



ZABBIX 5.0

(MY PERSONAL...) KEY FEATURES IN DETAIL



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01



MONITORING → HOSTS AND THE NEW GUI

- ⊙ New menu respecting modern wide screens
- ⊙ Changes for handling higher # of hosts to monitor
- ⊙ Monitoring → Hosts as a new central view
- ⊙ Minor improvements

LIST OF MONITORED DEVICES

WHERE AM I AND WHAT IS THERE TO SEE?

- Long desired feature
- Overview of non-admins / visibility of Host Availability
- For admins: easier to get from viewing to setting things up and back

ZABBIX Fibbs

Hosts

Name:

Host groups:

IP:

DNS:

Port:

Status:

Tags:

tag: value:

Show hosts in maintenance:

Show suppressed problems:

Severity: Not classified Warning High Information Average Disaster

Name	Interface	Availability	Tags	Problems	Status	Latest data	Problems	Graphs	Screens	Web
blackbox	192.168.13.12: 161	ZBX SNMP JMX IPMI			Enabled	Latest data	Problems	Graphs	Screens	Web
carl	109.234.106.40: 10050	ZBX SNMP JMX IPMI			Enabled	Latest data	Problems	Graphs 18	Screens 1	Web
dachswitch	192.168.13.3: 161	ZBX SNMP JMX IPMI			Enabled	Latest data	Problems	Graphs 30	Screens	Web
fritzbox	192.168.13.1: 10050	ZBX SNMP JMX IPMI			Enabled	Latest data	Problems	Graphs 3	Screens 1	Web 1
greybox	192.168.13.11: 161	ZBX SNMP JMX IPMI			Enabled	Latest data	Problems	Graphs	Screens	Web

Name	Interface
blackbox	192.168.13.12: 161
carl	109.234.106.40: 10050
dachswitch	192.168.13.3: 161
fritzbox	192.168.13.1: 10050
greybox	192.168.13.11: 161
home	192.168.13.1: 10050
keller	192.168.13.1: 10050
phine	192.168.13.1: 10050
router	192.168.13.1: 10050
splun	192.168.13.1: 10050
zabbix	192.168.13.1: 10050

- HOST
- Inventory
- Latest data
- Problems
- Graphs
- Screens
- Web
- Configuration
- SCRIPTS
- Detect operating system
- Ping
- Traceroute

BETTER ADDING OF ELEMENTS TO OBJECTS NO MORE «ADD, ADD, UPDATE»...

Host **Templates** IPMI Tags Macros Inventory Encryption


Linked templates

Name	Action
Template App Zabbix Server	Unlink Unlink and clear
Template OS Linux	Unlink Unlink and clear
TEST calculated preprocessing	Unlink Unlink and clear

Link new templates

Template Module ICMP Ping

Add



Host **Templates** IPMI Tags Macros Inventory Encryption

Linked templates

Name	Action
CUS OS Linux Ubuntu	Unlink Unlink and clear
Template OS Linux	Unlink Unlink and clear


Link new templates

Template ICMP Ping

Maintenance periods


Maintenance **Periods** Hosts and groups

* Periods	Period type	Schedule	Period	Action
	Add			

1 

Maintenance period


Period type

2 

Maintenance periods

Maintenance **Periods** Hosts and groups

* Periods	Period type	Schedule	Period	Action
	One time only	2020-06-09 09:43	1h	Edit Remove
	Add			

3 

MONITORING → HOSTS → GRAPHS

DIRECT ACCESS TO ALL GRAPHS FOR ONE HOST

The image shows a sequence of Zabbix interface screenshots demonstrating navigation from a host to its specific graphs.

Hosts Page: Shows a list of hosts. The 'Zabbix server' host is highlighted. The interface includes search filters for Name, Host groups, IP, DNS, Port, Status, and Tags. A sidebar menu is visible with options like Monitoring, Dashboard, Problems, Hosts, Overview, Latest data, Screens, Maps, Discovery, and Services.

