

EPAM Systems, RD Dep., RD Dep.

MTN.NIX.05.Zabbix.Items

REVISION HISTORY					
Ver.	Description of Change	Author	Date	Approved	
				Name	Effective Date
1.0	Initial Version	Siarhei Beliakou	23/May/2017		

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Task. Items

Task:

Assuming we have 2 servers (VMs) – ZabbixServer and Tomcat, Configure:

- Simple checks:
 - Zabbix Server WEB availability (80)
 - Zabbix DB is available (3306)
 - Tomcat availability (80, 8080)
 - Tomcat Server is available by ssh (22)
- Calculated Checks:
 - CPU Load per Core (1, 5, 15min)
- Internal Checks:
 - How many items are enabled
 - How many Servers are being monitored

Create triggers for every check

And logs monitoring.

I sent also scripts and Vagrantfile, because I added setting up /etc/zabbix/web/zabbix.conf.php for configuration of UI via script.

Log monitoring.

The image shows two screenshots of the Zabbix web interface. The top screenshot displays the 'Zabbix raw items' table, listing items like 'Zabbix_agent_API' and 'Tomcat_logs' with their respective configurations and status. The bottom screenshot shows the 'Triggers' configuration page, where a new trigger is being created. The trigger name is 'Smb startup my tomcat?', and the expression is '{Zabbix_agent_API:log[/opt/tomcat/logs/catalina.out,startup].str(startup)}=1'. The severity is set to 'High'.

Item	Check	Period	Unit	Status	Last check	Last value	History
Zabbix_agent_API	Check_log	1s	90d	Zabbix agent (active)	2019-10-22 01:15:41	1987.20191021.221541.191 agent #2 st...	History
Tomcat_logs	log[/opt/tomcat/logs/catalina.out,startup]	1s	90d	Zabbix agent (active)	2019-10-22 01:20:26	21-Oct-2019 22:15:45.020 INFO [main] or...	History

Timestamp Local time Value

Timestamp	Local time	Value
2019-10-22 01:20:26	21-Oct-2019 22:15:45.020	INFO [main] org.apache.catalina.startup.Catalina.start Server startup in 617 ms
2019-10-22 01:20:26	21-Oct-2019 22:15:45.017	INFO [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["ajp-nio-8009"]
2019-10-22 01:20:25	21-Oct-2019 22:15:45.010	INFO [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["http-nio-8080"]
2019-10-22 01:20:25	21-Oct-2019 22:15:45.004	INFO [localhost-startStop-1] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web application directory [/opt/tomcat/webapps/manager] has finished in [17] ms
2019-10-22 01:20:25	21-Oct-2019 22:15:45.000	INFO [localhost-startStop-1] org.apache.catalina.startup.Catalina.start Server startup in 617 ms

Triggers

All hosts / Zabbix_agent_API Enabled ZBX SNMP JMX IPMI Applications 16 Items 76 Triggers 29 Graphs 15 Discovery rules 3 Web s...

Trigger Tags Dependencies

Name Smb startup my tomcat?

Operational data

Severity Not classified Information Warning Average High Disaster

Expression {Zabbix_agent_API:log[/opt/tomcat/logs/catalina.out,startup].str(startup)}=1

Expression constructor

OK event generation Expression Recovery expression None

DR/DR1 FM event generation mode Simple Multiline

Zabbix_server: Problems - Mozilla Firefox (Private Browsing)

192.168.56.106/zabbix.php?action=problem.view&addreset=1

ZABBIX Monitoring Inventory Reports Configuration Administration

Dashboard Problems Overview Web Latest data Graphs Screens Maps Discovery Services

Problems

Export to CSV

Filter

Show: Recent problems Problems History

Host groups: type here to search Select

Hosts: type here to search Select

Application: type here to search Select

Triggers: type here to search Select

Problem: type here to search

Minimum severity: Not classified

Age less than: 14 days

Host inventory: Type Add Remove

Tags: And/Or Or tag Contains Equals value Add Remove

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

Show suppressed problems: ☐

Show unacknowledged only: ☐

Compact view: ☐

Show details: ☐

Show timeline: ☒

Highlight whole row: ☐

Apply Reset

Time	Severity	Info	Host	Problem	Duration	Ack	Actions	Tags
01:26:33	High		Zabbix_agent API	Smb startup my tomcat?	21s	No		

Displaying 1 of 1 found

Zabbix DB is available on 3306 http port.

