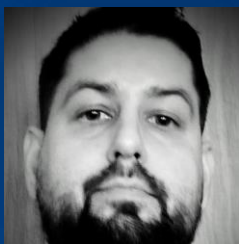


Zabbix a Prometheus

19.2.2025

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Axians Slovakia

Premium and Training partner

Jediná spoločnosť na Slovensku!



Webinára 2025

- **18.2.2025** Zabbix a Prometheus
- **11.3.2025** Spracovanie SNMP trapov v Zabbixe
- **15.4.2025** Vysoká dostupnosť v Zabbix architektúre
- **06.5.2025** JMX monitoring
- **03.6.2025** Vzdialená správa konfigurácie Zabbix

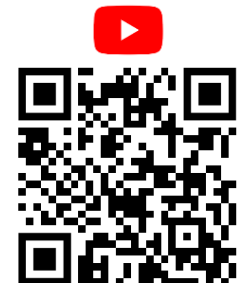




Jeseň a zima 2024

- **18.9.2024** PostgreSQL databázový klaster inak
- **9.10.2024** Odporúčané postupy konfigurácie Zabbixu
- **23.10.2024** Budovanie bezpečného monitoringu v Zabbixe
- **20.11.2024** Monitoring cloudovej infraštruktúry
- **11.12.2024** Nasadenie Zabbixu v prostredí Kubernetes
- **17.12.2024** Čo nové prináša Zabbix 7.2

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Webináre 2023/2024

- **08.11.2023** Zabbix 7.0 - 1.časť - Nové widgety Pie chart, Gauge...
- **15.11.2023** Zabbix 7.0 - 2.časť - GUI, komunikačný framework pre widgety
- **21.11.2023** Zabbix 7.0 - 3.časť - Akcie, LLD, triggery
- **06.12.2023** Zabbix 7.0 - 4.časť - Network discovery, zber údajov
- **24.01.2024** Zabbix 7.0 - 5.časť - Honeycomb widget, API history.push
- **07.02.2024** Zabbix 7.0 - 6.časť - Global scripts, timeouts, preprocessing
- **21.02.2024** Zabbix 7.0 - 7.časť - Plánované reporty
- **06.03.2024** Zabbix 7.0 - 8.časť - Maintenance, Host availability widget...
- **24.04.2024** Zabbix 7.0 - 9.časť - MF authentication, LLD...
- **22.05.2024** Zabbix 7.0 - 10.časť - Zabbix proxy load balancing, nové widgety

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Agenda

1. Úvod / Prečo ?
2. Zdroje
3. Možnosti
4. Na čo si dať pozor
5. Demo



Úvod / Prečo ?

- Ste zvedavý
- Chcete sa naučiť niečo nové
- Podpora out of the box (HTTP agent a prometheus preprocessing)



Úvod / Prečo ?

2 hlavné dôvody

- Neexistuje natívne riešenie v Zabbixe (napr. SAP)
- Monitoring in-house aplikácií (developeri majú radi Prometheus "knižnice")

Záver

- Zabbix môže fungovať ako "**umbrella monitoring**"
- Nie je nutné prevádzkovať rôzne monitorovacie nástroje (..up to a point...)



Zdroje

Zabbix

- <https://www.zabbix.com/documentation/current/en/manual/config/items/itemtypes/prometheus>
- <https://www.zabbix.com/documentation/current/en/manual/config/items/itemtypes/http>

Prometheus

- https://prometheus.io/docs/concepts/data_model/
- https://github.com/prometheus/node_exporter



Možnosti

Endpoint, metrika, label, ...