Graphs Page: Shows the 'dachswitch' host selected. The interface displays a table of interfaces and a graph for 'dachswitch: Interface ge-0/0/0'. The graph shows traffic usage over time. A sidebar menu is also visible here, with options like Reports, Configuration, Administration, Support, Share, Help, and User settings.

Cache Usage Graph: A separate graph titled 'Zabbix server: Zabbix cache usage, % used' shows the percentage of cache usage over time. A table below the graph provides summary statistics:

	last	min	avg	max
Zabbix trend write cache, % used	26.2081 %	26.1089 %	26.4097 %	26.535 %
Zabbix configuration cache, % used	48.1804 %	48.1798 %	48.1805 %	48.1817 %
Zabbix history index cache, % used	17.2187 %	16.4518 %	16.6577 %	17.2187 %
Zabbix history write cache, % used	0.0625 %	0.0003 %	0.0354 %	0.1265 %
Zabbix value cache, % used	18.3957 %	18.2577 %	18.3422 %	18.4389 %
Zabbix vmware cache, % used	2.0882 %	2.0875 %	2.0884 %	2.0905 %



02

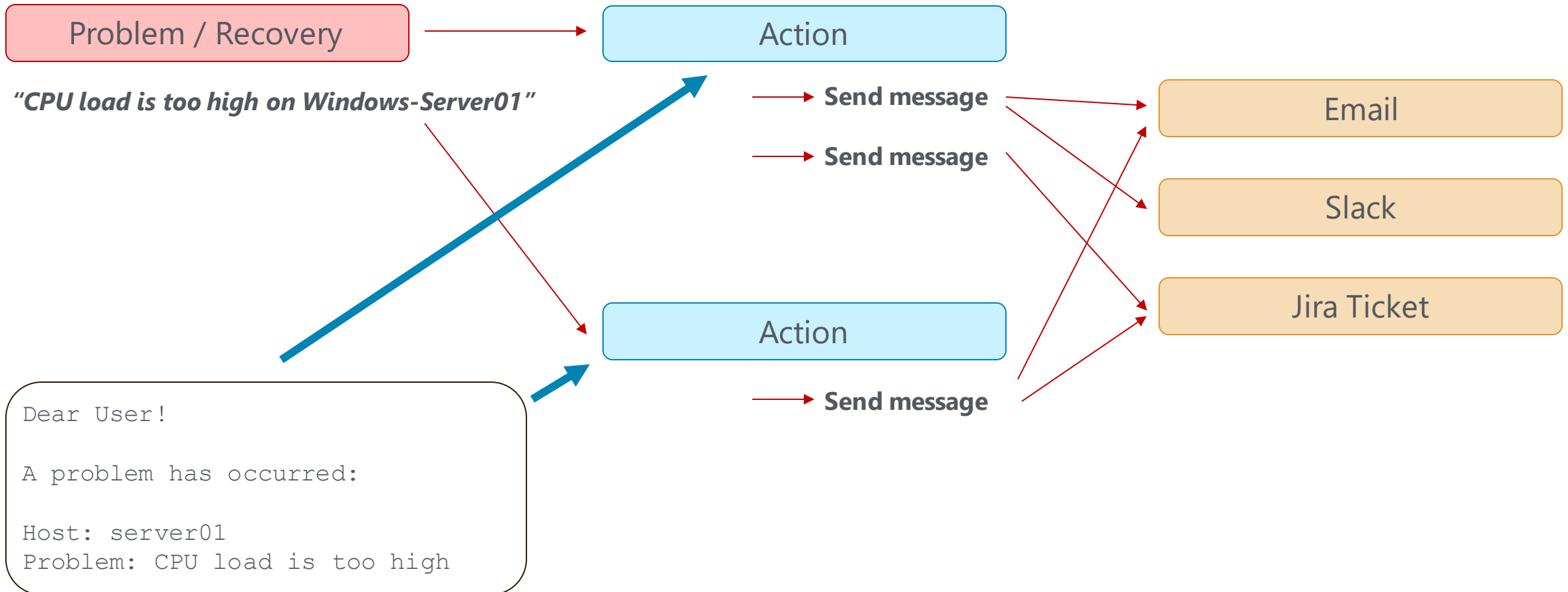


DEFAULT MESSAGES FOR EACH MEDIA TYPE

- ⊙ Easier to manage messaging guidelines
- ⊙ Perform mass changes in Action messages with couple of clicks
- ⊙ Simplify configuration of Actions

