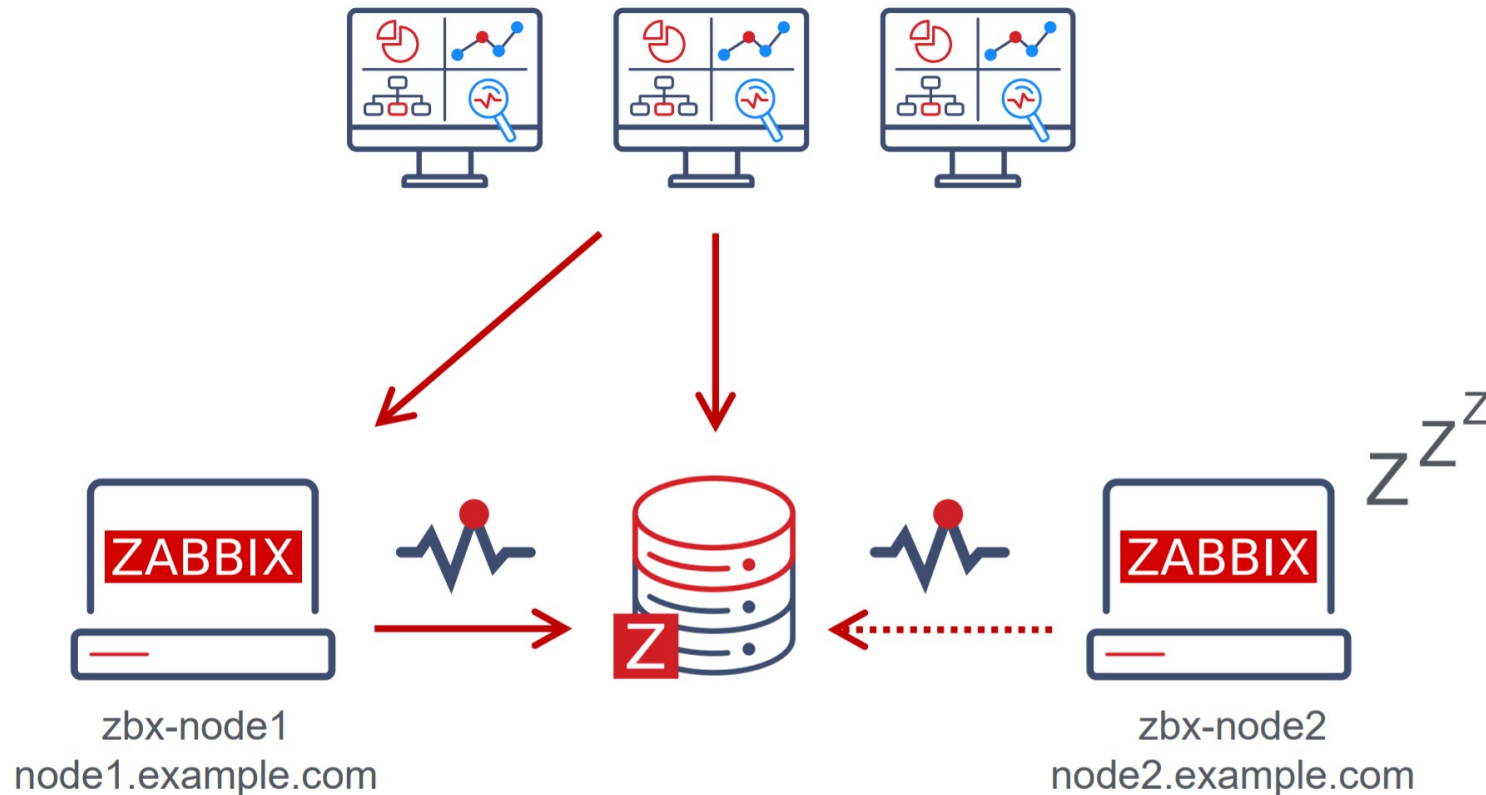
- › Empty by default
- › This parameter should contain the address of the HA node
- › Let's the Zabbix frontend know the address of the currently active node

```
## Option: NodeAddress
#      IP or hostname to define hoe frontend should connect to the server.
#      Format: <address>[:port]
NodeAddress=node1.example.com
```

Zabbix 6.0 LTS

Zabbix Server high availability cluster

- Each frontend node will connect to the Zabbix database, obtain the active node address and start communicating with it.



Zabbix Server high availability cluster

- › Zabbix Server HA cluster status can be observed in System information section or in the System information dashboard widget

System information

Parameter	Value	Details
Zabbix server is running	Yes	192.168.1.91:10051
Number of hosts (enabled/disabled)	34	34 / 0
Number of templates	232	
Number of items (enabled/disabled/not supported)	1488	1412 / 1 / 75
Number of triggers (enabled/disabled [problem/ok])	624	619 / 5 [52 / 567]
Number of users (online)	5	1
Required server performance, new values per second	135.29	
High availability cluster	Enabled	Fail-over delay: 1 minute

Name	Address	Last access	Status
zbx-node1	192.168.1.91:10051	1s	Active
zbx-node3	192.168.1.19:10051	13d 3h 23m	Unavailable
zbx-node4	192.168.1.19:10051	13d 3h 22m	Stopped
zbx-node2	192.168.1.92:10051	2s	Standby

Zabbix 6.0 LTS

Zabbix Server high availability cluster

Many other new HA features:

- › Ability to set a custom failover delay
- › Ability to manually remove a node from the cluster

```
#zabbix_server -R ha_remove_node=ckyjydgop0001c1pvhaoz4o4e  
Removed node "zbx-node4" with ID "ckyjydgop0001c1pvhaoz4o4e"
```

- › Both active and passive agents can now communicate with HA nodes
- › Both active and passive proxies can now communicate with HA nodes
- › Cluster node LLD rule added to the Zabbix server health template