Zabbix_server: Configuration - Mozilla Firefox (Private Browsing)

192.168.56.106/items.php?form=update&hostid=10084&itemid=30276

ZABBIX Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery Services

Items

All hosts / Zabbix server Enabled 254 SNMP traps (PM) Applications 17 Items 122 Triggers 63 Graphs 21 Discovery rules 3 Web scenarios

Item Preprocessing

Name: MariaDB isn't ok

Type: Simple check

Key: net.tcp.service[http.127.0.0.1.3306] Select

Host interface: 127.0.0.1:10050

User name:

Password:

Type of information: Numeric (unsigned)

Units:

Update interval: 1s

Custom intervals:

Type	Interval	Period	Action
Flexible	Scheduling	50s	1-7:00:00-24:00

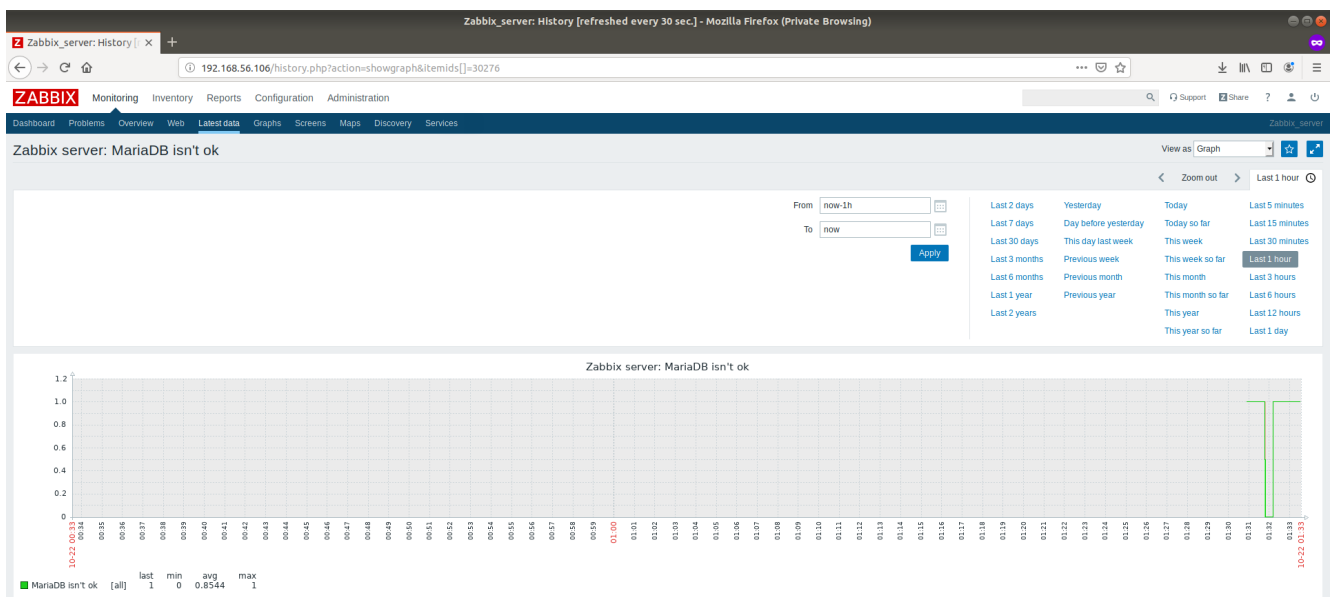
Add Remove

History storage period: Do not keep history Storage period: 90d

Trend storage period: Do not keep trends Storage period: 365d

Show value: As is show value mappings

New application:



Zabbix_server: Configuration

Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery Services

Triggers

All hosts / Zabbix server Enabled **ZBX** [SNMP] [JMX] [IPMI] Applications 17 Items 122 Triggers 64 Graphs 21 Discovery rules 3 Webhooks 1

Trigger Tags Dependencies

Name: Maria need help!