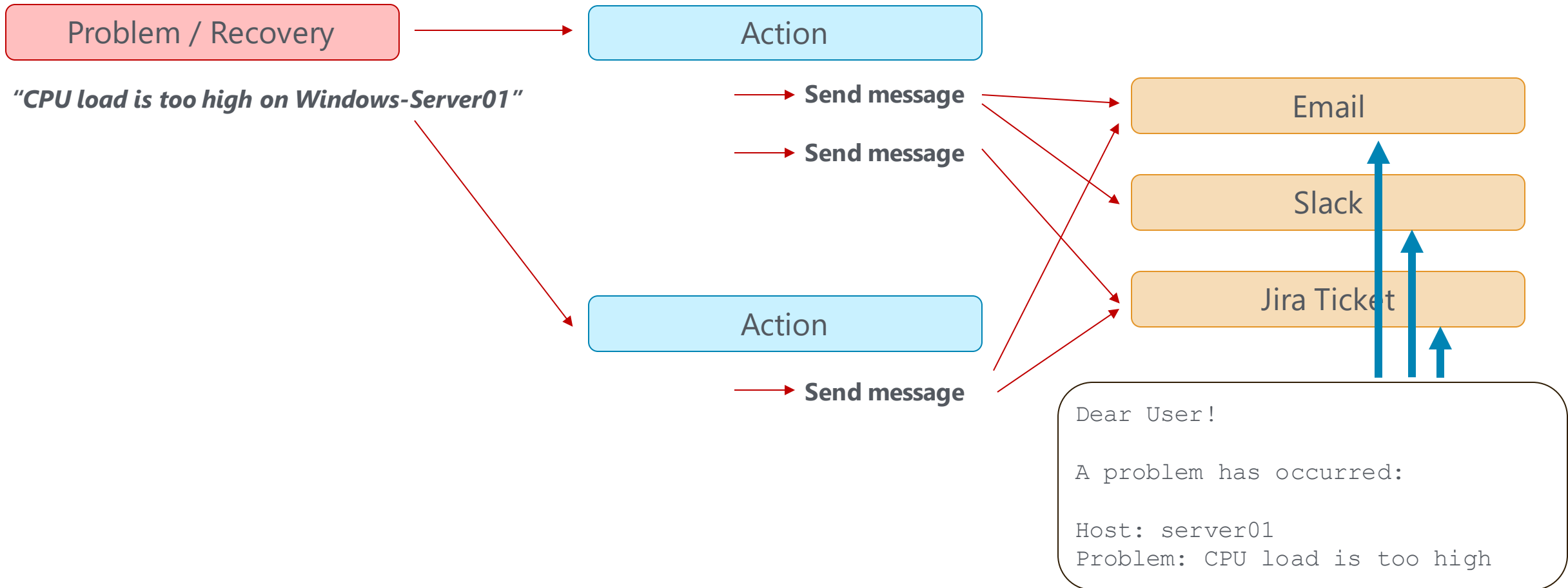
ACTION WORKFLOW

HOW DO YOU GET YOUR NOTIFICATION?



ACTION WORKFLOW

HOW DO YOU GET YOUR NOTIFICATION?



DEFAULT MESSAGES FOR EACH MEDIA TYPE

- More flexible configuration of complex notification scenarios with less effort
- Manage high amount of actions with a wide variety of media types
- Transferable between Zabbix installations (NEW: **import/export** media types!!!)