Business service monitoring



Zabbix 6.0 LTS

Business service monitoring

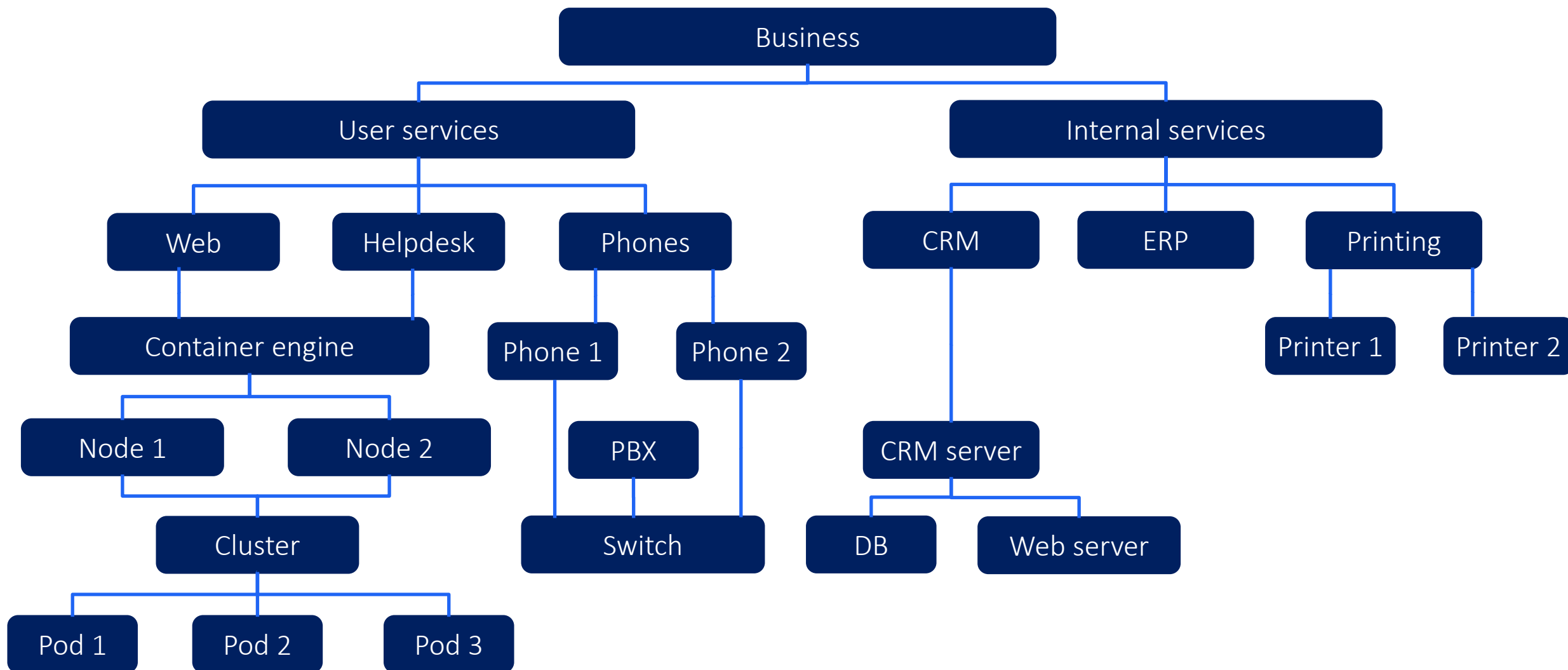
Business Service monitoring (BSM) enables Zabbix administrators to define services of varying complexity and monitor their status

Most common use cases:

- › Server clusters
- › Services that utilize load balancing
- › Services which consist of a complex IT stack
- › Systems with redundant components in place

Business service monitoring is extremely scalable with support for over 100k services.

Business service example



Calculating service status

There are multiple approaches to calculating service status

In case of a problem, the service state can be changed to:

- › The most critical problem severity based on the child service problem severities
- › The most critical problem severity based on the child service problem severities, only if all child services are in a problem state
- › The service is set to constantly be in an OK state

Most critical if all children have problems	▼
Most critical of child services	
Most critical if all children have problems	
Set status to OK	

Calculating service status – additional rules

New additional rule

Set status to

High

Condition

If at least **N** child services have **Status** status or above

N

2

Status

High

If at least **N** child services have **Status** status or above

If at least **N** child services have **Status** status or above

If at least **N%** of child services have **Status** status or above

If less than **N** child services have **Status** status or below

If less than **N%** of child services have **Status** status or below

If weight of child services with **Status** status or above is at least **W**

If weight of child services with **Status** status or above is at least **N%**

If weight of child services with **Status** status or below is less than **W**

If weight of child services with **Status** status or below is less than **N%**

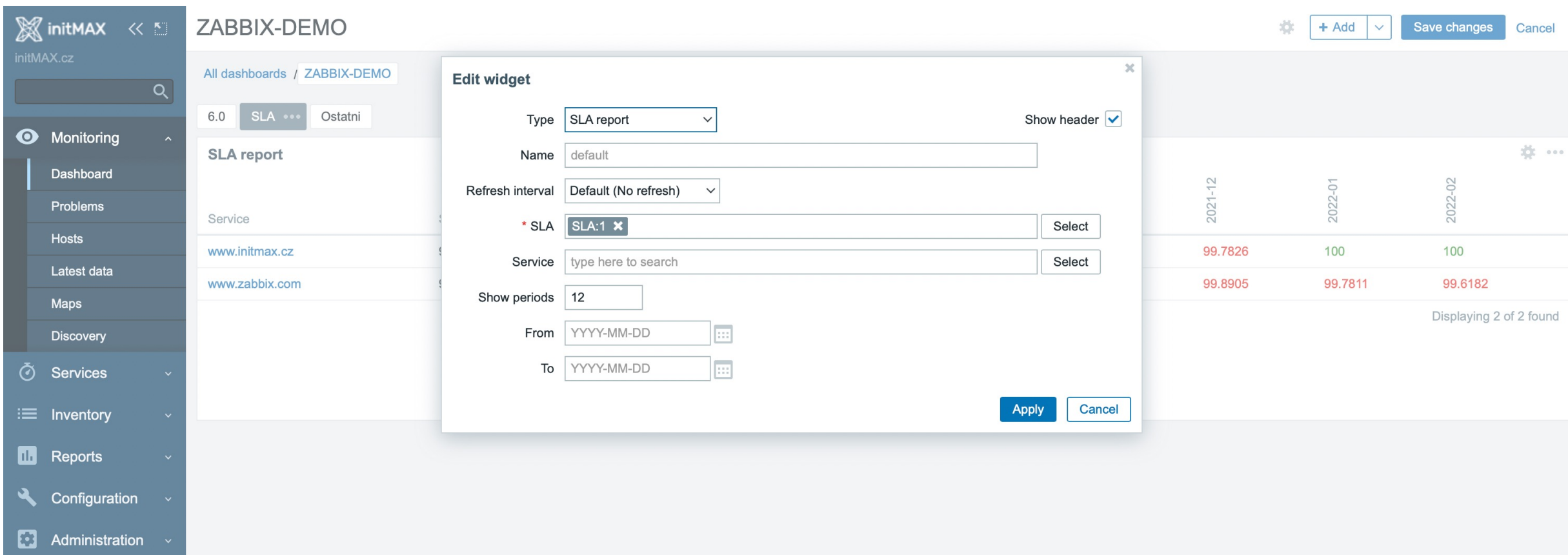
Zabbix 6.0 LTS

Business service monitoring - notes

Many other additional features and improvements:

- › Ability to define permissions on specific services
- › Business Service root cause analysis
- › SLA monitoring
- › Receive alerts and react on Business Service status change
- › Provide a list of root cause problems in service-based notifications and commands with **{SERVICE.ROOTCAUSE}**

Business service monitoring - SLA



The screenshot displays the Zabbix 6.0 LTS interface. On the left is a sidebar with navigation links: Monitoring, Dashboard, Problems, Hosts, Latest data, Maps, Discovery, Services, Inventory, Reports, Configuration, and Administration. The main content area is titled "ZABBIX-DEMO" and shows a list of dashboards with "6.0", "SLA", and "Ostatni". The "SLA" dashboard is selected, displaying an "SLA report" widget. An "Edit widget" dialog is open, showing the configuration for the "SLA report" widget. The configuration includes: Type: SLA report, Name: default, Refresh interval: Default (No refresh), Show header: checked, * SLA: SLA:1, Service: type here to search, Show periods: 12, From: YYYY-MM-DD, and To: YYYY-MM-DD. The dialog has "Apply" and "Cancel" buttons. In the background, a table displays the SLA report data for two services: www.initmax.cz and www.zabbix.com. The table has columns for the period (2021-12, 2022-01, 2022-02) and the SLA value. The values for www.initmax.cz are 99.7826, 100, and 100. The values for www.zabbix.com are 99.8905, 99.7811, and 99.6182. The table is displaying 2 of 2 found results.