Operational data

Severity: Not classified Information Warning Average High **Disaster**

Expression: [Zabbix_server:net.tcp.service[http,127.0.0.1,3306].diff()]=1 Add

Expression constructor

OK event generation: Expression Recovery expression None

PROBLEM event generation mode: Single Multiple

OK event closes: All problems All problems if tag values match

Zabbix_server: Problems

Export to CSV

Zoom out Last 1 hour Filter

Show: Recent problems Problems History

Host groups: type here to search Select

Hosts: type here to search Select

Application: Select

Triggers: type here to search Select

Problem: Select

Minimum severity: Not classified

Host inventory: Type Add Remove

Tags: And/Or Or tag Contains Equals value Add Remove

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

Show suppressed problems: Show unacknowledged only

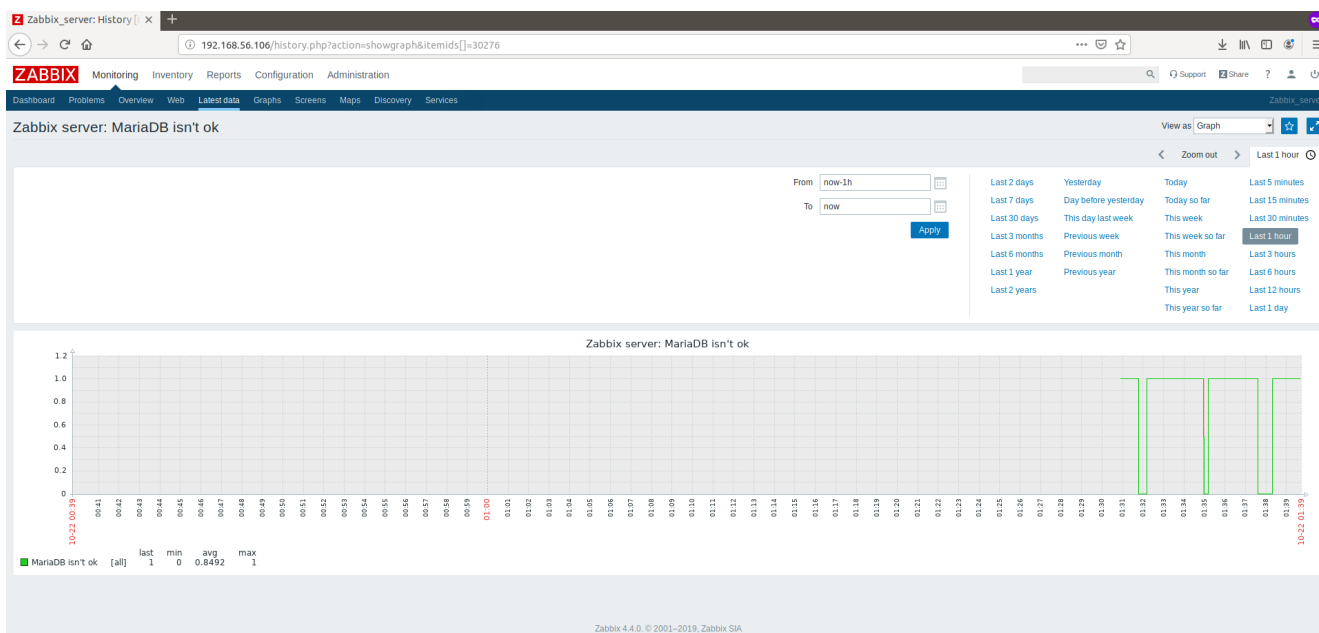
Compact view: Show timeline

Show details: Highlight whole row

Apply Reset

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
01:38:23	Disaster	01:38:24	RESOLVED		Zabbix server	Maria need help!	1s	No		
01:37:40	Disaster	01:37:41	RESOLVED		Zabbix server	Maria need help!	1s	No		
01:35:03	Disaster	01:35:16	RESOLVED		Zabbix server	Maria need help!	13s	No		
01:26:33	High		PROBLEM		Zabbix_agent_API	Smb startup: my tomcat?	12m 27s	No		
01:00										
00:52:51	Warning	01:15:03	RESOLVED		Zabbix_agent_API	Zabbix_agent_API has been restarted (uptime < 10m)	22m 12s	No		

Discovered 5 of 6 found



CPU Load per Core (1min,5min,15min)

