ZABBIX SUMMIT

OCTOBER 8 · 10, 2025
RIGA · LATVIA

What are Zabbix tags ?

Artjoms Rimdjonoks, Software Developer, Team Lead, Zabbix

Tags are a fundamental component of the Zabbix system.

Tags

Name	Value	
class	os	Remove
target	linux	Remove

Add

Analogy

Jira labels:

Social network hashtags: #ZabbixSummit2025

Metadata

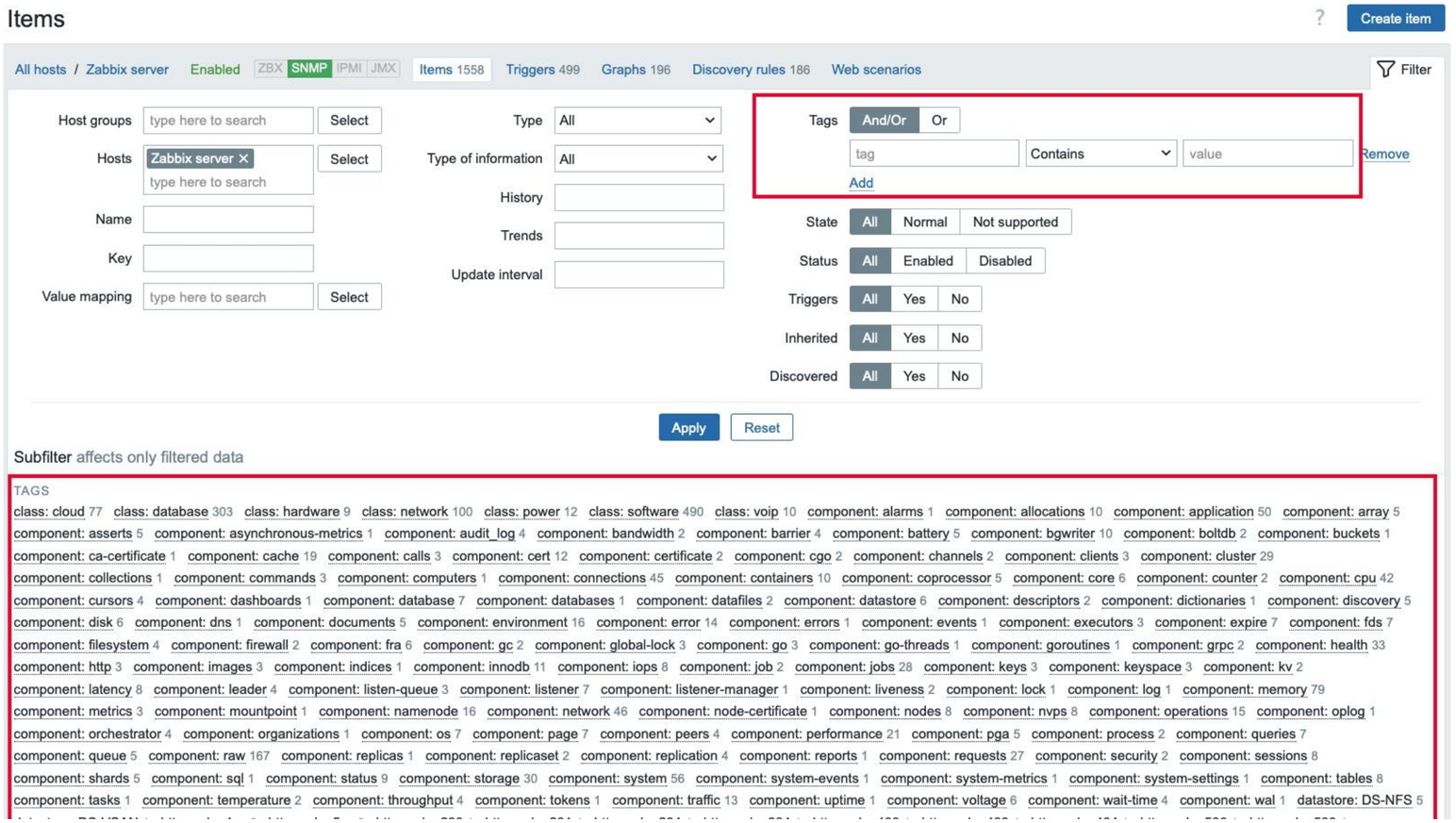
Logical Grouping

- Hosts/templates
- Items/triggers
- Prototypes (host, item and trigger)
- Web scenarios
- Services (SLA)

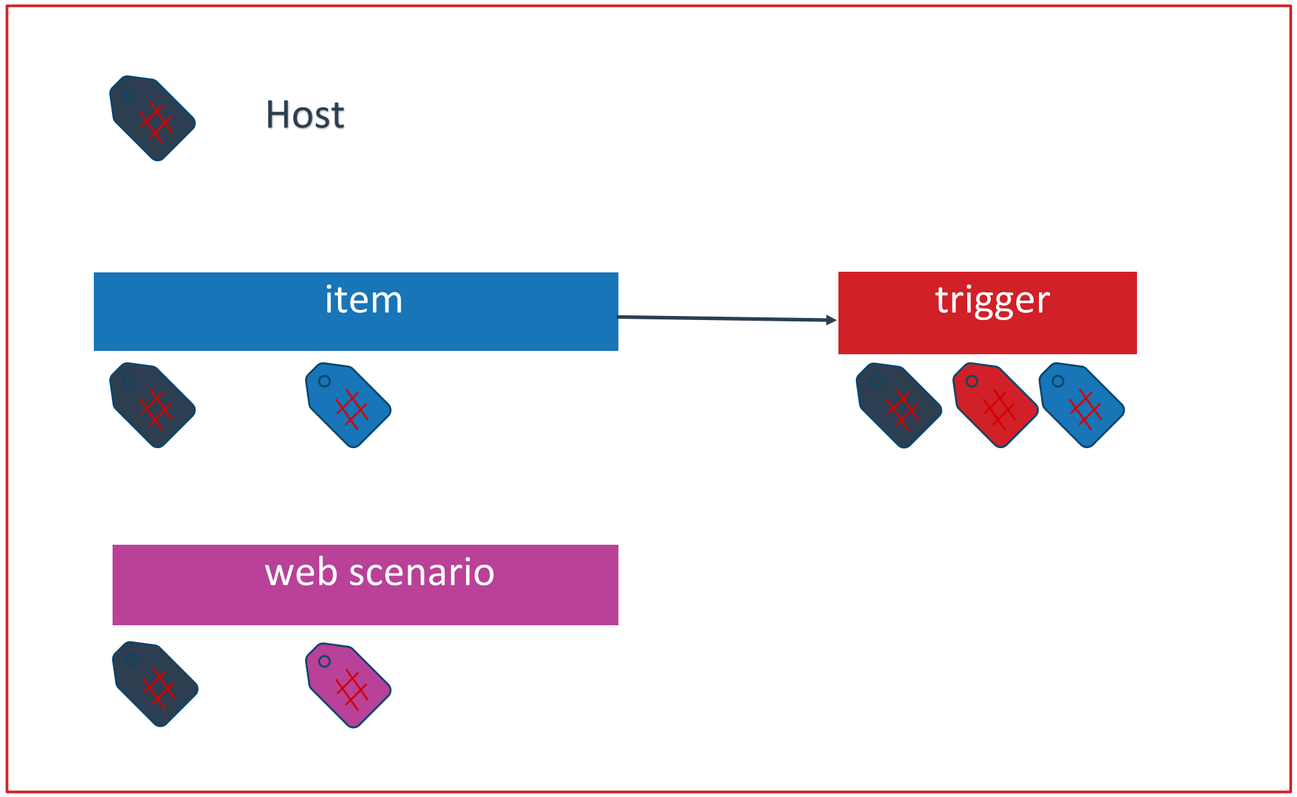
For control of data flow:

- **Visualization/searching**
  (configuration, metric data, problems)
- **Event generation control**
  (actions, event correlation, SLA)
- **Access control** (user groups - host groups)
- **Administration** (maintenance)