Edit widget

Type: SLA report Show header: ☒

Name: default

Refresh interval: Default (No refresh)

* SLA: SLA:1 Select

Service: type here to search Select

Show periods: 12

From: YYYY-MM-DD

To: YYYY-MM-DD

Apply Cancel

	2021-12	2022-01	2022-02
www.initmax.cz	99.7826	100	100
www.zabbix.com	99.8905	99.7811	99.6182

Displaying 2 of 2 found

Business service monitoring - notes

Many other additional features and improvements:

- › Define Business Service permissions for multi-tenant environments

Access to services

Read-write access to services

Agreements

type here to search

Select

Read-write access to services with tag

Read-only access to services



New audit log schema




New Audit log schema – technical details

Many new changes had to be made under the hood when designing the new audit log

- › Zabbix 6.0 LTS introduces a new database structure for the Audit log
- › Collision resistant IDs (CUID) will be used for ID generation to prevent audit log row locks
- › Audit log records will be added in bulk SQL requests
- › Introducing Recordset ID column. This will help users recognize which changes have been made in a particular operation

New Audit log schema – Example

 initMAX
initMAX.cz

Monitoring

Services

Inventory

Reports

System information

Scheduled reports

Availability report

Triggers top 100

Audit

Action log

Notifications

Configuration

Administration

Audit log

From

To

Apply

Last 2 days

Last 7 days

Last 30 days

Last 3 months

Last 6 months

Last 1 year

Last 2 years

Yesterday

Day before yesterday

This day last week

Previous week

Previous month

Previous year

Today

Today so far

This week

This week so far

This month

This month so far

This year

This year so far

Last 5 minutes

Last 15 minutes

Last 30 minutes

Last 1 hour

Last 3 hours

Last 6 hours

Last 12 hours

Last 1 day

Filter

Time	User	IP	Resource	ID	Action	Recordset ID	Details
2022-02-15 23:58:42	tomas.hermanek@initmax.cz	89.176.10.7	Dashboard	56	Update	ckzoq8l960000jxzmsf27xk1t	Description: ZABBIX-DEMO dashboard.pages[68]: Added dashboard.pages[68].dashboard_pageid: 68
2022-02-15 15:20:58	tomas.hermanek@initmax.cz	89.176.10.7	Dashboard	56	Update	ckzo7qs5z0000zyzmqhlev5pj	Description: ZABBIX-DEMOv2 dashboard.name: ZABBIX-DEMOv2 => ZABBIX-DEMO
2022-02-15 15:20:46	tomas.hermanek@initmax.cz	89.176.10.7	Dashboard	55	Delete	ckzo7qik40000zyzmfqhhrbla	Description: ZABBIX-DEMO
2022-02-15 15:18:07	tomas.hermanek@initmax.cz	89.176.10.7	Dashboard	55	Update	ckzo7n3sa0000hczmhfqzd5b7	Description: ZABBIX-DEMO dashboard.pages[63].widgets[318]: Updated dashboard.pages[63].widgets[318].height: 7 => 5

New Audit log schema

The goal of the Zabbix 6.0 LTS audit log rework is to make a reliable and detailed audit log which would provide logging for both Frontend and Zabbix server

- › Detailed logging of both Zabbix frontend and Zabbix server records
- › Designed with minimal performance impact in mind
- › Accessible via Zabbix API
- › Implementing the new audit log schema is an ongoing effort – further improvements will be done throughout Zabbix update life-cycle



Machine learning



Machine learning trend functions

The new baseline monitoring and anomaly detection trend functions allow you to avoid static threshold creation and detect problems in a dynamic manner:

- ▶ New trend functions – **baselinewma** and **baselinedev** allow you to calculate baselines of your metrics as well as detect deviations from it

Condition



* Item	Apache Web Server: Apache: Requests per second	Select
Function	baselinedev() - Returns the number of deviations between data periods in seasons and the last data period	
* Period (T)	1d	Time
* Period shift	now/d	Period
* Season	Month	▼
* Number of seasons	6	
* Result	> ▼	3

Insert

Cancel

Machine learning trend functions

The new baseline monitoring and anomaly detection trend functions allow you to avoid static threshold creation and detect problems in a dynamic manner:

- › New trend function - **trendstl**, allows you to detect anomalous metric behavior
- › Ability to specify anomaly detection deviation algorithm and seasonality

Condition

✕

* Item	Apache Web Server: Apache: Requests per second	Select
Function	trendstl() - Anomaly detection for period T	
* Evaluation period (T)	100h	Time
* Period shift	now/h-10h	Period
* Detection period	100h	
* Season	1h	
Deviations	3	
Algorithm	mad	
Season deviation window		
* Result	>	0.1

Insert

Cancel



Kubernetes monitoring



Zabbix 6.0 LTS


Kubernetes Monitoring

New templates for discovering and monitoring Kubernetes nodes and pods:

- › Automatic discovery of Kubernetes nodes and pods
- › Discover and monitor node capacity, information, request and other metrics
- › Discover and monitor pod condition metrics, status and uptime

Metrics are collected agentlessl by communicating with the Kubernetes API

Kubernetes Monitoring

 initMAX

initMAX.cz

Monitoring

Services

Inventory

Reports

Configuration

Host groups

Templates

Hosts

Maintenance

Actions

Event correlation

Discovery

Administration

Discovery rules

Create discovery rule

All templates / Kubernetes API server by HTTP Items 24 Triggers 4 Graphs 1 Dashboards Discovery rules 10 Web scenarios

Filter

Host groupsSelect

TemplatesSelect

Name

Key

Type

StatusEnabledDisabled

Update interval

Keep lost resources period

ApplyReset

<input type="checkbox"/>	Template	Name ▲	Items	Triggers	Graphs	Hosts	Key	Interval	Type	Status
<input type="checkbox"/>	Kubernetes API server by HTTP	Kubernetes API: Get API instance metrics: Authentication attempts discovery	Item prototypes 1	Trigger prototypes	Graph prototypes	Host prototypes	kubernetes.api.authentication_attempts.discovery		Dependent item	Enabled
<input type="checkbox"/>	Kubernetes API server by HTTP	Kubernetes API: Get API instance metrics: Authentication requests discovery	Item prototypes 1	Trigger prototypes	Graph prototypes	Host prototypes	kubernetes.api.authenticated_user_requests.discovery		Dependent item	Enabled
<input type="checkbox"/>	Kubernetes API server by HTTP	Kubernetes API: Get API instance metrics: Client certificate expiration histogram	Item prototypes 1	Trigger prototypes	Graph prototypes	Host prototypes	kubernetes.api.certificate_expiration.discovery		Dependent item	Enabled
<input type="checkbox"/>	Kubernetes API server by HTTP	Kubernetes API: Get API instance metrics: Etcd objects metrics discovery	Item prototypes 1	Trigger prototypes	Graph prototypes	Host prototypes	kubernetes.api.etcd_object_counts.discovery		Dependent item	Enabled
<input type="checkbox"/>	Kubernetes API server by HTTP	Kubernetes API: Get API instance metrics: gRPC completed requests discovery	Item prototypes 1	Trigger prototypes	Graph prototypes	Host prototypes	kubernetes.api.grpc_client_handled.discovery		Dependent item	Enabled

Zabbix 6.0 LTS


Kubernetes Monitoring

New templates for discovering and monitoring Kubernetes components such as:

- › API servers
- › Kubelet
- › Controller manager
- › Replicasets
- › Scheduler
- › And more