The screenshot displays the Zabbix web interface for configuring media types. The main content area is titled 'Media types' and has three tabs: 'Media type', 'Message templates' (highlighted in yellow), and 'Options'. The 'Message templates' tab shows the configuration for an 'Email' media type. The fields are as follows:

- * Name: Email
- Type: Email
- * SMTP server: 127.0.0.1
- SMTP server port: 25
- * SMTP helo: demo.zabbix.lan
- * SMTP email: demo-zabbix@zabbix.lan

On the left, the 'Actions' configuration page is partially visible, showing fields for 'Default operation step duration' (1h), 'Default subject' (Problem: {EVENT.NAME}), and 'Default message' (Problem started at {EVENT.TIME} Problem name: {EVENT.NAME} Host: {HOST.NAME} Severity: {EVENT.SEVERITY} Original problem ID: {EVENT.ID} {TRIGGER.URL}). A sidebar menu is overlaid on the 'Actions' page, showing the following items: Monitoring, Inventory, Reports, Configuration, and Administration (selected).

At the bottom of the 'Actions' page, there is a note: '* At least one operation, recovery operation or update operation must exist.' and buttons for 'Add' and 'Cancel'.

DEFAULT MESSAGES FOR EACH MEDIA TYPE

- Define standard messaging for Media type
- Define standard messaging for every state of a problem
- If needed – **override on Action level**

Media type Message templates Options

Message type	Template	Actions
Problem	Problem started at {EVENT.TIME} on {EVENT.DATE} Pro...	Edit Remove
Problem recovery	Problem has been resolved at {EVENT.RECOVERY.TIME}...	Edit Remove
Problem update	{USER.FULLNAME} {EVENT.UPDATE.ACTION} problem ...	Edit Remove
Discovery	Discovery rule: {DISCOVERY.RULE.NAME} Device IP: {D...	Edit Remove
Autoregistration	Host name: {HOST.HOST} Host IP: {HOST.IP} Agent port:...	Edit R

[Add](#)

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

Message template ✕

Message type:

Subject:

Message:

[Update](#) [Cancel](#)

03



NODATA TRIGGERS AND PROXY AVAILABILITY

- ⊙ `nodata()` triggers are now, by default, sensitive to proxy availability
- ⊙ Turn off sensitiveness to proxy availability with new parameter `nodata(5m,strict)`
- ⊙ Avoid massive event storms and other issues because of single proxy

NODATA TRIGGERS AND PROXY AVAILABILITY BACKGROUND

[ZBXNEXT-1891](#) – Implicit trigger dependency when monitored via proxy (2003)

- `nodata()` trigger function – Checking for no data received
- If host is monitored by proxy, but proxy can't report data to server = no data
- Event and alert storms, other performance issues
- `nodata()` triggers are used in official Zabbix agent templates
- cheap in calculation