Items configuration



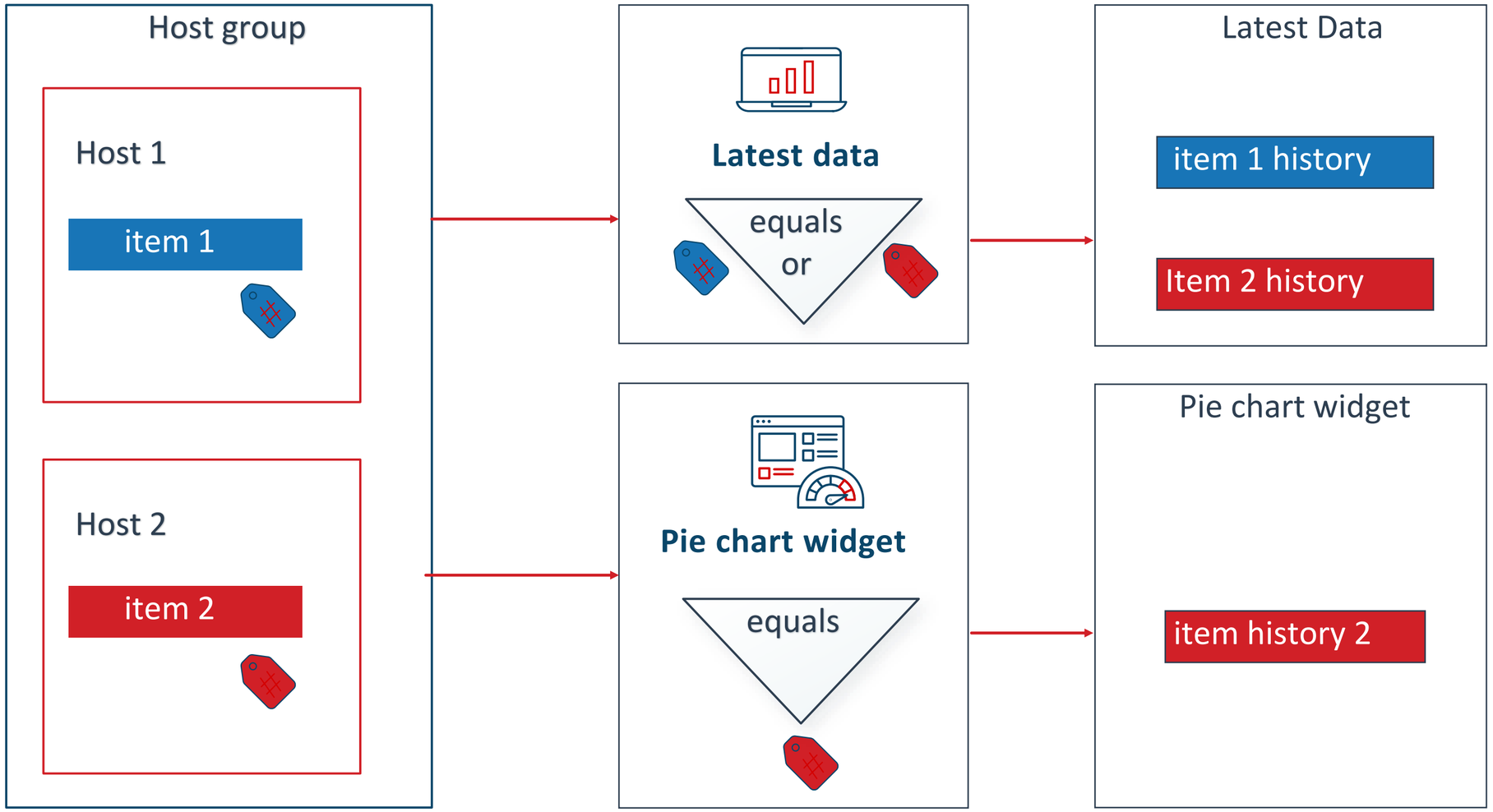
Adding tags



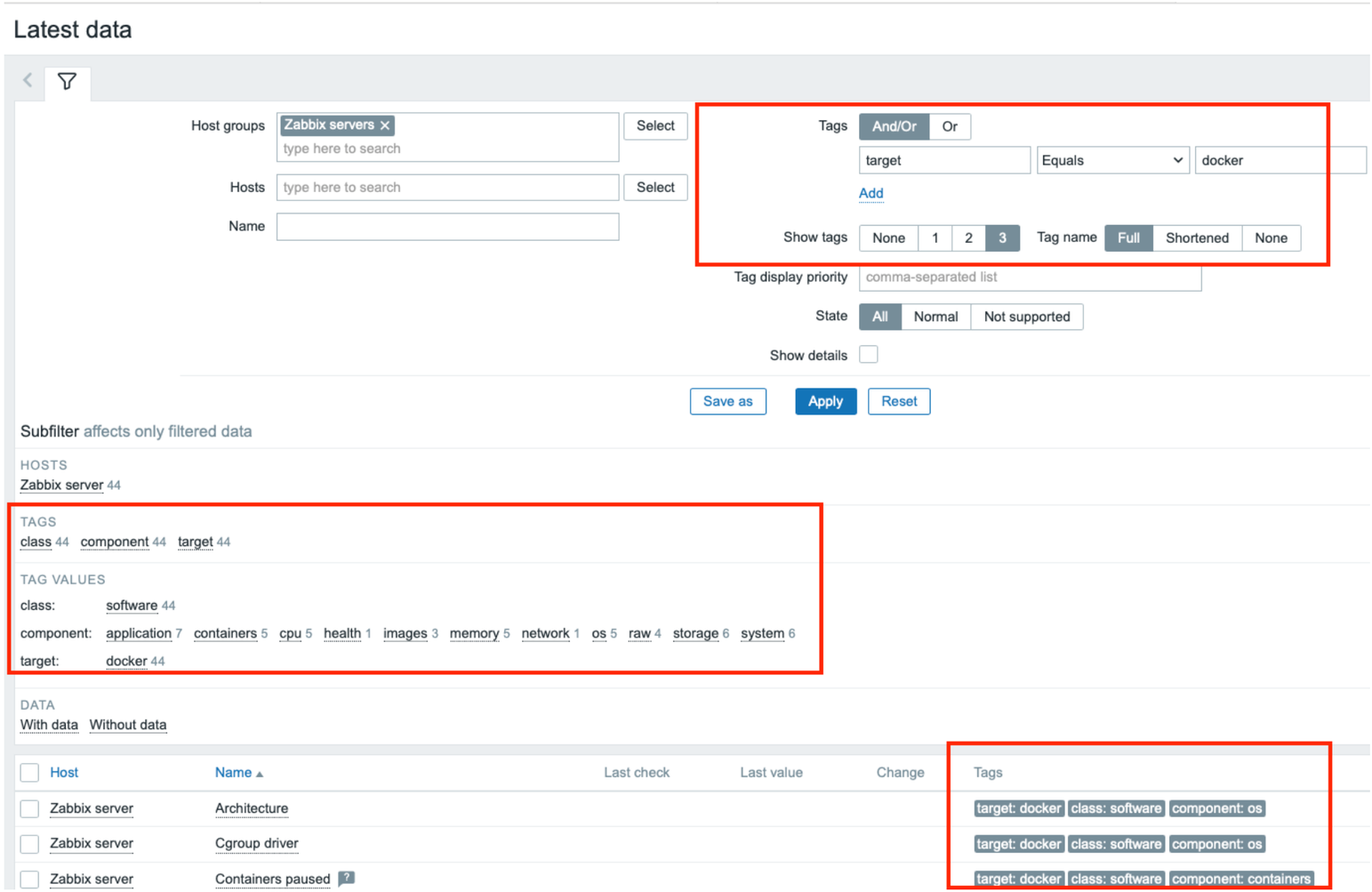
No discovery rules, no graphs

Item and trigger – also applies to prototypes

Latest data filtering



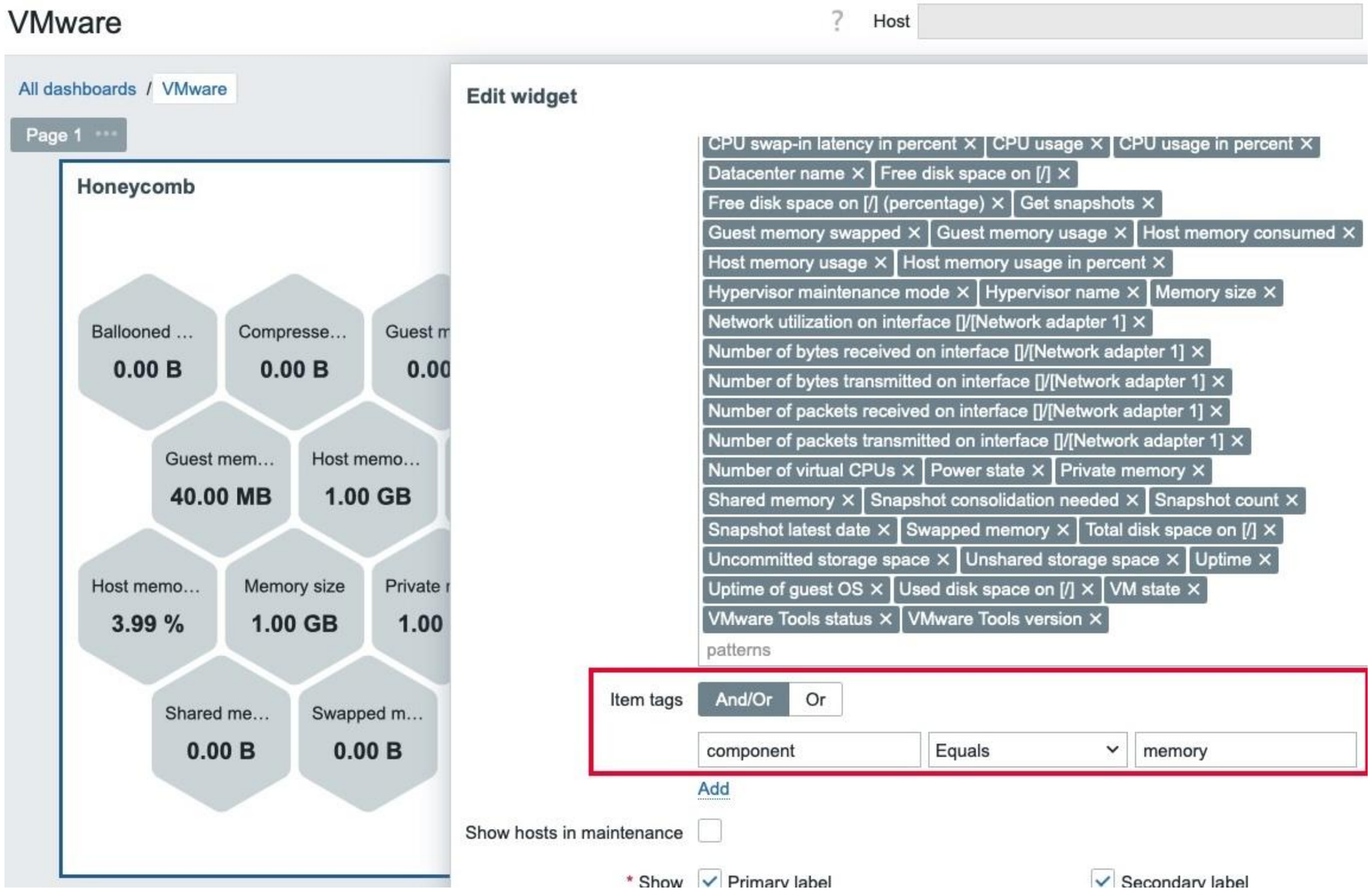
Latest data



+ scope overview

Widgets

- Geomap widget
- Graph
- Honeycomb
- Top items
- Top hosts
- Top triggers
- Trigger overview
- Host card
- Item card
- Host navigator
- Item navigator
- Problem hosts
- Problems
- Web monitoring



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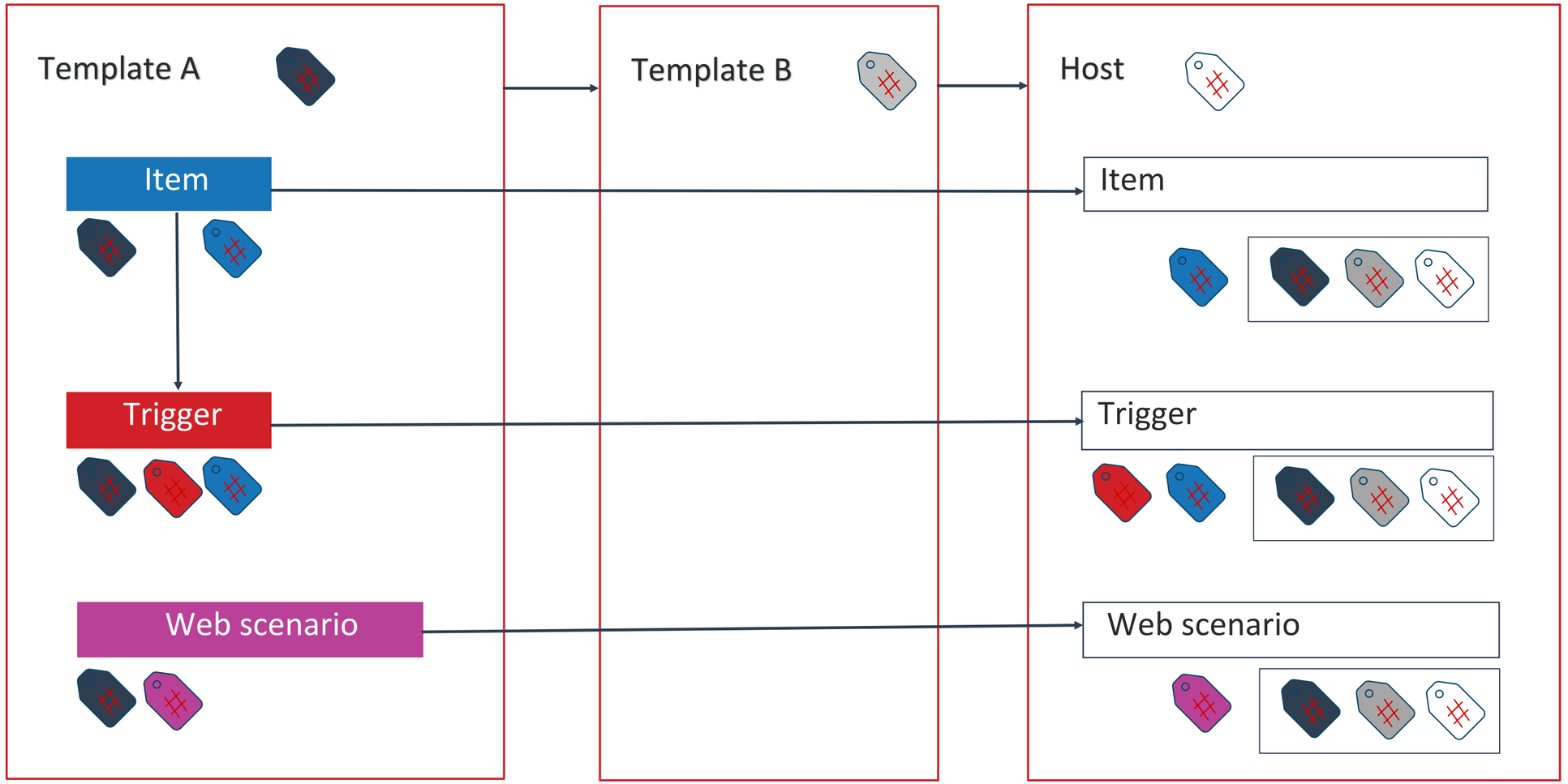
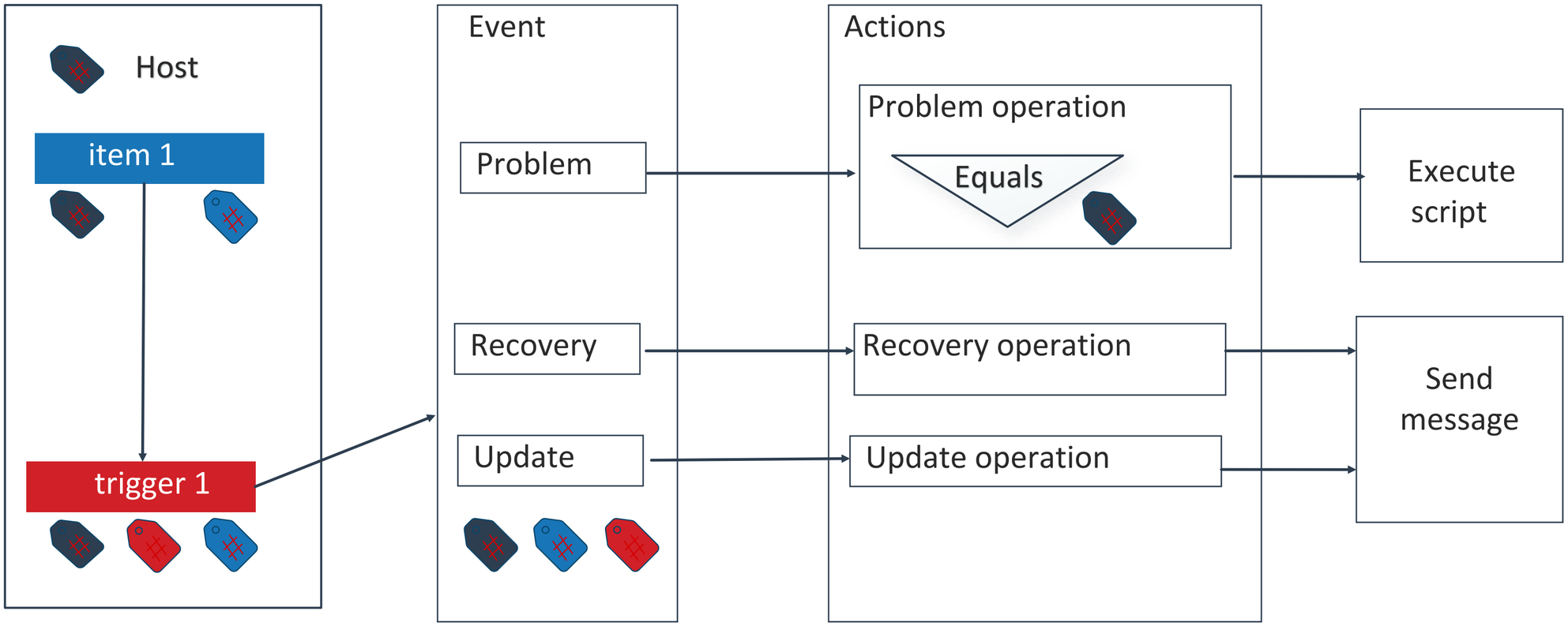
Events

- Most important use-case for tags
- Processed by Zabbix server
- Problem, recovery, or update