Metrics are collected agentlessl by communicating with the Kubernetes API

Kubernetes Monitoring

initMAX

initMAX.cz

Monitoring

Services

Inventory

Reports

Configuration

Host groups

Templates

Hosts

Maintenance

Actions

Event correlation

Discovery

Administration

Templates

Create templateImport

Filter

Host groupstype here to searchSelect

Linked templatestype here to searchSelect

NameKubernetes

Tags

And/OrOr

tagContainsvalueRemove

Add

ApplyReset

<input type="checkbox"/>	Name ▲	Hosts	Items	Triggers	Graphs	Dashboards	Discovery	Web	Linked templates	Linked to templates	Tags
<input type="checkbox"/>	Kubernetes API server by HTTP	Hosts	Items 24	Triggers 4	Graphs 1	Dashboards	Discovery 10	Web			class: software target: kubernetes api ...
<input type="checkbox"/>	Kubernetes cluster state by HTTP	Hosts	Items 11	Triggers	Graphs	Dashboards	Discovery 15	Web			class: software target: kubernetes state
<input type="checkbox"/>	Kubernetes Controller manager by HTTP	Hosts	Items 13	Triggers 1	Graphs 2	Dashboards	Discovery 1	Web			class: software target: kubernetes con...
<input type="checkbox"/>	Kubernetes kubelet by HTTP	Hosts	Items 12	Triggers	Graphs	Dashboards	Discovery 4	Web			class: software target: kubernetes kub...
<input type="checkbox"/>	Kubernetes nodes by HTTP	Hosts	Items 3	Triggers 1	Graphs	Dashboards	Discovery 3	Web			class: software target: kubernetes nodes
<input type="checkbox"/>	Kubernetes Scheduler by HTTP	Hosts	Items 23	Triggers 3	Graphs 5	Dashboards	Discovery 3	Web			class: software target: kubernetes sch...

0 selectedExportMass updateDeleteDelete and clear

Displaying 6 of 6 found



New ways to visualize your data



Zabbix 6.0 LTS

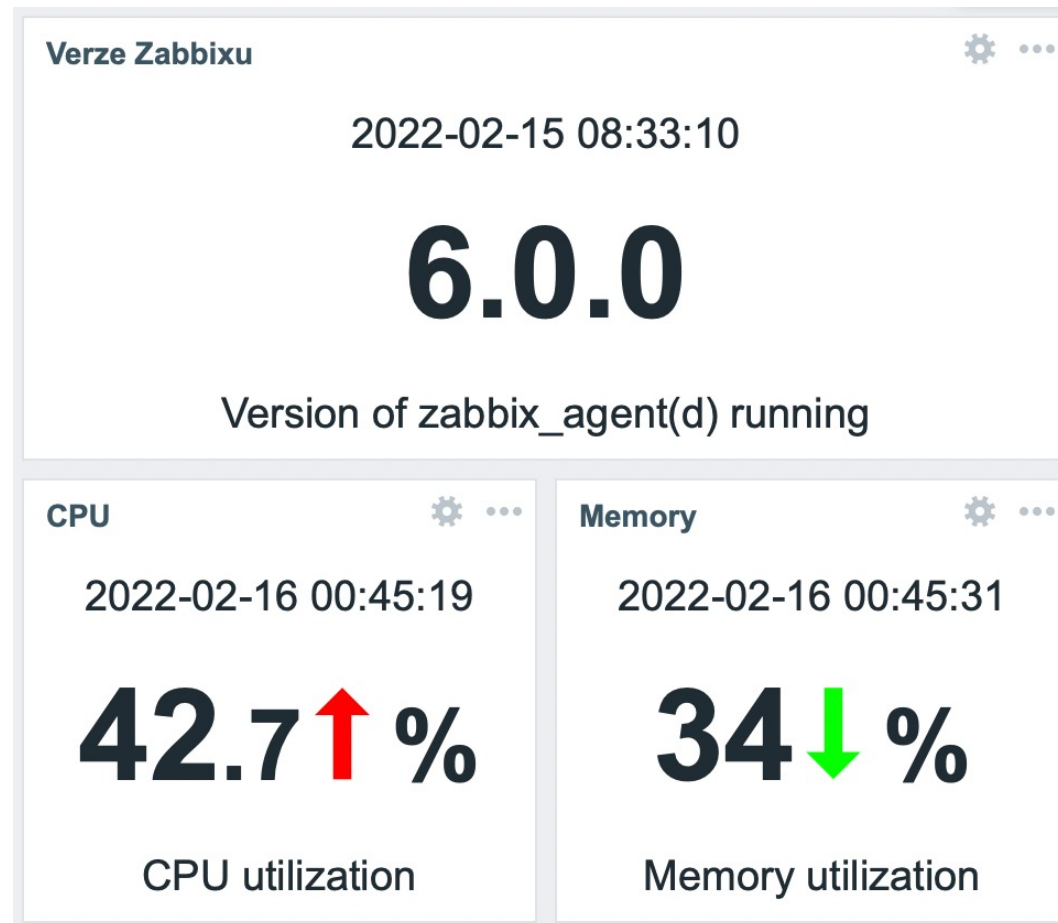
New Dashboard widgets

The new widgets introduced in Zabbix 6.0 grant you many new ways to display information about your environment:

- › New widgets such as Top hosts, Single item, Geomaps
- › The SLA report widget displays the current SLA for services filtered by service tags
- › All new widgets are highly customizable































New Dashboard widgets

- ▶ The single item widget allows you to display values for a single metric



New Dashboard widgets

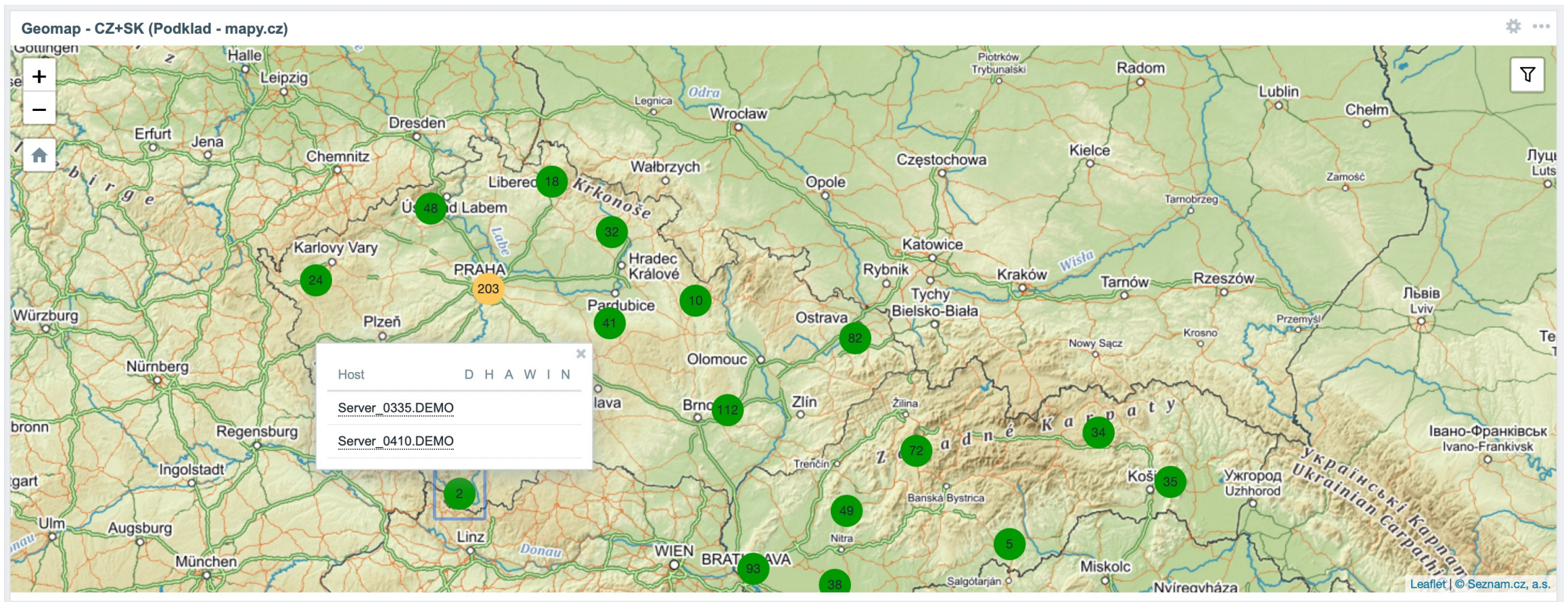
- ▶ The Top hosts widget can be used to display a list of Top N or Bottom N hosts sorted by an item value