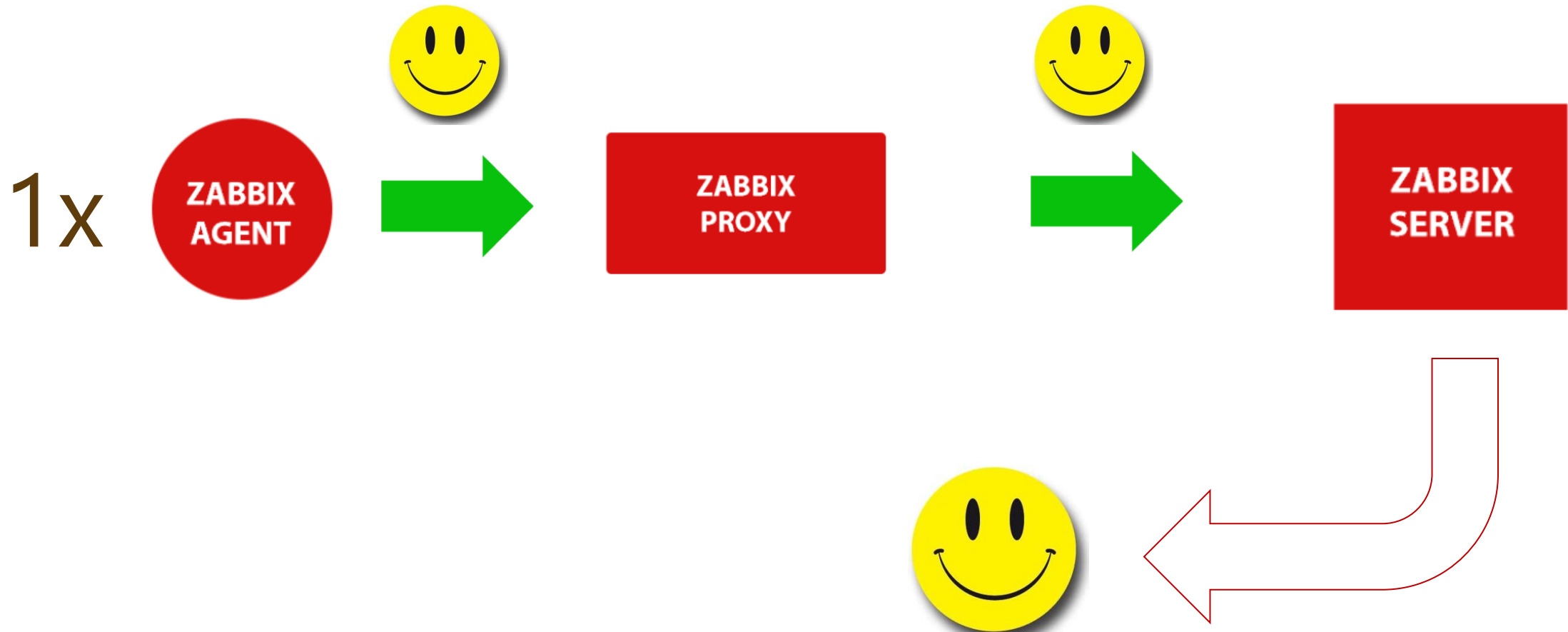
High

OK

Template App Zabbix Agent - active agent: Zabbix agent on is unreachable for 5 minutes