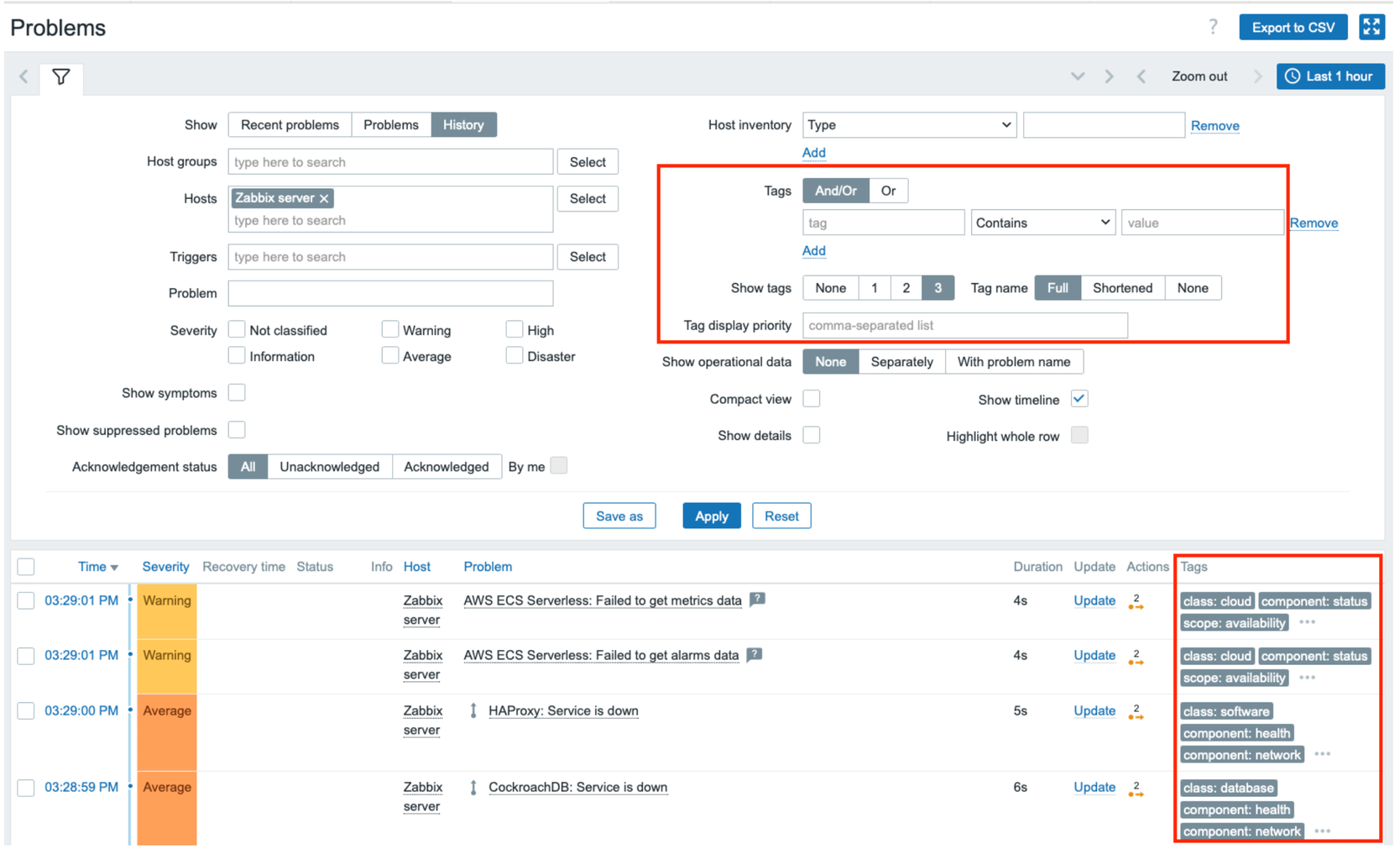
Adding tags, templates



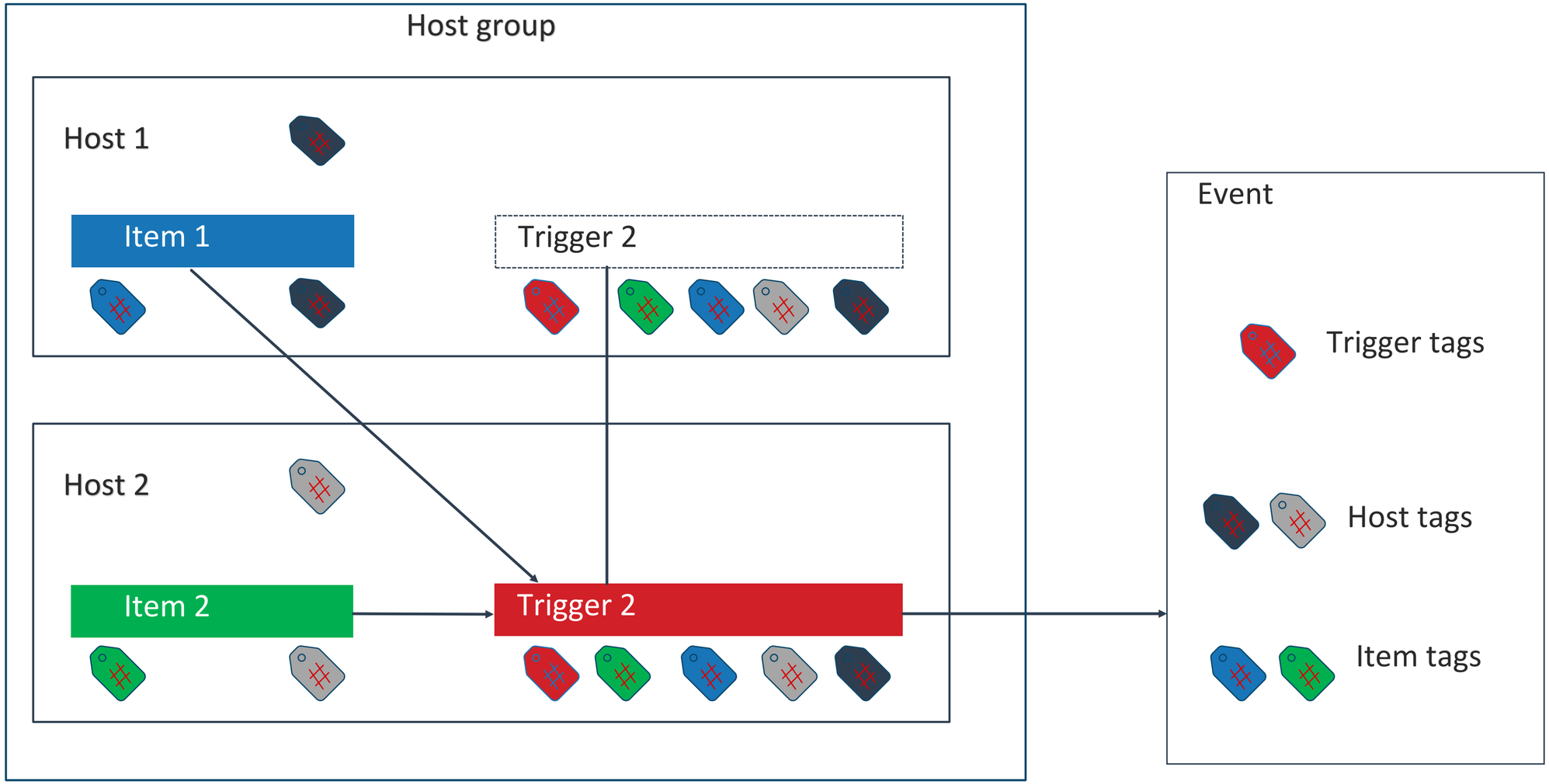
Events


Host
item 1
trigger 1
Event
Problem
Recovery
Update
Actions
Problem operation
Equals
Recovery operation
Update operation
Execute script
Send message

Events


Problems
Export to CSV
Zoom out
Last 1 hour
Show
Recent problems
Problems
History
Host groups
type here to search
Select
Hosts
Zabbix server
type here to search
Triggers
Problem
Severity
Not classified
Information
Warning
Average
High
Disaster
Show symptoms
Show suppressed problems
Acknowledgement status
All
Unacknowledged
Acknowledged
By me
Host inventory
Type
Remove
Add
Tags
And/Or
Or
tag
Contains
value
Show tags
None
1
2
3
Tag name
Full
Shortened
None
Tag display priority
comma-separated list
Show operational data
None
Separately
With problem name
Compact view
Show timeline
Show details
Highlight whole row
Save as
Apply
Reset
Time
Severity
Recovery time
Status
Info
Host
Problem
Duration
Update
Actions
Tags
03:29:01 PM
Warning
Zabbix server
AWS ECS Serverless: Failed to get metrics data
4s
Update
class: cloud
component: status
scope: availability
03:29:01 PM
Warning
Zabbix server
AWS ECS Serverless: Failed to get alarms data
4s
Update
class: cloud
component: status
scope: availability
03:29:00 PM
Average
Zabbix server
HAProxy: Service is down
5s
Update
class: software
component: health
component: network
03:28:59 PM
Average
Zabbix server
CockroachDB: Service is down
6s
Update
class: database
component: health
component: network

Events

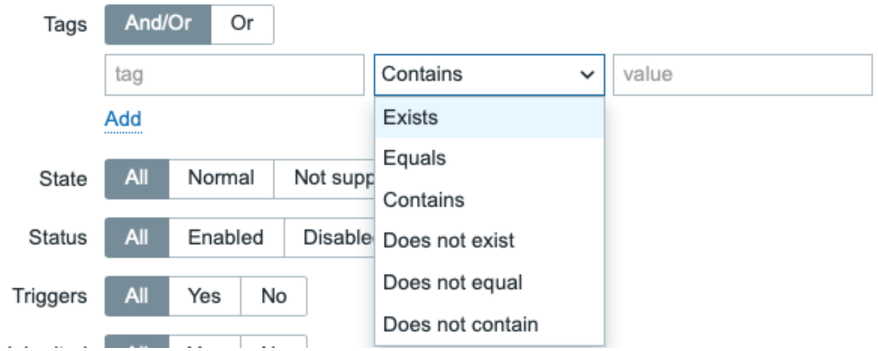

Host group
Host 1
Item 1
Trigger 2
Host 2
Item 2
Trigger 2
Event
Trigger tags
Host tags
Item tags

Tag filter

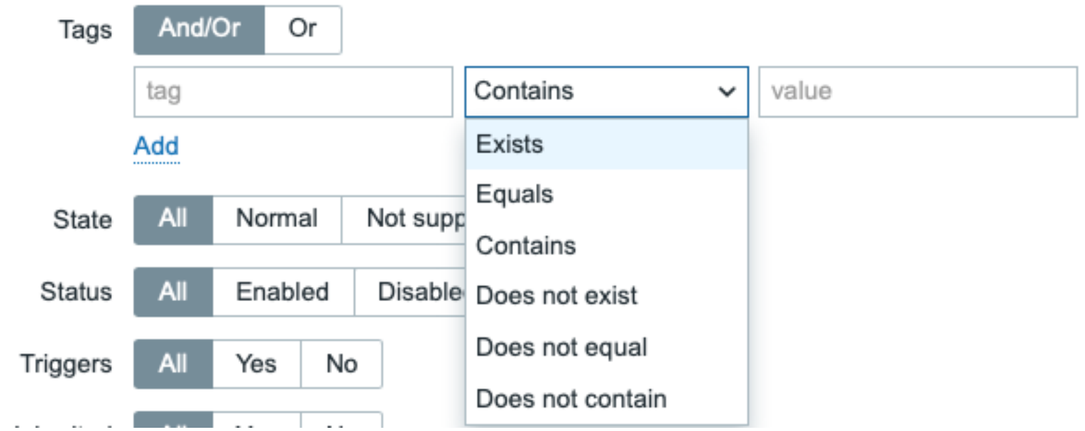
And/Or

Or - for same tag names

And - for different tag names



Tag filter



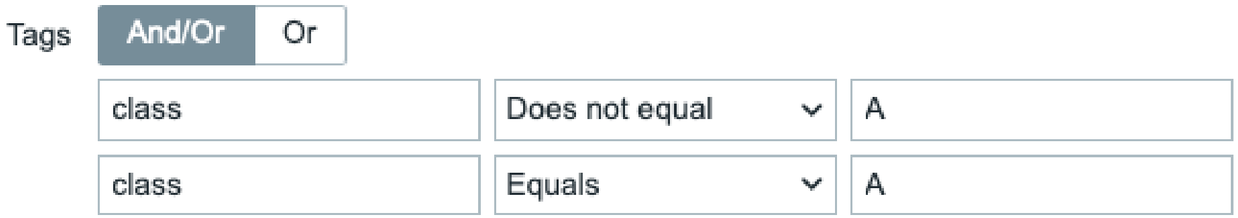
Does not equal

- <tag name> does not equal <tag value> OR there is no such <tag name>

Case sensitivity

- Tag name - case sensitive
- Tag value - case sensitive, (but in ‘Contains’ and ‘Does not contain’ NOT case sensitive)