192.168.56.106/items.php?form=update&itemid=30277

ZABBIX

MonitoringInventoryReportsConfigurationAdministration

Host groupsTemplatesHostsMaintenanceActionsEvent correlationDiscoveryServices

Items

All hosts / Zabbix serverEnabledZBXSNMPJMXIPMIApplications 17Items 125Triggers 64Graphs 21Discovery rules 3Web site

ItemPreprocessing

* NameCPU_Load_per_Core_1min

TypeCalculated

* Keylastkey

* Formulalast("system.cpu.load[all,avg1"])/last("system.cpu.num")

Type of informationNumeric (float)

Units

* Update interval1s

Custom intervals

TypeFlexibleScheduling

Interval50s

Period1-7:00:00-24:00

ActionRemove

Add

192.168.56.106/items.php?form=update&itemid=30278

ZABBIX

MonitoringInventoryReportsConfigurationAdministration

Host groupsTemplatesHostsMaintenanceActionsEvent correlationDiscoveryServices

Items

All hosts / Zabbix serverEnabledZBXSNMPJMXIPMIApplications 17Items 125Triggers 64Graphs 21Discovery rules 3Web site

ItemPreprocessing

* NameCPU_Load_per_Core_5min

TypeCalculated

* Keylastkey5

* Formulalast("system.cpu.load[all,avg5"])/last("system.cpu.num")

Type of informationNumeric (float)

Units

* Update interval1s

Custom intervals

TypeFlexibleScheduling

Interval50s

Period1-7:00:00-24:00

ActionRemove

Add

192.168.56.106/items.php?form=update&itemid=30279

ZABBIX

MonitoringInventoryReportsConfigurationAdministration

Host groupsTemplatesHostsMaintenanceActionsEvent correlationDiscoveryServices

Items

All hosts / Zabbix serverEnabledZBXSNMPJMXIPMIApplications 17Items 125Triggers 64Graphs 21Discovery rules 3Web site

ItemPreprocessing

* NameCPU_Load_per_Core_15min

TypeCalculated

* Keylastkey15

* Formulalast("system.cpu.load[all,avg15"])/last("system.cpu.num")

Type of informationNumeric (float)

Units

* Update interval1s

Custom intervals

TypeFlexibleScheduling

Interval50s

Period1-7:00:00-24:00

ActionRemove

Add

Zabbix server		- other - (5 items)							
<input type="checkbox"/>	CPU_Load_per_Core_1min	lastkey	1s	90d	365d	Calculated	2019-10-22 02:01:12	1.655	Graph
<input type="checkbox"/>	CPU_Load_per_Core_5min	lastkey5	1s	90d	365d	Calculated	2019-10-22 02:01:12	0.32	Graph
<input type="checkbox"/>	CPU_Load_per_Core_15min	lastkey15	1s	90d	365d	Calculated	2019-10-22 02:01:12	0.18	Graph
<input type="checkbox"/>	MariaDB isn't ok	net.tcp.service[http:127.0.0.1:3306]	1s	90d	365d	Simple check	2019-10-22 02:01:12	1	Graph
<input type="checkbox"/>	Zabbix trapper	bob		90d		Zabbix trapper	2019-10-22 01:06:18	I want to test my trapper	History

192.168.56.106/triggers.php?form=update&triggerid=16634

ZABBIX

MonitoringInventoryReportsConfigurationAdministration

Host groupsTemplatesHostsMaintenanceActionsEvent correlationDiscoveryServices

Triggers

All hosts / Zabbix serverEnabledZBXSNMPJMXIPMIApplications 17Items 127Triggers 67Graphs 21Discovery rules 3