`{phineas:agent.ping.nodata(5m)}=1`

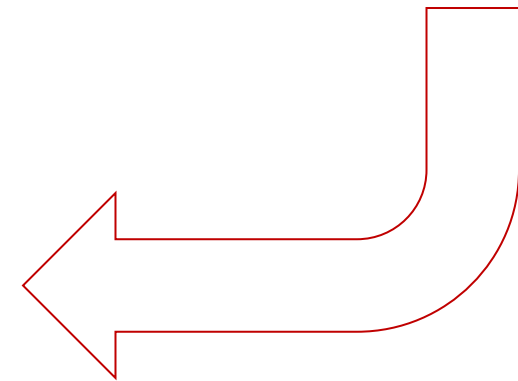
NODATA TRIGGERS LET'S VISUALIZE



NODATA TRIGGERS LET'S VISUALIZE



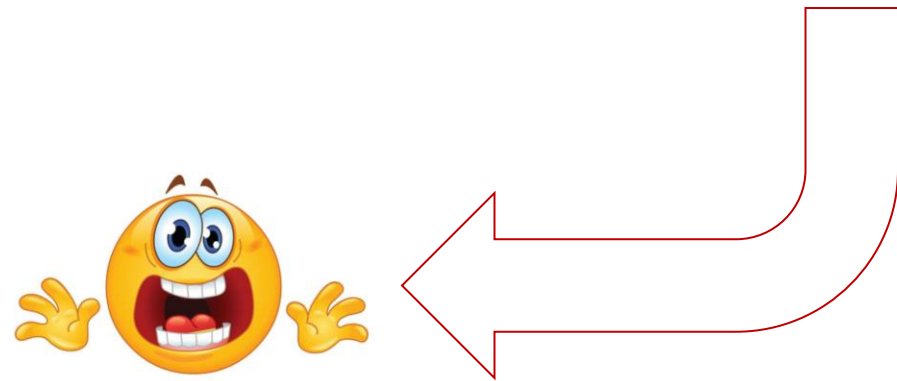
Proxy is down
+
1x nodata problem



NODATA TRIGGERS LET'S VISUALIZE



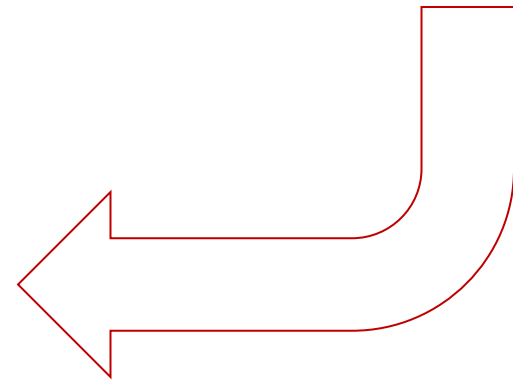
Proxy is down
+
5000x nodata problems



NODATA TRIGGERS LET'S VISUALIZE – 5.0



1x Problem
Proxy is down



NODATA TRIGGERS

FINAL NOTES

- Much easier than setting up global event correlation and Trigger dependencies
- Out of the box functionality, just works as expected without any further setup
- What if I **don't** want to respect proxy availability? `nodata(5, strict)` !

04

LLD OVERRIDES

- ⦿ Exception handling for specific Item and Trigger prototypes in LLD rules

LLD OVERRIDES

AND HOW THEY DIFFER FROM LLD FILTERS

LLD filters define whether an **entity** is being discovered or not

- Example: do not discover file systems with type «swap» or «proc»

LLD overrides define exceptions for **specific prototypes** based on content of LLD macros

- Example: set a different severity for a trigger on a root file system
- Example: do not add Trigger/Item for the entity in certain circumstances
- Example: set specific update interval / storage period for item

LLD OVERRIDES USE CASE: ONE FILE SYSTEM LLD FOR BOTH WINDOWS AND LINUX

Problem:

- Windows does NOT support Inode monitoring: `vfs.fs.inode (fsname, <mode>)`

Solution:

Override

* Name

Stop processing next overrides if matches

Filters

Type of calculation

Label Macro

A Regular expression

[Add](#)

Operations

Condition

Item prototype contains *inode* [Edit](#) [Remove](#)

Trigger prototype contains *inode* [Edit](#) [Remove](#)

[Add](#)

Edit operation

Object

Condition

Create enabled Original

Discover

Update interval Original

History storage period Original

Trend storage period Original

05



TEST ITEM FROM USER INTERFACE

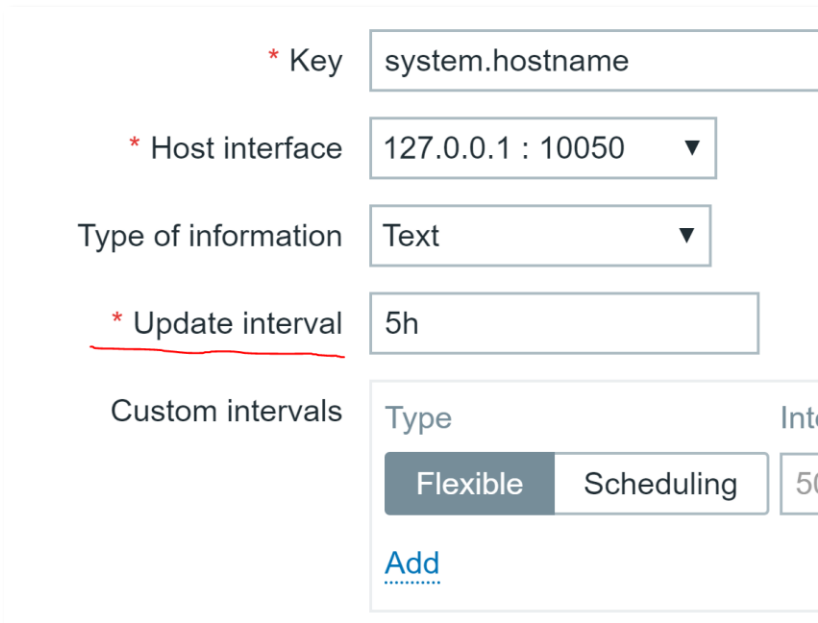
- ⦿ In previous versions it was difficult to tell if a newly-configured item was configured correctly or not.
- ⦿ Now it is possible to test item from UI even before saving it, and get a real value in return.
- ⦿ And even test all pre-processing steps