Tag filter – example 1

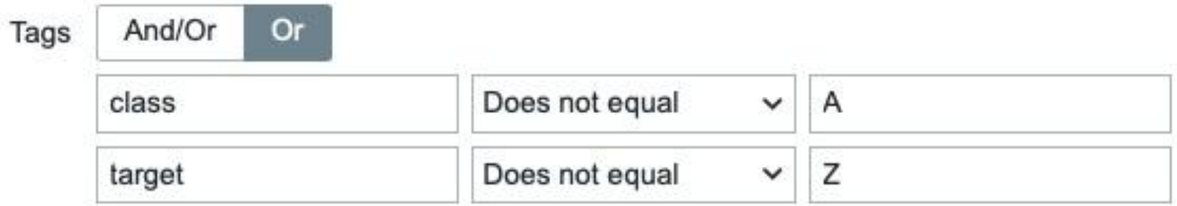


Name	Tags
NO_TAG	
3	class: A class: B target: Z
2	class: A target: Z
1	target: Z

Result – everything is shown

Name	Tags
NO_TAG	
3	class: A class: B target: Z
2	class: A target: Z
1	target: Z

Tag filter – example 2



Name	Tags
NO_TAG	
3	class: A class: B target: Z
2	class: A target: Z
1	target: Z

Result

Name	Tags
NO_TAG	
1	target: Z

Tag filter – example 3

Name	Tags
NO_TAG	
3	class: A class: B target: Z
2	class: A target: Z
1	target: Z

Result

	Name	Tags
	NO_TAG	

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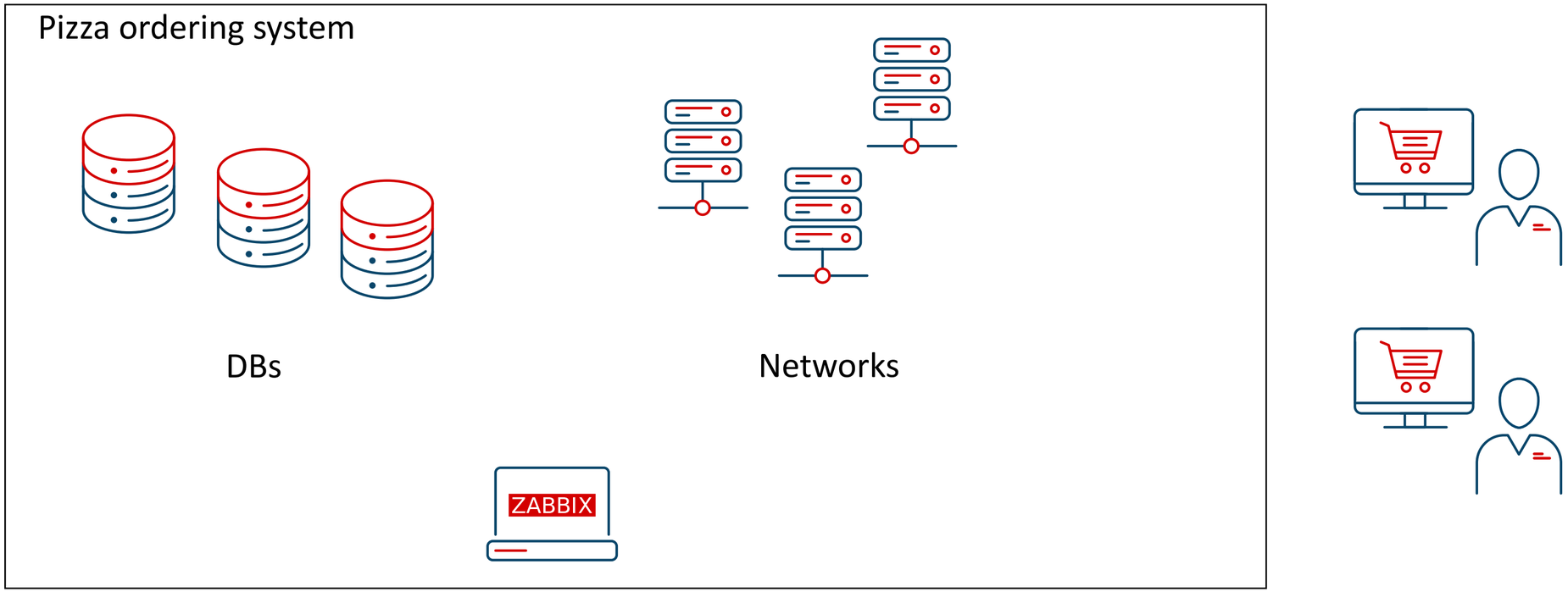
SLA

Report if group of triggers was in the problem state <SLO> % of time

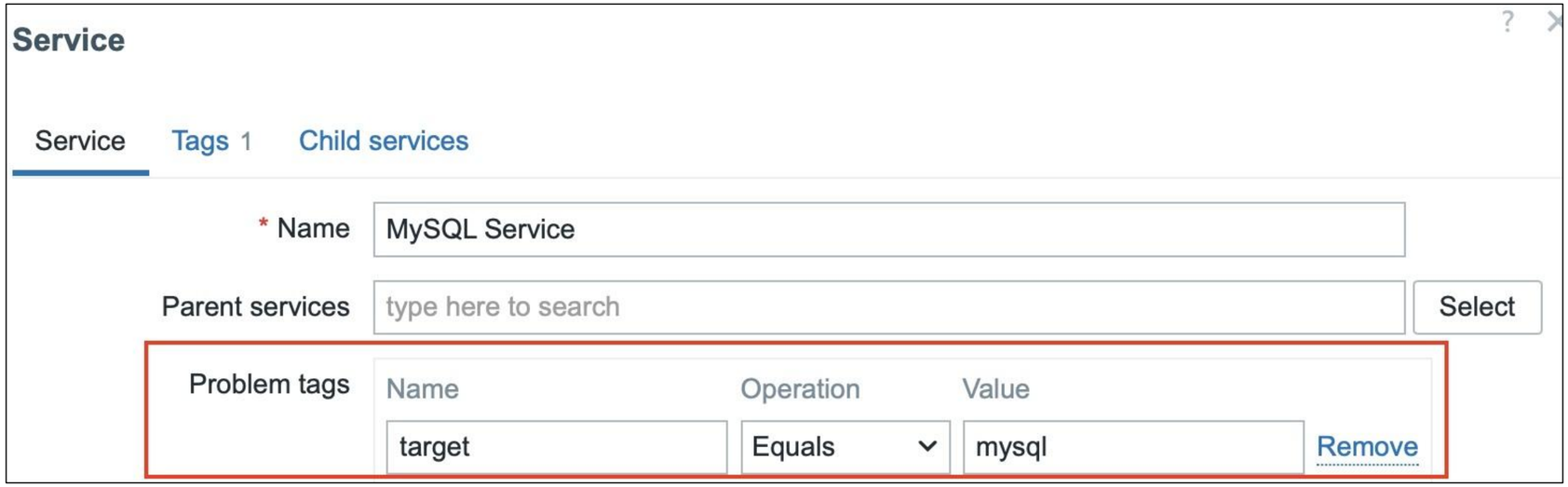
SLA

Use case



SLA

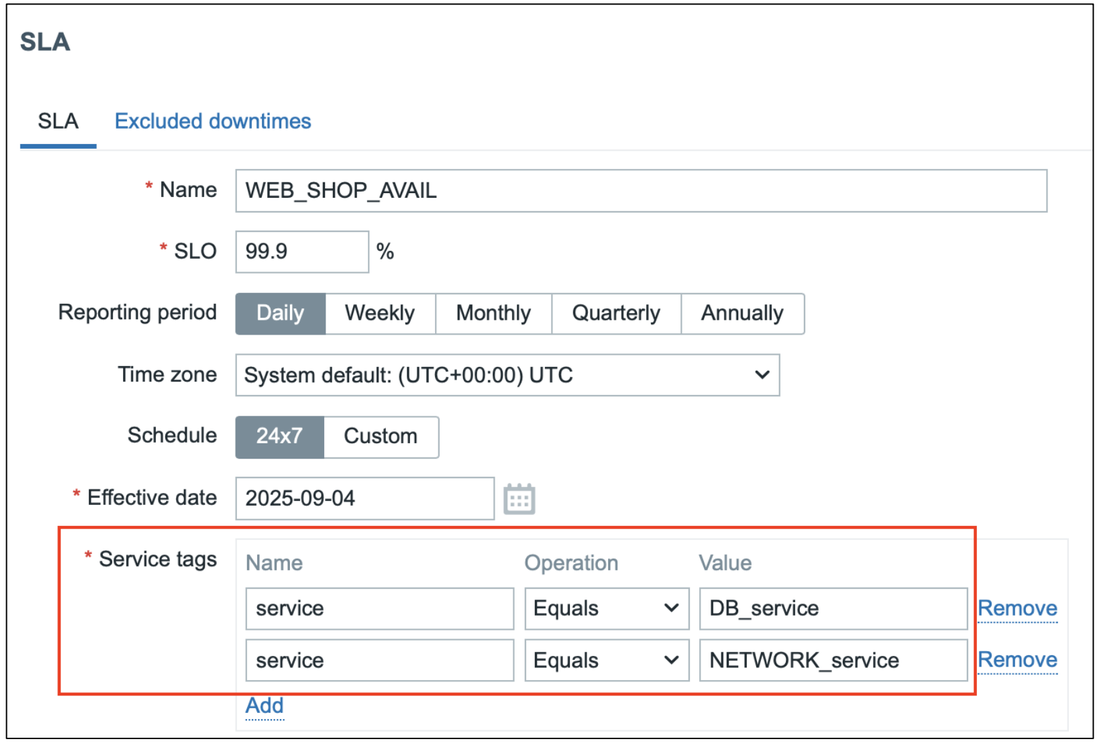
Use case

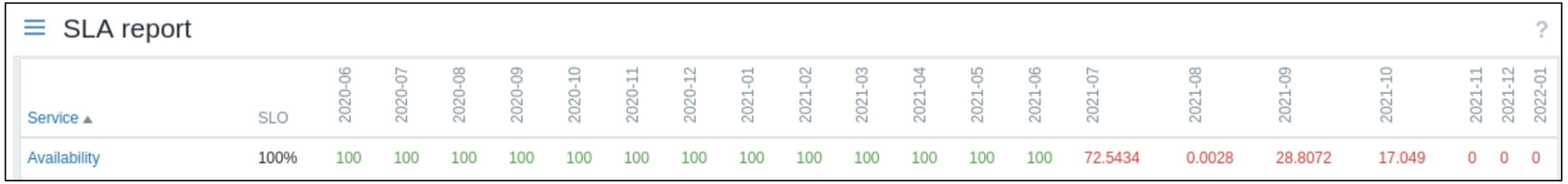

Service
Service
Tags 1
Child services
* Name
MySQL Service
Parent services
type here to search
Select
Problem tags
Name
Operation
Value
target
Equals
mysql
Remove


Service
Tags 1
Child services
Tags
Name
Value
service
DB_service

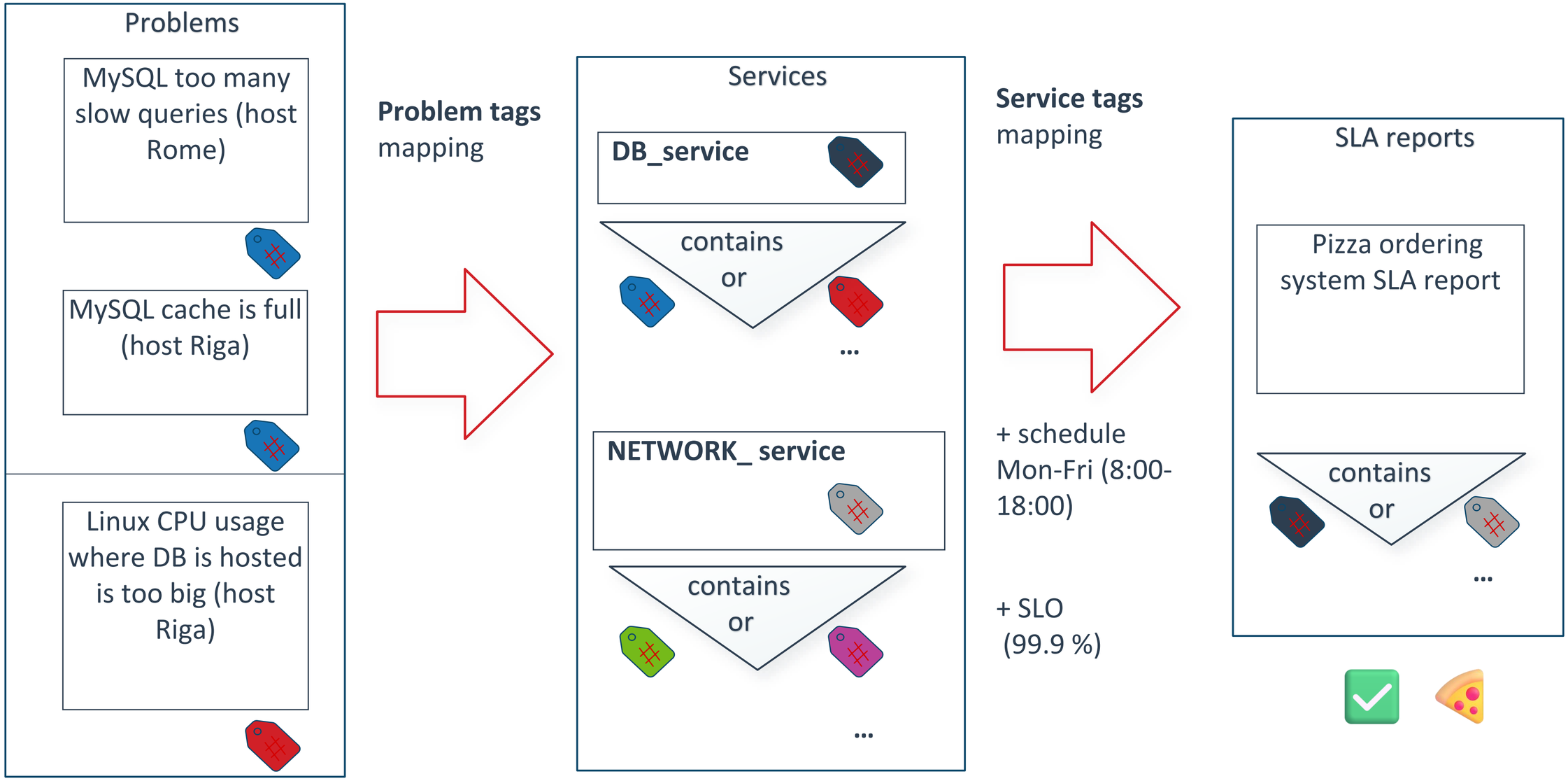
SLA

Use case


SLA
SLA
Excluded downtimes
* Name
WEB_SHOP_AVAIL
* SLO
99.9
%
Reporting period
Daily
Weekly
Monthly
Quarterly
Annually
Time zone
System default: (UTC+00:00) UTC
Schedule
24x7
Custom
* Effective date
2025-09-04
* Service tags
Name
Operation
Value
service
Equals
DB_service
Remove
service
Equals
NETWORK_service
Remove
Add


SLA report
Service
SLO
2020-06
2020-07
2020-08
2020-09
2020-10
2020-11
2020-12
2021-01
2021-02
2021-03
2021-04
2021-05
2021-06
2021-07
2021-08
2021-09
2021-10
2021-11
2021-12
2022-01
Availability
100%
100
100
100
100
100
100
100
100
100
100
100
100
100
72.5434
0.0028
28.8072
17.049
0
0
0

SLA


Problems
MySQL too many slow queries (host Rome)
MySQL cache is full (host Riga)
Linux CPU usage where DB is hosted is too big (host Riga)
Problem tags
mapping
Services
DB_service
contains
or
...
NETWORK_ service
contains
or
...
Service tags
mapping
+ schedule
Mon-Fri (8:00-18:00)
+ SLO
(99.9 %)
SLA reports
Pizza ordering system SLA report
contains
or
...