- `curl IP:PORT/metrics`
- `<metric name>{<label name>=<label value>, ...}`
- `api_http_requests_total{method="POST", handler="/messages"}`



Možnosti

```
gofree@zajka:~$ curl localhost:9100/metrics
# HELP apt_autoremove_pending Apt packages pending autoremoval.
# TYPE apt_autoremove_pending gauge
apt_autoremove_pending 0
# HELP apt_package_cache_timestamp_seconds Apt update last run time.
# TYPE apt_package_cache_timestamp_seconds gauge
apt_package_cache_timestamp_seconds 1.739778768473338e+09
# HELP go_gc_duration_seconds A summary of the pause duration of garbage collection cycles.
# TYPE go_gc_duration_seconds summary
go_gc_duration_seconds{quantile="0"} 0.000122295
go_gc_duration_seconds{quantile="0.25"} 0.000131907
go_gc_duration_seconds{quantile="0.5"} 0.00013937
go_gc_duration_seconds{quantile="0.75"} 0.000160814
go_gc_duration_seconds{quantile="1"} 0.000259257
go_gc_duration_seconds_sum 0.000813643
go_gc_duration_seconds_count 5
# HELP go_goroutines Number of goroutines that currently exist.
# TYPE go_goroutines gauge
go_goroutines 7
# HELP go_info Information about the Go environment.
# TYPE go_info gauge
go_info{version="go1.22.2"} 1
# HELP go_memstats_alloc_bytes Number of bytes allocated and still in use.
# TYPE go_memstats_alloc_bytes gauge
go_memstats_alloc_bytes 2.626656e+06
# HELP go_memstats_alloc_bytes_total Total number of bytes allocated, even if freed.
# TYPE go_memstats_alloc_bytes_total counter
go_memstats_alloc_bytes_total 1.2644688e+07
# HELP go_memstats_buck_hash_sys_bytes Number of bytes used by the profiling bucket hash table.
# TYPE go_memstats_buck_hash_sys_bytes gauge
go_memstats_buck_hash_sys_bytes 1.453581e+06
# HELP go_memstats_frees_total Total number of frees.
# TYPE go_memstats_frees_total counter
go_memstats_frees_total 258927
# HELP go_memstats_gc_sys_bytes Number of bytes used for garbage collection system metadata.
# TYPE go_memstats_gc_sys_bytes gauge
go_memstats_gc_sys_bytes 3.056672e+06
```



Možnosti

- Zabbix preprocessing "Prometheus pattern"

```
# HELP node_load1 1m load average.  
# TYPE node_load1 gauge  
node_load1 2.38  
# HELP node_load15 15m load average.  
# TYPE node_load15 gauge  
node_load15 2.09  
# HELP node_load5 5m load average.  
# TYPE node_load5 gauge  
node_load5 2.24
```



Možnosti

- Zabbix preprocessing "Prometheus to JSON" > **LLD**

```
node_filesystem_avail_bytes{device="/dev/sda2",fstype="ext4",mountpoint="/"} 1.82487957504e+11
node_filesystem_free_bytes{device="/dev/sda1",fstype="vfat",mountpoint="/boot/firmware"} 3.39298816e+08
node_filesystem_free_bytes{device="/dev/sda2",fstype="ext4",mountpoint="/"} 1.92113307648e+11
node_filesystem_size_bytes{device="/dev/sda1",fstype="vfat",mountpoint="/boot/firmware"} 5.28592896e+08
node_filesystem_size_bytes{device="/dev/sda2",fstype="ext4",mountpoint="/"} 2.35766267904e+11
```