Top Hosts ⚙️ ⋮								
Host	CPU	CPU BAR		MEM		Disk /		Zabbix Agent
<u>DEMO-SERVER</u>	42.6845 %		42.6845 %		33.7656 %		24.8984 %	Up (1)
<u>Server_0003.DEMO</u>	42.6639 %		42.6639 %		33.7896 %		24.8984 %	Up (1)
<u>Server_0001.DEMO</u>	42.6185 %		42.6185 %		33.784 %		24.8984 %	Up (1)
<u>Server_0006.DEMO</u>	42.2567 %		42.2567 %		33.8099 %		24.8984 %	Up (1)
<u>Server_0008.DEMO</u>	41.3816 %		41.3816 %		33.8315 %		24.8984 %	Up (1)
<u>Server_0010.DEMO</u>	40.5235 %		40.5235 %		33.8091 %		24.8984 %	Up (1)
<u>Server_0009.DEMO</u>	38.2109 %		38.2109 %		33.7908 %		24.8984 %	Up (1)
<u>Server_0007.DEMO</u>	36.8553 %		36.8553 %		33.7917 %		24.8984 %	Up (1)
<u>Server_0004.DEMO</u>	35.1001 %		35.1001 %		33.8048 %		24.8984 %	Up (1)
<u>Server_0002.DEMO</u>	33.5342 %		33.5342 %		33.8456 %		24.8984 %	Up (1)

Zabbix 6.0 LTS

New Dashboard widgets

Now Zabbix users have the ability to see their host location on a geographical map in their dashboard:



New Dashboard widgets

Now Zabbix users have the ability to see their host location on a geographical map in their dashboard:

- › The host coordinates are provided in the host inventory fields
- › Filter by host groups and tags

Edit widget ✕

Type

Geomap ▼

Show header ☒

Name

Geomap - CZ+SK (Podklad - mapy.cz)

Refresh interval

No refresh ▼

Host groups

DEMO/hosts ✕

type here to search

Select

Hosts

type here to search

Select

Tags

And/Or

Or

tag

Contains ▼

value

Remove

Add

Initial view ?

49.2020489,16.5079212

Apply

Cancel



Zabbix agent – improvements and new items



Zabbix 6.0 LTS

New Zabbix agent items

Multiple new items have been added for both Zabbix Agent And Zabbix Agent2. These items give you the ability to:

- › Obtain additional file information such as file owner and file permissions
- › Collect agent host metadata as a metric
- › Collect Zabbix agent variant (agent or agent2) as a metric
- › New **system.hostname** parameter for returning the short hostname
- › Count matching TCP/UDP sockets
- › You can now natively monitor your SSL/TLS certificates with a new Zabbix Agent2 item. The item can be used to validate a TLS/SSL certificate and provide you additional certificate details.

Zabbix 6.0 LTS

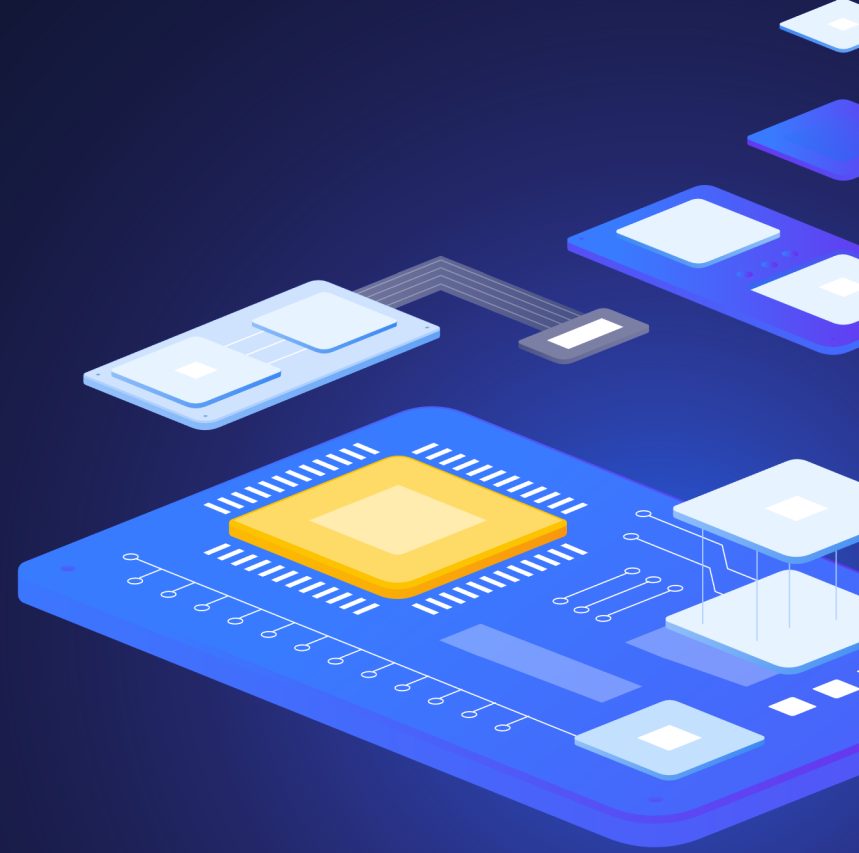
Zabbix agent improvements

Zabbix agent and Zabbix agent2 have received significant improvements:

- › Zabbix agent2 now supports loading stand-alone plugins without having to recompile Zabbix agent2.
- › It is now possible to reload user parameters without restarting the Zabbix agent
- › Support of persistent log monitoring state file to prevent log file re-reads under specific scenarios
- › The new optional parameter `persistent_dir` specifies a directory for storing this state of `log[]`, `log.count[]`, `logrt[]` or `logrt.count[]` item in a file.
- › Each Zabbix agent 2 plugin now has a separate configuration file