Macros

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Adding tags automatically

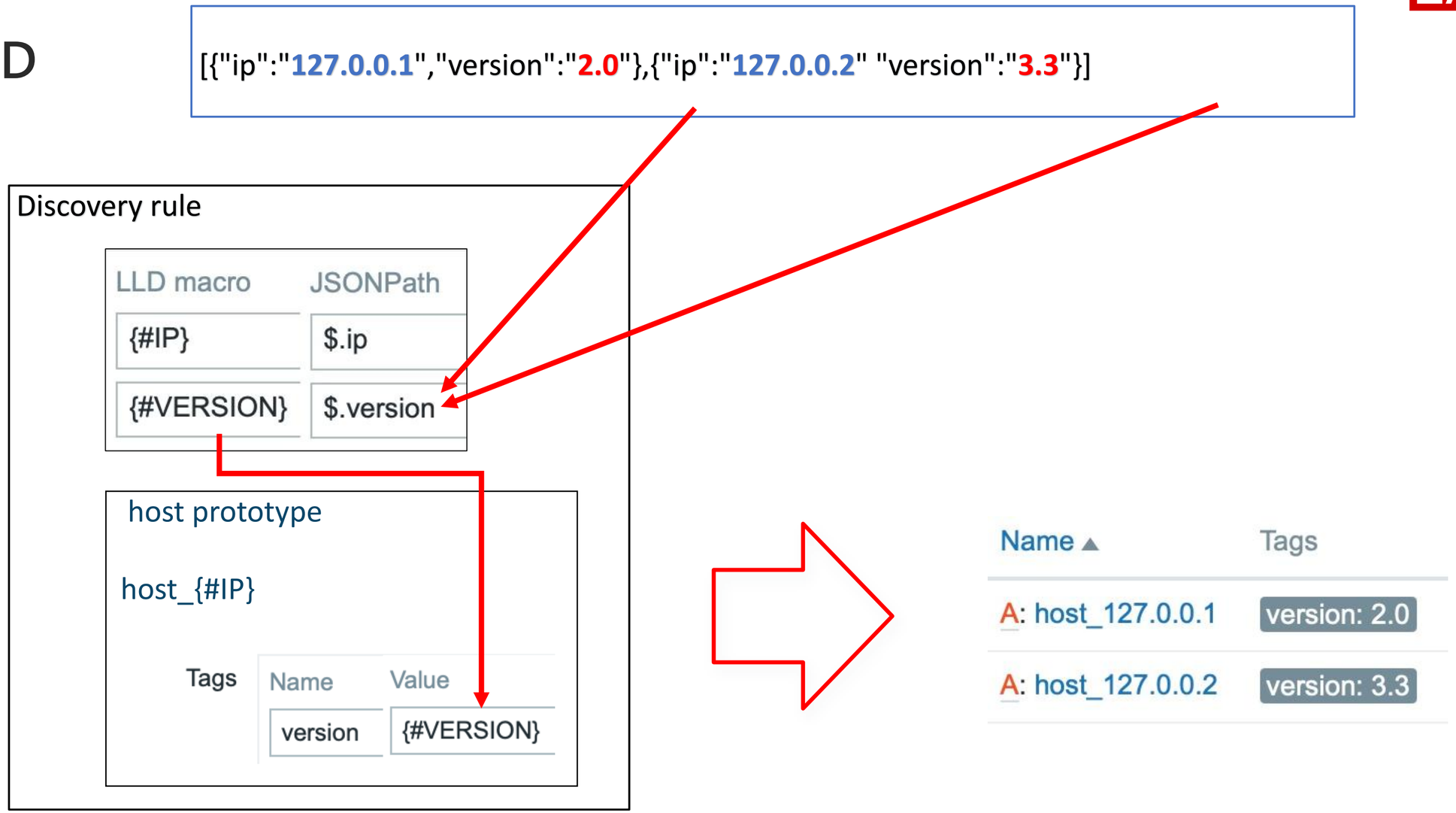
To hosts

- Autoregistration – in Autoregistration actions
- Network discovery – in Discovery actions

To hosts, items, and triggers

- LLD

LLD


[{"ip":"127.0.0.1","version":"2.0"},{"ip":"127.0.0.2" "version":"3.3"}]
Discovery rule
LLD macro
JSONPath
{#IP}
$.ip
{#VERSION}
$.version
host prototype
host_{#IP}
Tags
Name
Value
version
{#VERSION}
Name ▲
Tags
A: host_127.0.0.1
version: 2.0
A: host_127.0.0.2
version: 3.3

Macros in tags

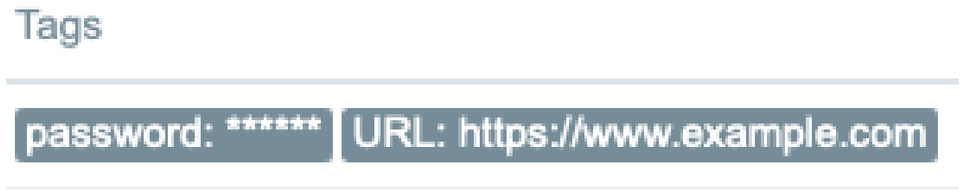
LLD macros	{#MACRO}
Built-in macros	{MACRO}
User macros (global or host)	{$MACRO}
~~Expression macros - {?MACRO}~~	{?MACRO}

User macros

Host macros

Host tags

Problem



Built-in macros

Resolved only during the **event generation**

Host macros

- {HOST.CONN}, {HOST.DNS}, {HOST.HOST}, {HOST.ID}, {HOST.IP}, {HOST.NAME}, {HOST.PORT}

{HOST.IP} -> 127.0.0.1

{HOST.NAME} -> Zabbix server

{HOST.PORT} -> 10050

Built-in macros

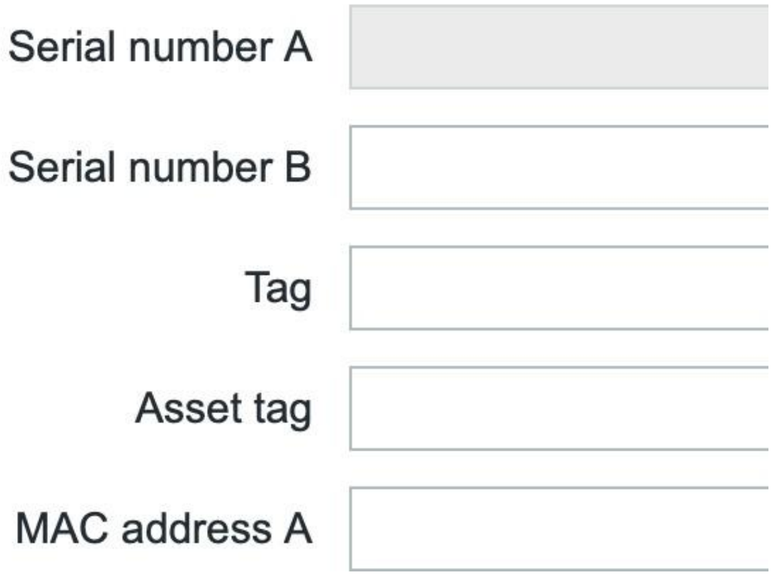
Resolved only during the **event generation**

Host inventory macros

- {INVENTORY.HW.ARCH} , {INVENTORY.OS} …

  …

{INVENTORY.TAG}, {INVENTORY.ASSET.TAG}



Built-in macros

Resolved only during the **event generation**

Item macros

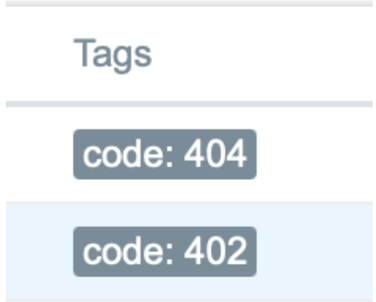
{ITEM.LASTVALUE*}, {ITEM.LOG.*}, {ITEM.VALUE*}

Common use cases, extract:

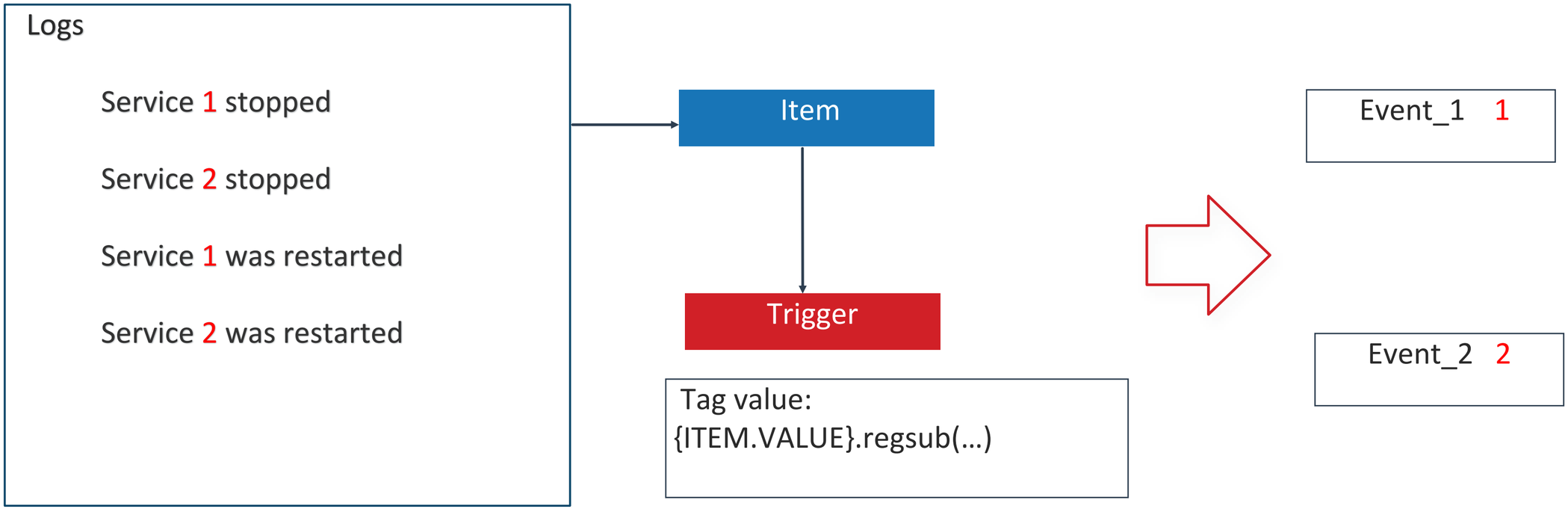
- SNMP OIDs
- error codes

With the help of macro functions

{{ITEM.VALUE}.regsub(pattern, output)}



Event correlation



Events get **context** which is stored in the tag.