TEST ITEM

WHAT WE DID BEFORE?

- Simply wait for next update interval cycle
- `zabbix_agentd -t < item_key >`
- `zabbix_get -s <host> -k <key>`
- In Zabbix 4.0, «Check now» aka «Execute Now» has been added for passive items

```
[root@meetup tmp]# zabbix_get -s 127.0.0.1 -k system.hostname
meetup
[root@meetup tmp]#
[root@meetup tmp]#
[root@meetup tmp]# zabbix_agentd -t system.hostname
system.hostname [s|meetup]
[root@meetup tmp]#
```



* Key: system.hostname

* Host interface: 127.0.0.1 : 10050

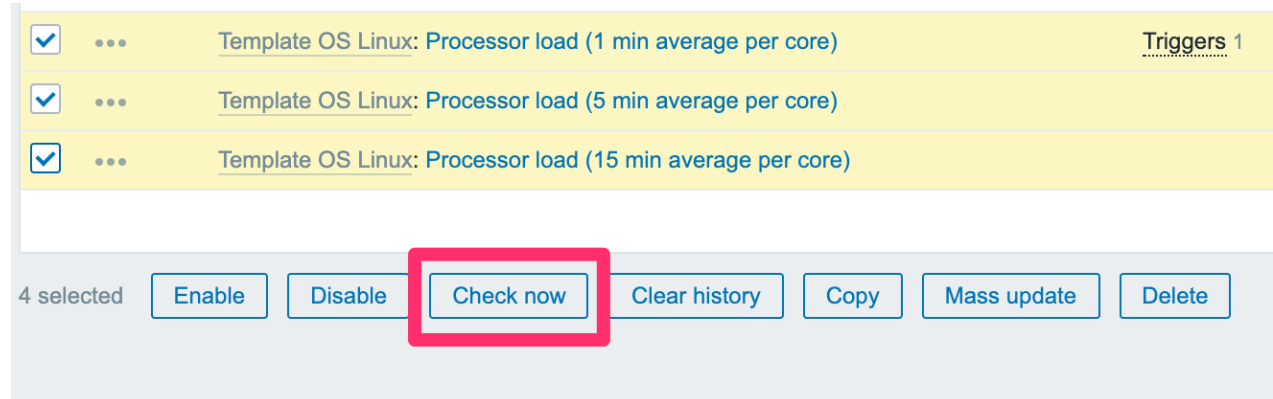
Type of information: Text

* Update interval: 5h

Custom intervals

Type	Int
Flexible	Scheduling

[Add](#)



<input checked="" type="checkbox"/>	...	Template OS Linux: Processor load (1 min average per core)	Triggers 1
<input checked="" type="checkbox"/>	...	Template OS Linux: Processor load (5 min average per core)	
<input checked="" type="checkbox"/>	...	Template OS Linux: Processor load (15 min average per core)	

4 selected

[Enable](#) [Disable](#) [Check now](#) [Clear history](#) [Copy](#) [Mass update](#) [Delete](#)