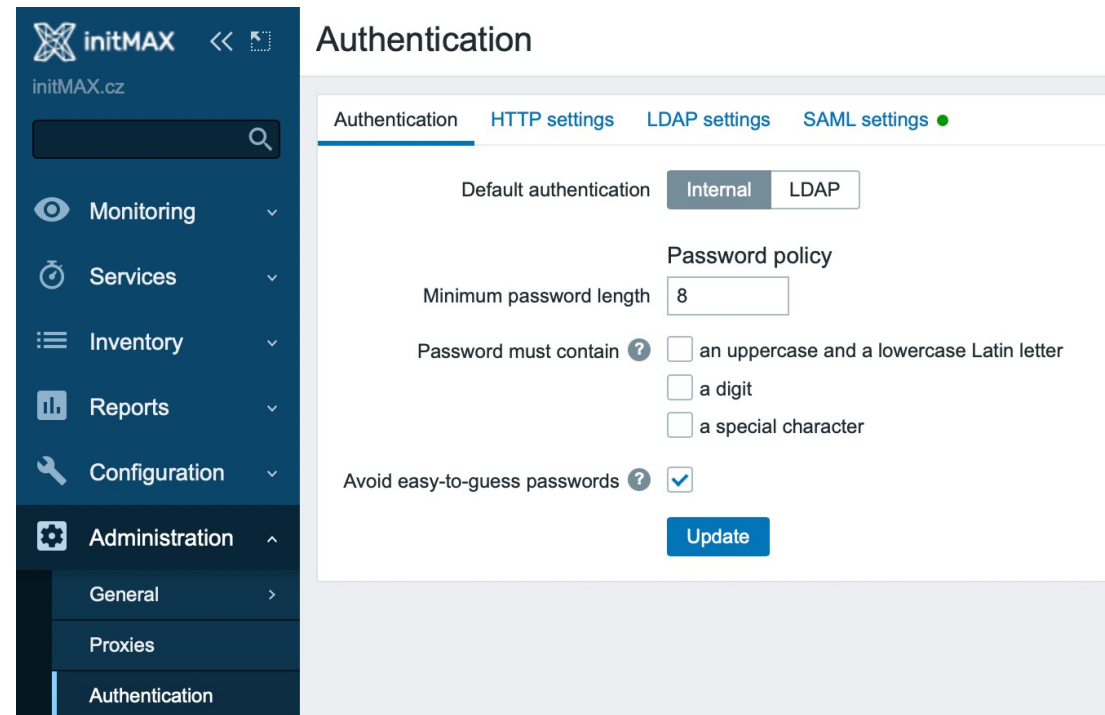
Custom zabbix password complexity requirements



zabbix password complexity requirements

Zabbix Super admins now have the ability to define the password complexity requirements. Now you can:

- › Set the minimum password length
- › Define password character requirements
- › Mitigate the risk of a dictionary attack by prohibiting the usage of the most common password strings.



The screenshot shows the Zabbix Administration interface. On the left is a dark blue sidebar with the 'initMAX' logo and a search bar. Below the search bar are menu items: Monitoring, Services, Inventory, Reports, Configuration, and Administration. The 'Administration' menu is expanded, showing sub-items: General, Proxies, and Authentication. The 'Authentication' sub-item is selected. The main content area is titled 'Authentication' and has tabs for 'Authentication', 'HTTP settings', 'LDAP settings', and 'SAML settings'. The 'Authentication' tab is active. It contains a 'Default authentication' section with 'Internal' and 'LDAP' buttons. Below this is the 'Password policy' section, which includes a 'Minimum password length' input field set to '8'. There are three checkboxes for password requirements: 'an uppercase and a lowercase Latin letter', 'a digit', and 'a special character', all of which are currently unchecked. At the bottom of the password policy section is a checkbox for 'Avoid easy-to-guess passwords', which is checked. An 'Update' button is located at the bottom right of the form.



UI/UX improvements

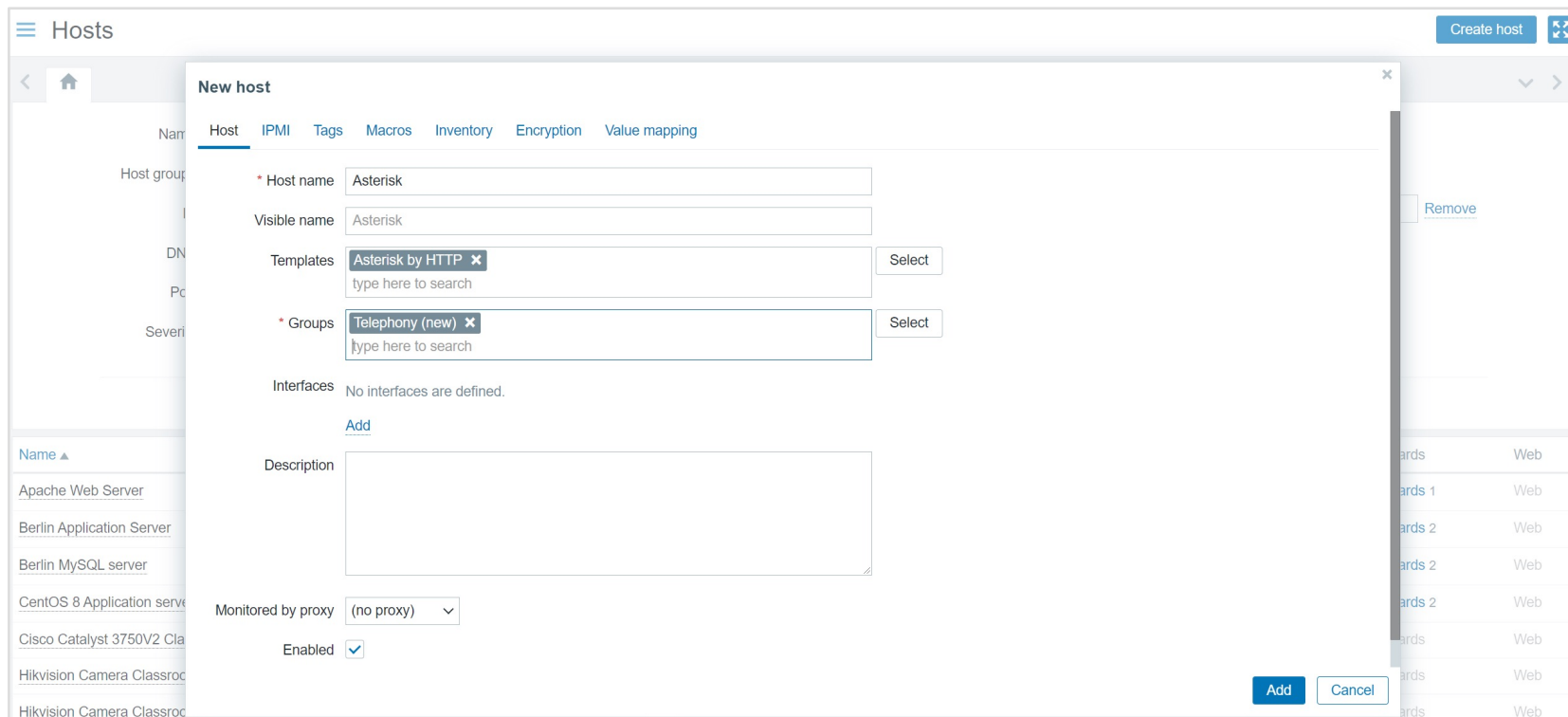


Zabbix 6.0 LTS

UI/UX Improvements

Multiple UI/UX improvements have been added, based on the community feedback:

- › Create hosts directly from 'Monitoring' - 'Hosts'
- › Templates can now be assigned in the main Host creation tab