Alerts

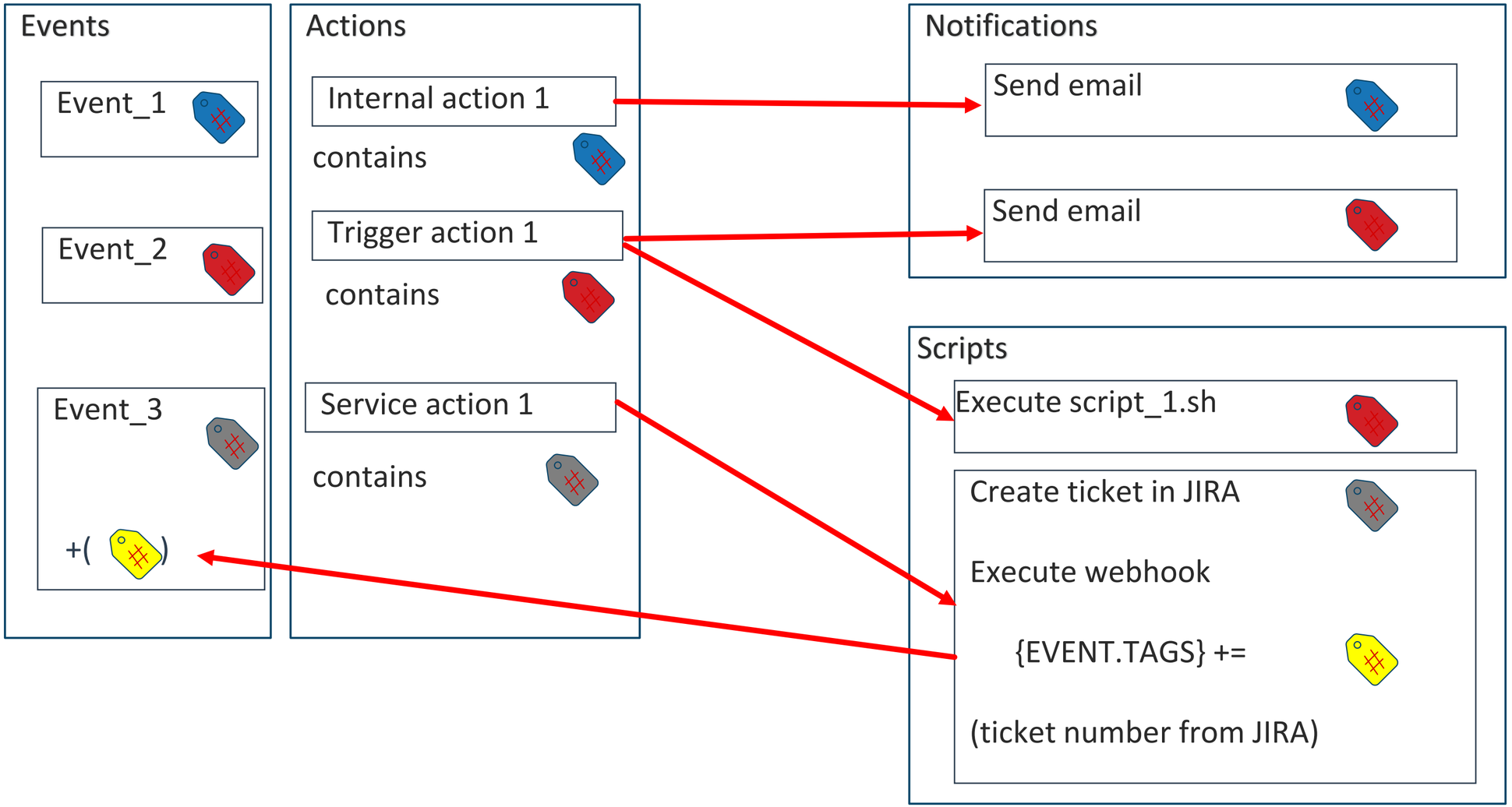
{EVENT.TAGS}

{EVENT.TAGSJSON}

{EVENT.TAGS<tag name>}

- Can be used in scripts/webhooks
- Can retrieve the Jira ticket number and attach it to the problem as a tag
- Communication channel + macros (notifications)

Alerts


Events
Event_1
Event_2
Event_3
+( )
Actions
Internal action 1
contains
Trigger action 1
contains
Service action 1
contains
Notifications
Send email
Send email
Scripts
Execute script_1.sh
Create ticket in JIRA
Execute webhook
{EVENT.TAGS} +=
(ticket number from JIRA)

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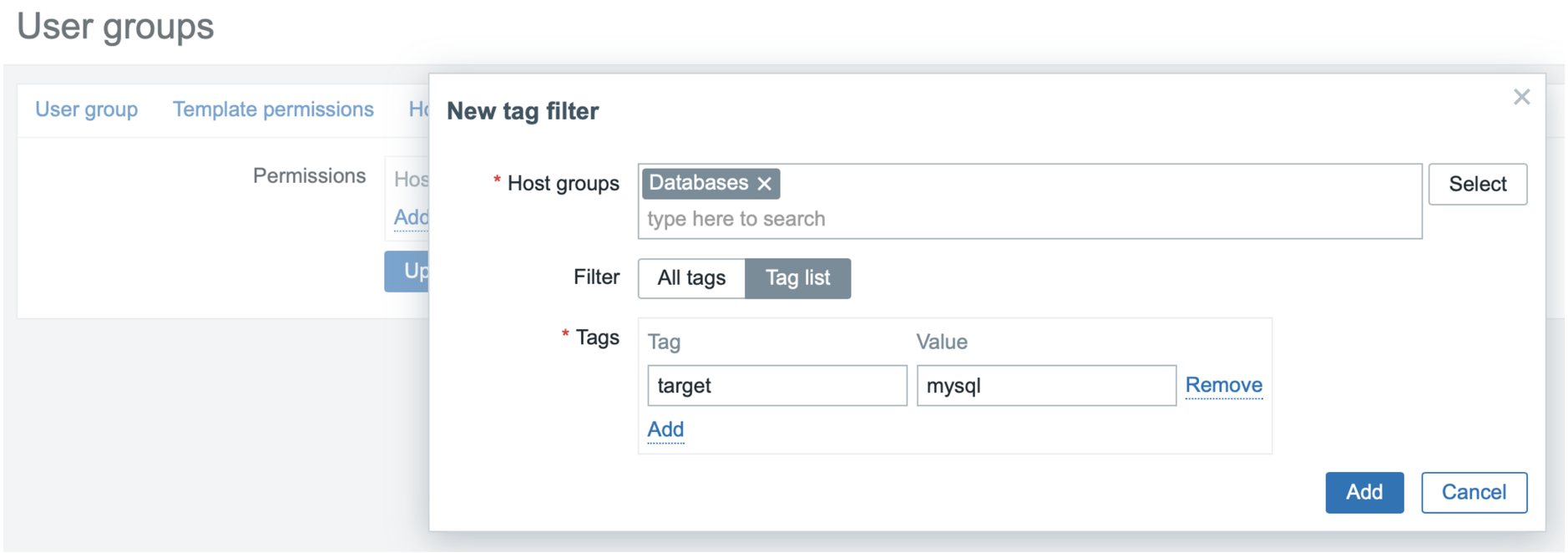
Other use cases

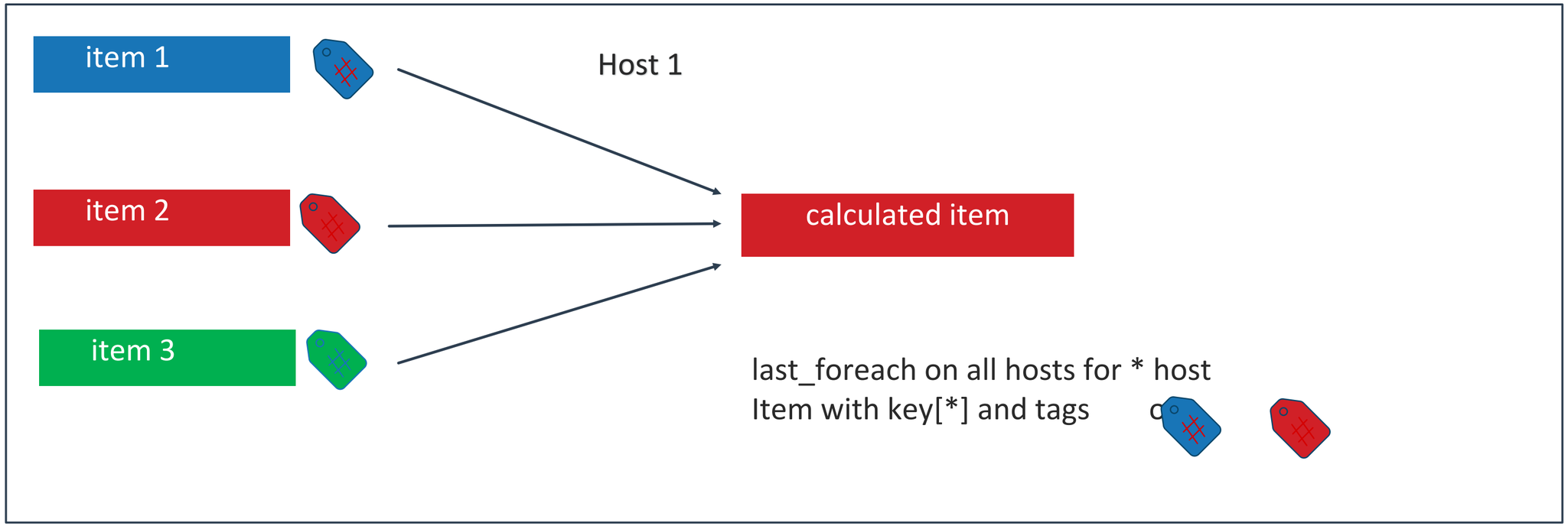
- Aggregate functions
- Maintenance
- User groups access control

User groups access control



Allow certain user groups to see problems (from particular host groups) according to tags.

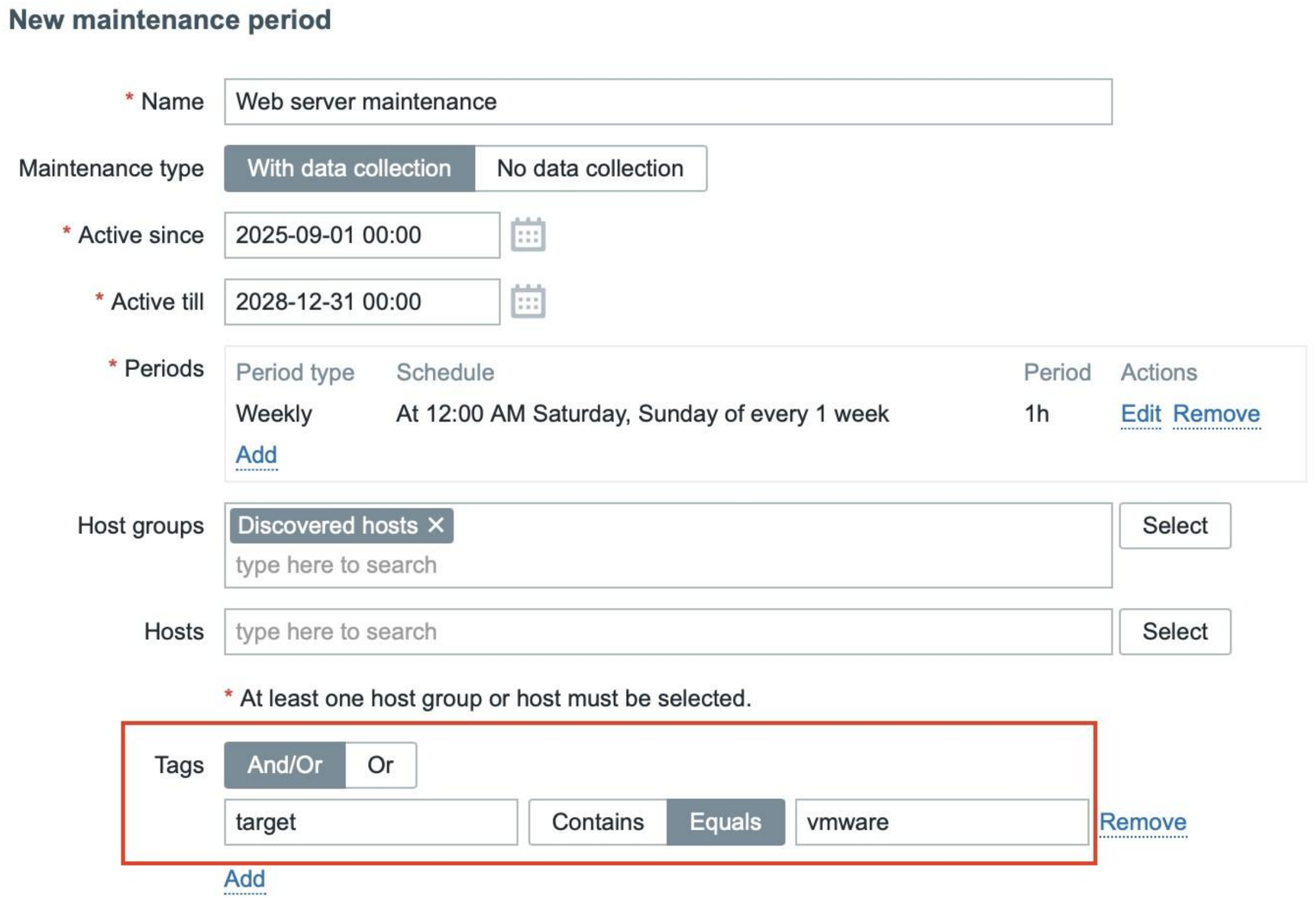
_foreach functions



Calculated item, aggregate functions – avg, exists, count, etc. on selection of items.