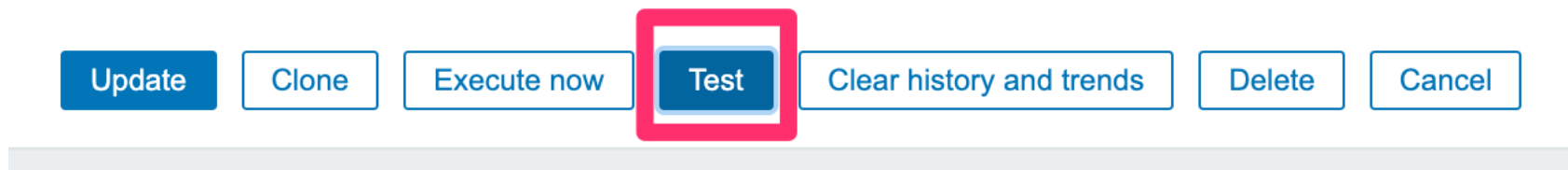
TEST ITEM PROBLEMS

- Waiting is not an option!
- «Check Now» is only available on host level (not templates)
- «Check Now» is executed by the server (Configuration cache, ...)
- Zabbix_agentd and zabbix-get don't respect pre-processing
- Dependent Items...?

TEST ITEM

5.0

- Works on **host** and **template** level (by entering a valid IP and port to connect to for testing)
- Can be used **before** an item is actually saved in configuration
- Gives **instant** feedback
- Runs through and visualizes the whole **preprocessing** chain and outputs of all steps
- Can test items located on hosts behind **Proxy**
- Also works for **calculated** and **aggregated** items
- Allows substitution of **macro values** (NEW: secret macros)



TEST ITEM

5.0

Test item ✕

Get value from host

Host address Port

Proxy

Value

Time

Previous value Prev. time

End of line sequence LF CRLF

Preprocessing steps

Name	Result
1: Regular expression	demo2
2: Replace	Zabbix meetup 5.0
3: Left trim	5.0
4: Custom multiplier	10
5: In range	10

Result 10

06



SNMP CREDENTIALS AT HOST INTERFACE LEVEL

- ⊙ SNMP connection related settings where they should be
- ⊙ Simplify configuration: make templates unique and transportable
- ⊙ SNMPv1, SNMPv2, SNMPv3 => SNMP Agent

SNMP CREDENTIALS AT HOST INTERFACE LEVEL

- Complexity of authentication parameters
- Simple human mistakes – typos
- In case of many items, chance to make mistake increases
- One mistake in Item prototype can affect whole host

* Name

Type

* Key

* SNMP OID

Context name

Security name

Security level

Authentication protocol

Authentication passphrase

Items

All templates / Cisco 2620 SNMPv3 Applications Items 10 Triggers 3 Graphs 2 Screens Discovery rules

Item Preprocessing

* Name

Type

* Key

* SNMP OID

Context name

Security name

Security level

Authentication protocol

Authentication passphrase

Privacy protocol

Privacy passphrase

Port

Type of information

* Update interval

SNMP CREDENTIALS

AT HOST INTERFACE LEVEL

- Instead of suggesting to «be careful!» minimize possibilities to make mistake
- snmpv1, snmpv2, snmpv3 replaced with SNMP Agent
- All configuration is done on interface level
- All items inherit settings from chosen interface

* Interfaces	Type	IP address	DNS name	Connect to	Port	Default
^	SNMP	<input type="text" value="10.100.0.42"/>	<input type="text" value="net.cisco.c7600"/>	<input checked="" type="radio"/> IP <input type="radio"/> DNS	<input type="text" value="161"/>	<input checked="" type="radio"/> Remove
	* SNMP version	<input type="text" value="SNMPv2"/>				
	* SNMP community	<input "{\$snmp_community}"}<="" td="" type="text" value=""/>				
		<input checked="" type="checkbox"/> Use bulk requests				
	Add					



THANK
YOU!