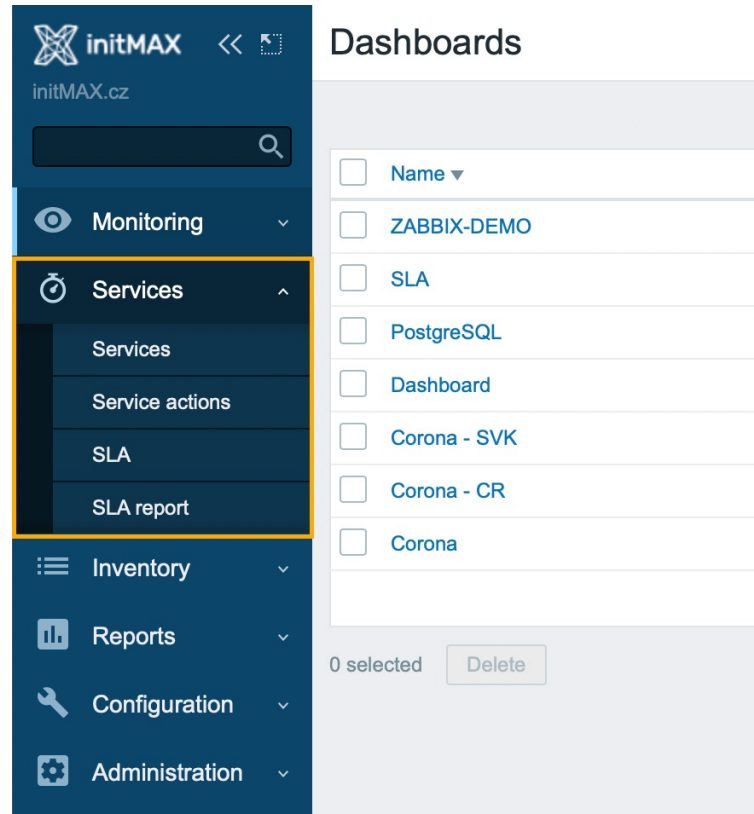
The screenshot shows the 'New host' form in the Zabbix 6.0 LTS interface. The form is titled 'New host' and has tabs for 'Host', 'IPMI', 'Tags', 'Macros', 'Inventory', 'Encryption', and 'Value mapping'. The 'Host' tab is active. The form contains the following fields and controls:

- Host name:** Asterisk
- Visible name:** Asterisk
- Templates:** Asterisk by HTTP (with a 'Select' button and a search input 'type here to search')
- Groups:** Telephony (new) (with a 'Select' button and a search input 'type here to search')
- Interfaces:** No interfaces are defined. (with an 'Add' button)
- Description:** (empty text area)
- Monitored by proxy:** (no proxy) (dropdown menu)
- Enabled:** ☒

Buttons at the bottom right include 'Add' and 'Cancel'. A 'Create host' button is located in the top right corner of the main window.

UI/UX Improvements – Services section

- › New Services sections for business service, SLA, SLA report and service action configuration
- › The default type of information for items will now be selected automatically



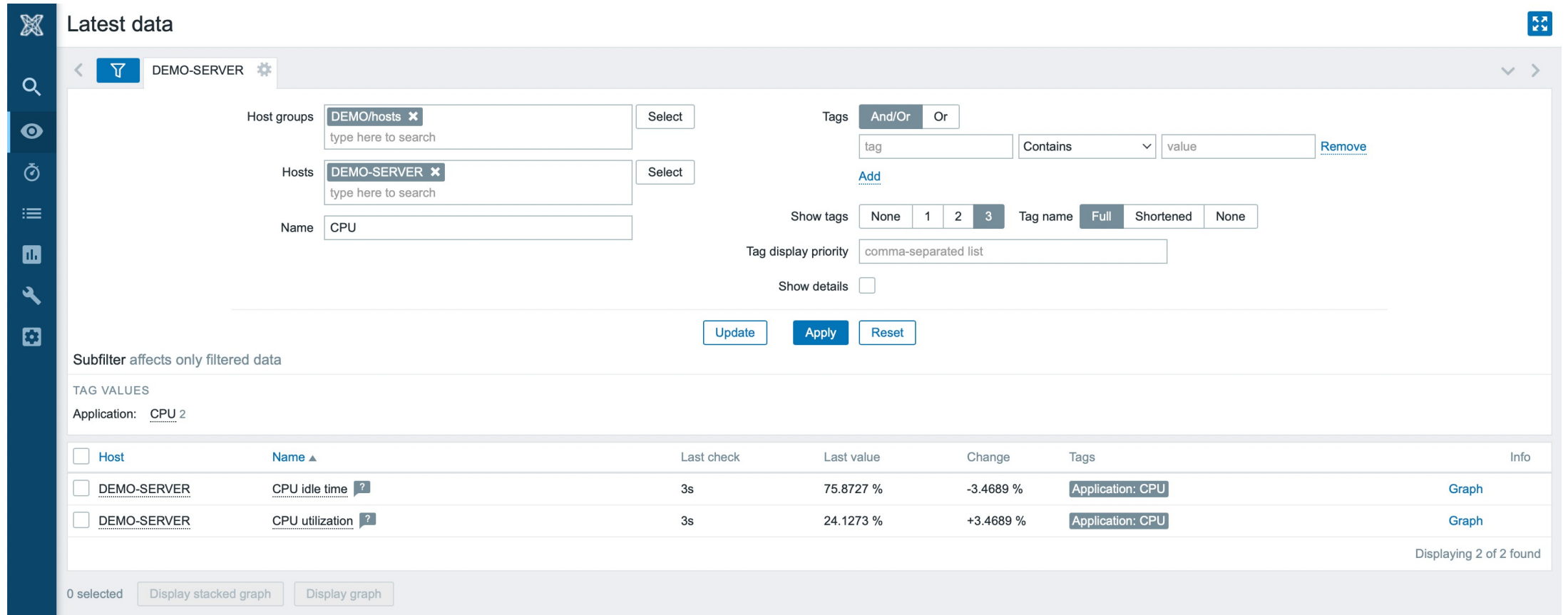
UI/UX Improvements - Graphs

- Monitoring – Hosts – Graphs section has been redesigned for better UX and performance



UI/UX Improvements – Latest data

- › Added the ability to save named filters and use subfilters in Latest data



The screenshot displays the 'Latest data' interface in Zabbix 6.0 LTS. The interface includes a sidebar with navigation icons and a main content area. The main content area has a header 'Latest data' and a subheader 'DEMO-SERVER'. Below the header, there are filter options for 'Host groups', 'Hosts', and 'Name'. The 'Host groups' filter is set to 'DEMO/hosts', 'Hosts' is set to 'DEMO-SERVER', and 'Name' is set to 'CPU'. There are also 'Tags' and 'Show tags' options. The 'Tags' section includes a dropdown for 'tag' and a 'Contains' dropdown. The 'Show tags' section includes a dropdown for 'Tag name' and a 'Tag display priority' dropdown. The 'Show details' checkbox is unchecked. Below the filter options, there are 'Update', 'Apply', and 'Reset' buttons. A note states 'Subfilter affects only filtered data'. Below this, there is a section for 'TAG VALUES' with the text 'Application: CPU 2'. The main data table has columns for 'Host', 'Name', 'Last check', 'Last value', 'Change', 'Tags', and 'Info'. The table contains two rows of data for 'DEMO-SERVER' with 'CPU idle time' and 'CPU utilization' metrics. The 'Tags' column for both rows shows 'Application: CPU'. The 'Info' column for both rows has a 'Graph' link. At the bottom of the table, it says 'Displaying 2 of 2 found'. Below the table, there are buttons for '0 selected', 'Display stacked graph', and 'Display graph'.