Maintenance

For triggers from multiple hosts for a particular tag…



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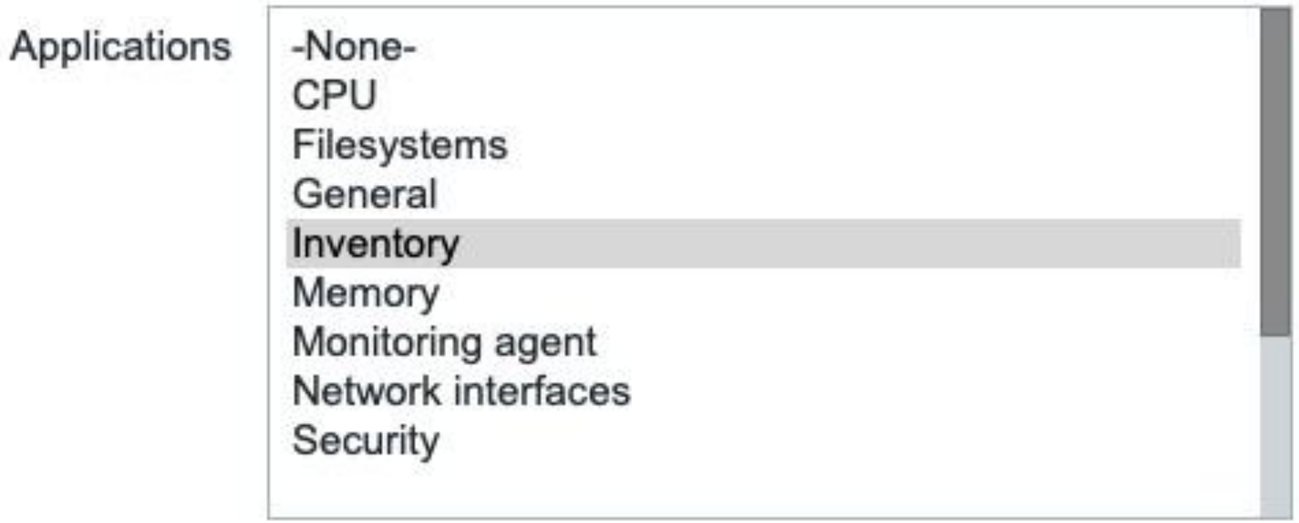
Inherited tags

Applications

Legacy feature, Zabbix 5.0

Host with many templates – not a common use case.

Additional grouping to hosts.



Item grouping - Tags vs. Applications vs. Hosts

Applications

- Logical grouping of items
- Optional (item may not belong to any application)
- Single dimension - item can belong at most to one application

Tags

- Logical grouping of items + events, triggers, hosts, templates, web scenarios
- Optional (item may not have any tags)
- Multidimensional - item can have many tags
- Filtering by key/value combinations

Hosts

- Logical grouping of items
- Mandatory (item must belong to a host)
- Single dimension - item can belong at most to 1 host

Template prefixes

Can't just search by name ? Zabbix 6.0 – Templates were made consistent.
Name of template added to items, triggers, graphs, hosts.

Host	Name ▲	Last check	Last value	Change	Tags
Zabbix server	Acronis CPC: Get access token				component: authoriz…
Zabbix server	Apache: Bytes per second	1s	8.09 KBps	+7.13 KBps	component: network
Zabbix server	Apache: CPU utilization	3s	0 %		component: cpu
Zabbix server	Apache: Get status	1s	{"Date":"Tue, 09 …		component: raw
Zabbix server	Apache: Memory usage (rss)	5s	0 B		component: memory

which allowed wildcard search.. But added lots of duplication…

7.0.0 - prefixes were removed - ZBXNEXT-8746 (result -> tags not available in notifications)
7.0.7 - prefixes were restored in ZBX-24866 but partially only for triggers..

Inherited tags

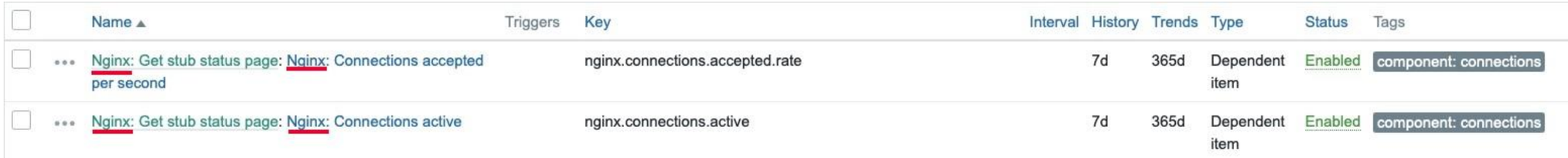
Before Zabbix 8.0

No inherited tags from templates are shown...

Templates

Nginx by HTTP	Hosts	Items 13	Triggers 5	Graphs 3	Dashboards 1	Discovery	Web	class: software target: nginx
Nginx by Zabbix agent	Hosts 1	Items 17	Triggers 6	Graphs 4	Dashboards 1	Discovery	Web	class: software target: nginx

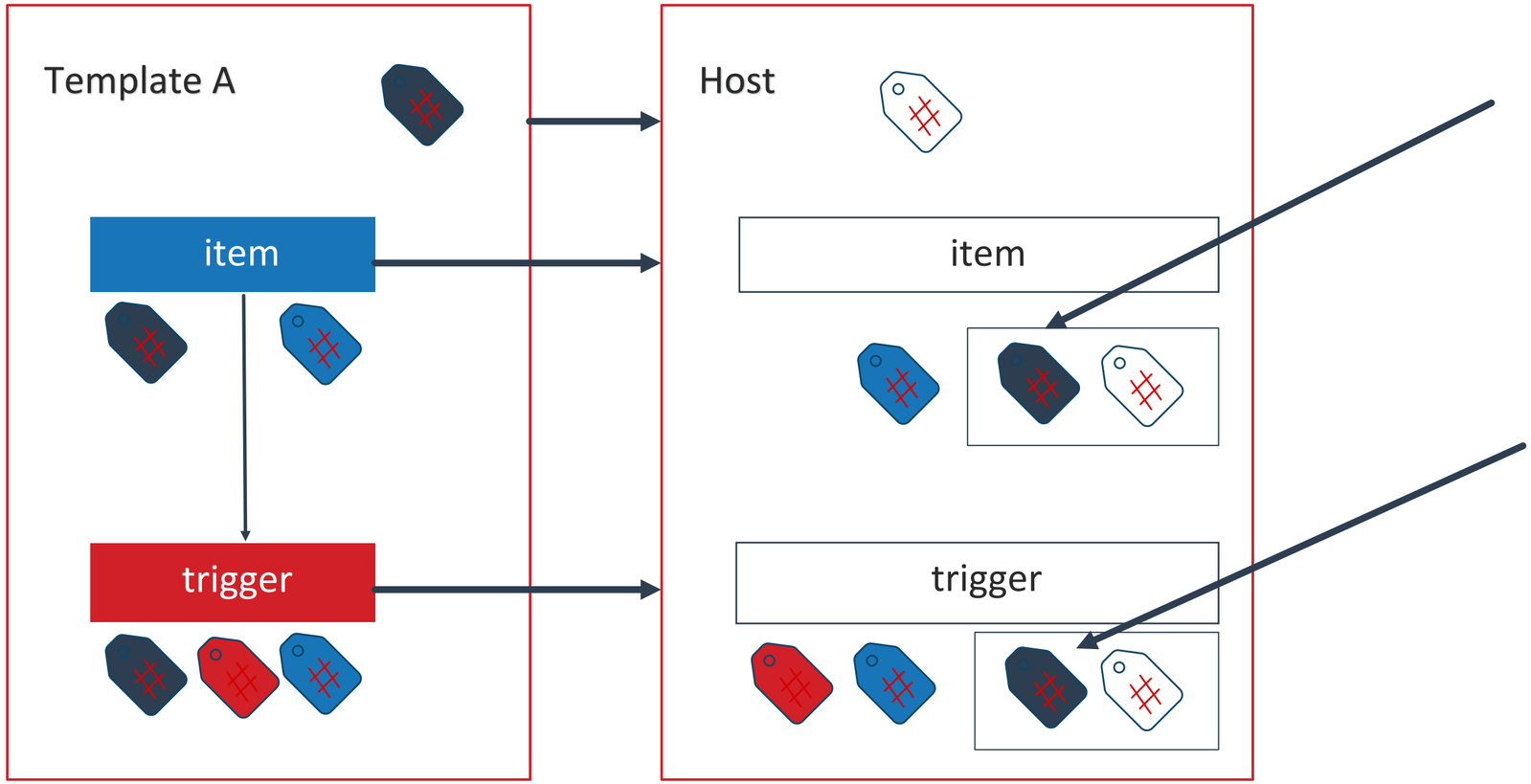
Items



Name ▲	Triggers	Key	Interval	History	Trends	Type	Status	Tags
Nginx: Get stub status page: Nginx: Connections accepted per second		nginx.connections.accepted.rate		7d	365d	Dependent item	Enabled	component: connections
Nginx: Get stub status page: Nginx: Connections active		nginx.connections.active		7d	365d	Dependent item	Enabled	component: connections

Limitation

Before Zabbix 8.0 - ZBXNEXT-9546



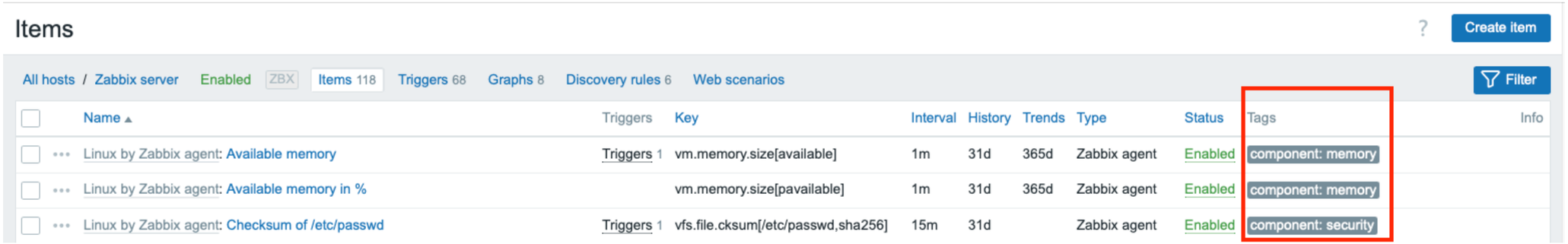
Not displayed
in front-end in:

- Latest Data
- Items
- Triggers
- Hosts
- Widgets

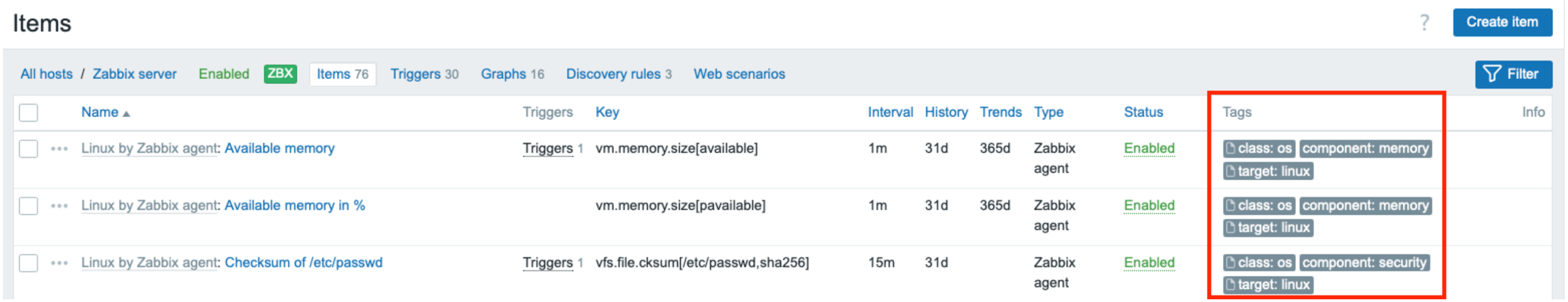
Inherited tags

Items display template tags (same with triggers)