Možnosti

| Parameter | Description |
|--------------------------|--|
| <i>Pattern</i> | <p>To define the required data pattern you may use a query language that is similar to Prometheus query language (see comparison table), e.g.:</p> <pre><metric name> - select by metric name {__name__="<metric name>"} - select by metric name {__name__=~"<regex>"} - select by metric name matching a regular expression {<label name>="<label value>"} - select by label name {<label name>=~"<regex>"} - select by label name matching a regular expression {__name__=~" *"}==<value> - select by metric value</pre> <p>Or a combination of the above:</p> <pre><metric name>{<label1 name>="<label1 value>",<label2 name>=~"<regex>"}==<value></pre> <p>Label value can be any sequence of UTF-8 characters, but the backslash, double-quote and line feed characters have to be escaped as <code>\\</code>, <code>\"</code> and <code>\n</code> respectively; other characters shall not be escaped.</p> |
| <i>Result processing</i> | <p>Specify whether to return the value, the label or apply the appropriate function (if the pattern matches several lines and the result needs to be aggregated):</p> <ul style="list-style-type: none"> value - return metric value (error if multiple lines matched) label - return value of the label specified in the <i>Label</i> field (error if multiple metrics are matched) sum - return the sum of values min - return the minimum value max - return the maximum value avg - return the average value count - return the count of values <p>This field is only available for the <i>Prometheus pattern</i> option.</p> |
| <i>Output</i> | <p>Define label name (optional). In this case the value corresponding to the label name is returned.</p> <p>This field is only available for the <i>Prometheus pattern</i> option, if 'Label' is selected in the <i>Result processing</i> field.</p> |



Na čo si dať pozor

- Bezpečnosť (PSK vs. Plain HTTP)
- Push vs. Pull
- Selfmonitoring
- Rozdiely medzi PromQL a Zabbix Prometheus preprocessingom



Na čo si dať pozor

- Rozdiely medzi PromQL a Zabbix Prometheus preprocessingom

| PromQL instant vector selector | Zabbix Prometheus preprocessing | |
|---|---|--|
| Differences | | |
| Query target | Prometheus server | Plain text in Prometheus exposition format |
| Returns | Instant vector | Metric or label value (Prometheus pattern) Array of metrics for single value in JSON (Prometheus to JSON) |
| Label matching operators | =, !=, =~, !=~ | =, !=, =~, !=~ |
| Regular expression used in label or metric name matching | RE2 | PCRE |
| Comparison operators | See list | Only == (equal) is supported for value filtering |
| Similarities | | |
| Selecting by metric name that equals string | <metric name> or {__name__="<metric name>"} | <metric name> or {__name__="<metric name>"} |
| Selecting by metric name that matches regular expression | {__name__=~"<regex>"} | {__name__=~"<regex>"} |
| Selecting by <label name> value that equals string | {<label name>="<label value>"...} | {<label name>="<label value>"...} |
| Selecting by <label name> value that matches regular expression | {<label name>=~"<regex>"...} | {<label name>=~"<regex>"...} |
| Selecting by value that equals string | {__name__=~".*" } == <value> | {__name__=~".*" } == <value> |



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Školenia, recertifikácie,
upgrade



Axians - Zabbix Training Center

Zabbix 7.0 – kompletne portfólio školení a certifikací
Otvorené termíny na Q1/Q2 2025



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Nové školenia – príchod novej verzie

Pre certifikovaných špecialistov (ZCS) alebo profesionálov (ZCP) na verziu 6.0 ponuka Upgrade školení na verziu 7.0

ZCS Upgrade

ZCP Upgrade



Ste majiteľmi certifikátov na verziu 5.0? Kontaktujte nás.



Garantované termíny

Zabbix Certified Specialist Upgrade (ZCSU) - 25.3.2025

Zabbix Certified Professional (ZCP) – 18.6.2025-20.6.2025



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Pripravujete sa na upgrade?

Zabbix konzultácia zdarma

Kontaktujte nás, sme pripravení vám kedykoľvek pomôcť. Navyše, prvú konzultáciu poskytujeme zdarma. Cez platformu MS Teams nám môžete predstaviť váš problém a spoločne sa pokúsime nájsť riešenie. Vyplňte formulár a my vás budeme kontaktovať, aby sme si dohodli termín vašej konzultácie zdarma.

* Polia označené hviezdičkou sú povinné.

OSLOVENIE 

MENO





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Demo



Demo prostredie

- Zabbix 7.2
- Node exporter
- https://github.com/prometheus/node_exporter



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Ďakujem,
otázky ???