Latest data

DEMO-SERVER

Host groups: DEMO/hosts (type here to search) Select

Hosts: DEMO-SERVER (type here to search) Select

Name: CPU

Tags: And/Or Or

tag Contains value Remove

Add

Show tags: None 1 2 3 Tag name: Full Shortened None

Tag display priority: comma-separated list

Show details: ☐

Update Apply Reset

Subfilter affects only filtered data

TAG VALUES

Application: CPU 2

<input type="checkbox"/> Host	Name ▲	Last check	Last value	Change	Tags	Info
<input type="checkbox"/> DEMO-SERVER	CPU idle time ?	3s	75.8727 %	-3.4689 %	Application: CPU	Graph
<input type="checkbox"/> DEMO-SERVER	CPU utilization ?	3s	24.1273 %	+3.4689 %	Application: CPU	Graph

Displaying 2 of 2 found

0 selected Display stacked graph Display graph



New templates and integrations



Zabbix 6.0 LTS

New Templates and integrations

Zabbix 6.0 comes pre-packaged with many new templates for the most popular vendors:

- › f5 BIG-IP
- › Cisco ASA
- › HPE ProLiant servers
- › Cloudflare
- › InfluxDB
- › Travis CI
- › Dell PowerEdge
- › pfSense
- › Kubernetes
- › Mikrotik
- › Nginx Plus
- › VMware SD-WAN VeloCloud
- › GridGain
- › systemd

Zabbix 6.0 also brings a new GitHub webhook integration which allows you to generate GitHub issues based on Zabbix events!

New Templates and integrations

Zabbix 6.0 also brings improvements to the existing set of templates and integrations:

- › All of the official Zabbix templates are now stand-alone and do not require importing additional template dependencies
- › HA node discovery and monitoring for Zabbix server health/Remote Zabbix server health
- › Updated Zabbix proxy templates according to the latest guidelines
- › Added CPU usage metrics to Docker template
- › Added new tags to all official templates
- › Fixed item value maps for VMware templates



Other changes and improvements



Vmware monitoring improvements

Multiple improvements have been made to existing VMware items. Support for new items has also been added:

- › Improved data collection for VMware performance counters that return percentage values
- › Collect VMware hypervisor HW vendor state sensors with **vmware.hv.sensors.get**
- › Collect VMware hypervisor maintenance status with **vmware.hv.maintenance**
- › Improved the behavior of the skip parameter for the **vmware.eventlog** key

Zabbix 6.0 LTS

New History functions

Multiple new history functions have been added:

- › Detect continuous increase or decrease of values with new monotonic history functions – **monodec()**, **monoinc()**
- › Count the number of changes in adjacent values with **changecount()**

New Aggregate functions

Multiple new general use aggregate functions have been added:

- › Return the total number of values in an array returned by a foreach function with **count()**
- › Return the total number of currently enabled items (as an integer) that match filter criteria with **item_count**
- › Return the total number of currently enabled items (as an array) that match filter criteria with **exists_foreach**

New prometheus functions

Multiple new aggregate and history functions have been added for Prometheus monitoring:

History functions:

- › Calculate rates for Prometheus monotonic counters with `rate()`

Aggregate functions:

- › Calculate percentile values from the buckets of Prometheus histograms with `bucket_percentile()`
- › Calculate quantile from values from buckets of Prometheus histograms with `histogram_quantile()`
- › Return pairs of bucket upper bound and rate value for use in `histogram_quantile()` with `bucket_rate_foreach()`

New Macros

New macros are now supported for trigger expression and internal action debugging:

- › **{TRIGGER.EXPRESSION.EXPLAIN}**, **{TRIGGER.EXPRESSION.RECOVERY.EXPLAIN}** - resolve to a partially evaluated trigger or recovery expression, where only item-based functions are applied
- › **{FUNCTION.VALUE<1-9>}**, **{FUNCTION.RECOVERY.VALUE<1-9>}** - resolve to the results of the Nth item-based function at the time of the event
- › Display a reason why an item became unsupported with **{ITEM.STATE.ERROR}**
- › Display a reason why an LLD rule became unsupported with **{LLDRULE.STATE.ERROR}**
- › Display a reason why a trigger became unknown with **{TRIGGER.STATE.ERROR}**

CLI tool and runtime command changes

New features have been added to the existing command line tools:

- › Added support for Timeout settings for Zabbix command-line tools
- › Zabbix server and proxy runtime commands are now sent via socket instead of Unix signals
- › Results of the command execution are now printed to the console
- › Runtime control options are now supported on BSD-based systems

Performance improvements

New features and improvements related to Zabbix performance:

- › A new configuration parameter **StartODBCPollers** has been added to Zabbix server and proxy configuration files
- › Processing ODBC checks has been moved from regular poller processes to separate server/proxy processes **ODBC pollers**
- › Improved performance of template linking on Zabbix Server
- › Improved performance for Prometheus pattern preprocessing

Performance improvements

New features and improvements related to Zabbix performance:

- › Improved protocol to support Zabbix proxy configuration cache of size up to 16 GB
- › Improved Zabbix proxy performance and memory usage by freeing uncompressed data as fast as possible and compressing before connection
- › Improved Zabbix agent2 performance by using functions introduced in Go 1.16
- › Added primary key support for History tables – improved performance and reduced DB size.

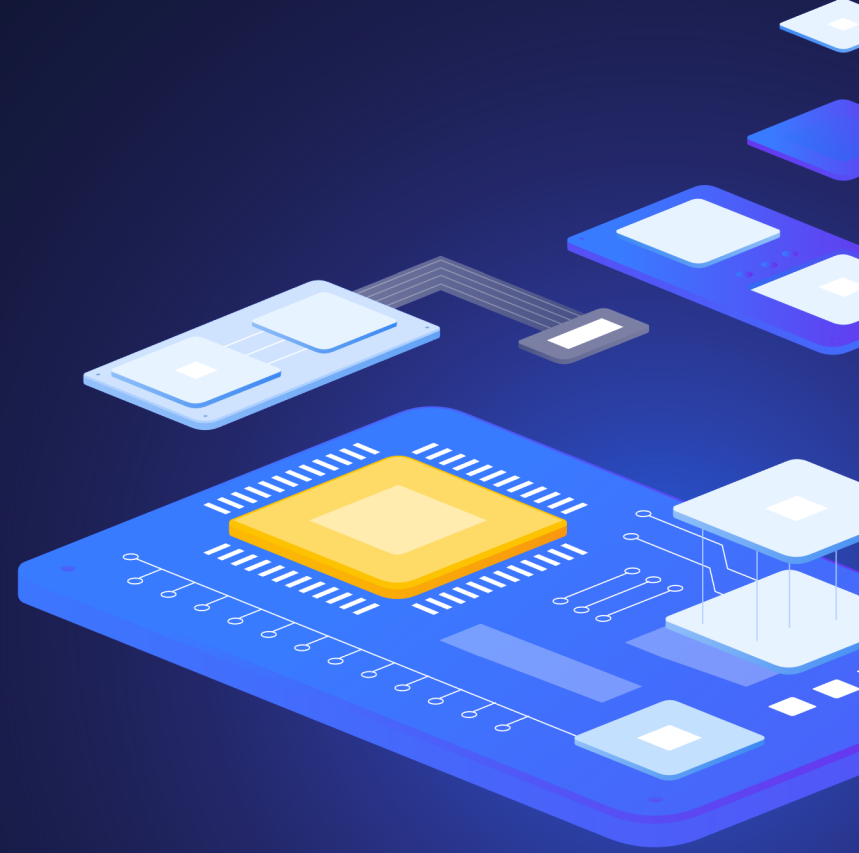
Other Changes and improvements

Many other improvements have been added in Zabbix 6.0 LTS:

- › Added utf8mb4 as a supported MySQL character set and collation
- › Added the support of additional HTTP methods for webhook
- › Support for two new Prometheus preprocessing label matching operators != and !~
- › Calculated items now support not only numeric, but also text, log, and character types of information.
- › New API method – **history.clear** can be used to clear history for items and web scenarios
- › Added option to opt-out of Escalation cancelled messages



Questions?



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