Before



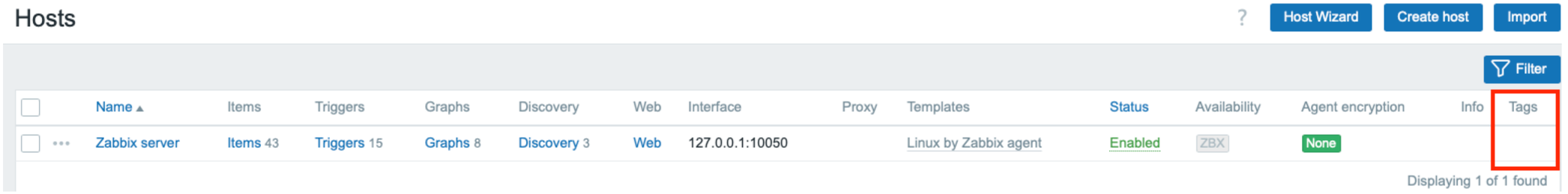
Now



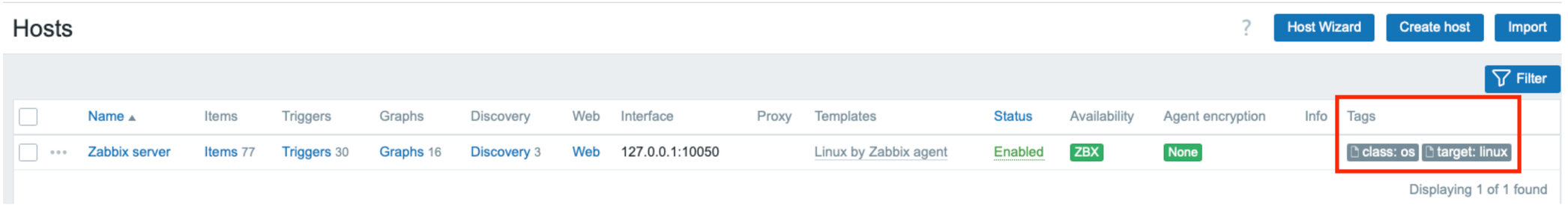
Inherited tags

Host display template tags

Before

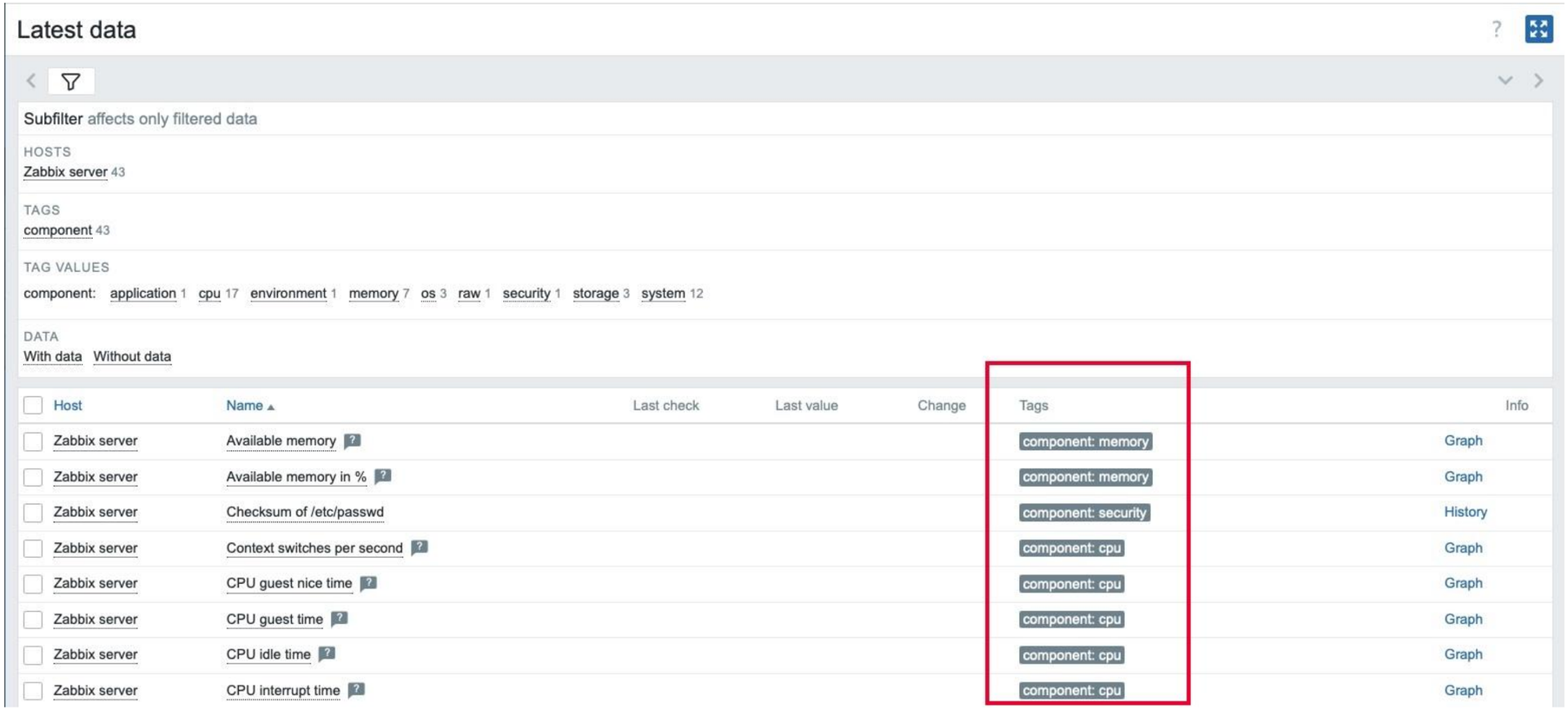


Now



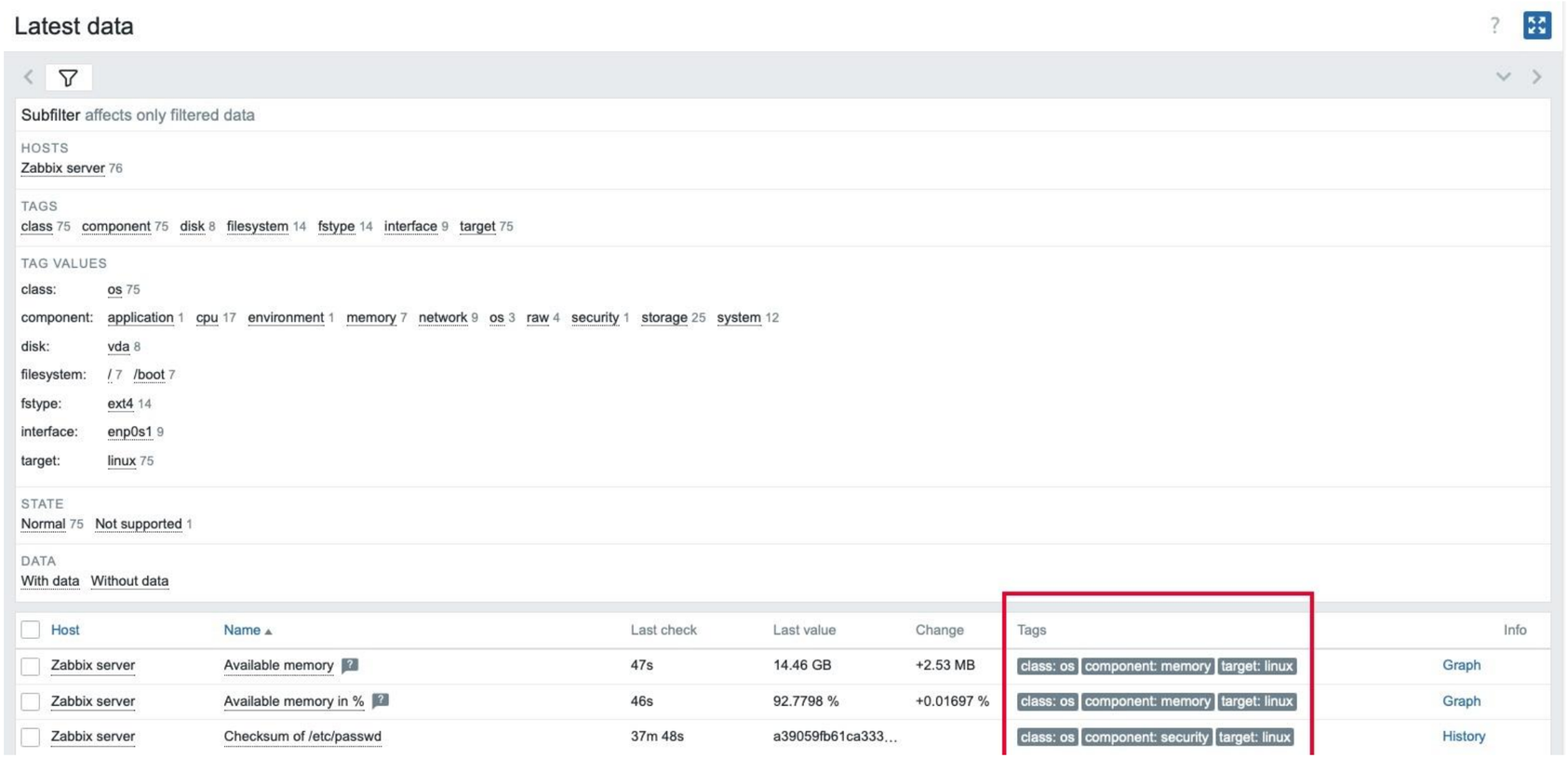
Inherited tags – Latest data

Before



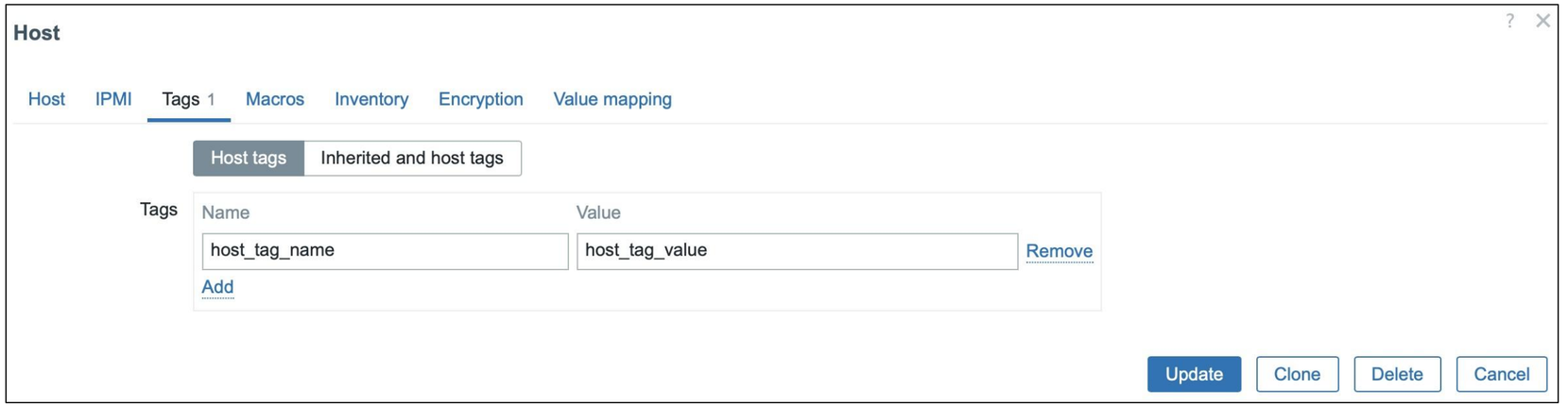
Inherited tags – Latest data

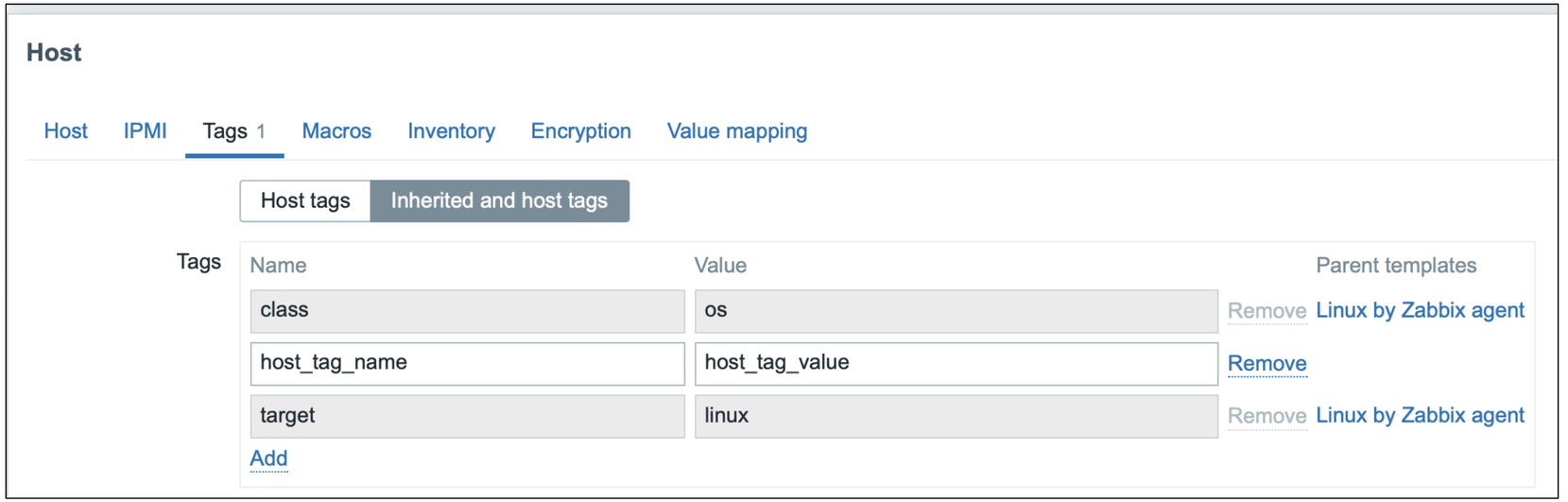
Now



Inherited tags – Tags menu

Now





ZABBIX SUMMIT

OCTOBER 8 · 10, 2025
RIGA · LATVIA

Tag naming policy

Tag naming policy

Tags bind together most components of Zabbix!

SLA

Alerts

Event correlation

Widgets

Webhooks

Latest Data

Tags

Configuration

User groups

Calculated items

LLD

Tag naming policy

Grouping:

- Events
- Configurations
- Metric data

According to:

- Zabbix features
- Your **unique business environment**

Tag naming policy - possible suggestions

- **Location** – Asia-Pacific, US West Side, BRST, Room 404, … (consider host, host group)

  Can use emojis - BR MX JP US LV

- **Departments** – accountancy, HR, security …
- **IT services** – DNS, HTTP, SSH, …. (consider SLA)
- Software **release cycles** – Production, QA, Dev, …
- **Versions** of the product – MariaDB 12.1, Apache 2.4.4, …

Tag naming policy

Zabbix template naming guidelines

Template: class -> database, network, os, power, etc.

Items: component -> memory, network, software, etc.

Triggers: scope -> performance, security, availability, etc.

Guidelines on creating templates
https://www.zabbix.com/documentation/guidelines/en/thosts

Links

Tagging documentation

https://www.zabbix.com/documentation/7.4/en/manual/config/tagging

Built-in macros

https://www.zabbix.com/documentation/current/en/manual/appendix/macros/supported_by_locati

Initmax presentation on tags in Zabbix 6.0

https://www.initmax.cz/wp-content/uploads/2022/05/power-of-tags-6.0.pdf

Tags are your friends