TriggerTagsDependencies

* NameCPU burnout

Operational data

SeverityNot classifiedInformationWarningAverageHighDisaster

* Expression(Zabbix server:last.key.last())>=1

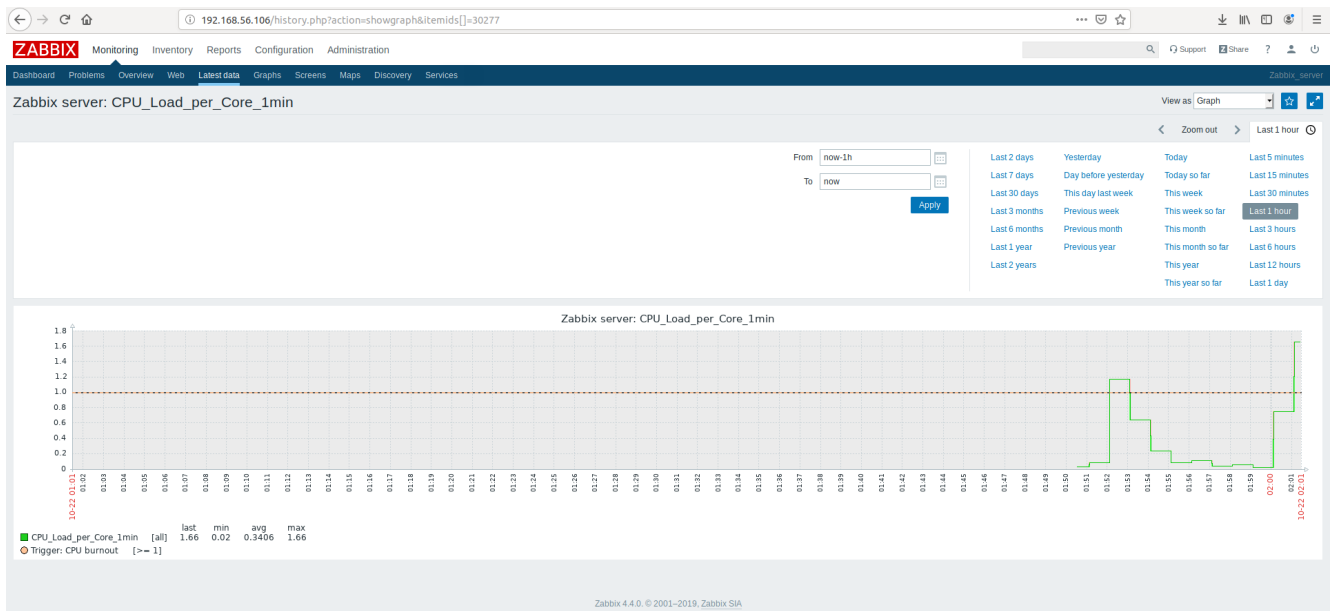
Expression constructor

OK event generationExpressionRecovery expressionNone

PROBLEM event generation modeSingleMultiple

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192.168.56.106/zabbix.php?action=problem.view&ddreset=1

ZABBIX Monitoring Inventory Reports Configuration Administration

Dashboard Problems Overview Web Latest data Graphs Screens Maps Discovery Services

Problems

Export to CSV

Zoom out Last 1 hour Filter

Show Recent problems Problems History

Host groups type here to search Select

Hosts type here to search Select

Application type here to search Select

Triggers type here to search Select

Problem

Minimum severity Not classified

Host inventory Type Remove

Tags AndOr Or

Tag tag Contains Equals value Remove

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

Show suppressed problems Show unacknowledged only

Compact view Show timeline

Show details Highlight whole row

Apply Reset

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
02:01:11	Average		PROBLEM		Zabbix server	CPU burnout	7s	No		
02:00										
01:38:23	Disaster	01:38:24	RESOLVED		Zabbix server	Maria need help!	1s	No		
01:37:40	Disaster	01:37:41	RESOLVED		Zabbix server	Maria need help!	1s	No		
01:35:03	Disaster	01:35:16	RESOLVED		Zabbix server	Maria need help!	13s	No		
01:26:33	High		PROBLEM		Zabbix_agent_API	Smb startup my tomcat?	34m 45s	No		

Internal checks and triggers for them.

<input type="checkbox"/>	Name ▲	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy
<input type="checkbox"/>	Zabbix server	Applications 17	Items 126	Triggers 65	Graphs 21	Discovery 3	Web 127.0.0.1: 10050		
<input type="checkbox"/>	Zabbix_agent_API	Applications 16	Items 76	Triggers 30	Graphs 15	Discovery 3	Web 192.168.56.107: 10050		

192.168.56.106/triggers.php?form=update&triggerid=16635

ZABBIX Monitoring Inventory Reports Configuration Administration

Host groups Templates **Hosts** Maintenance Actions Event correlation Discovery Services

Triggers

All hosts / Zabbix server Enabled ZBX SNMP JMX IPMI Applications 17 Items 127 Triggers 66 Graphs 21 Discovery rules 3 Web

Trigger Tags Dependencies

* Name

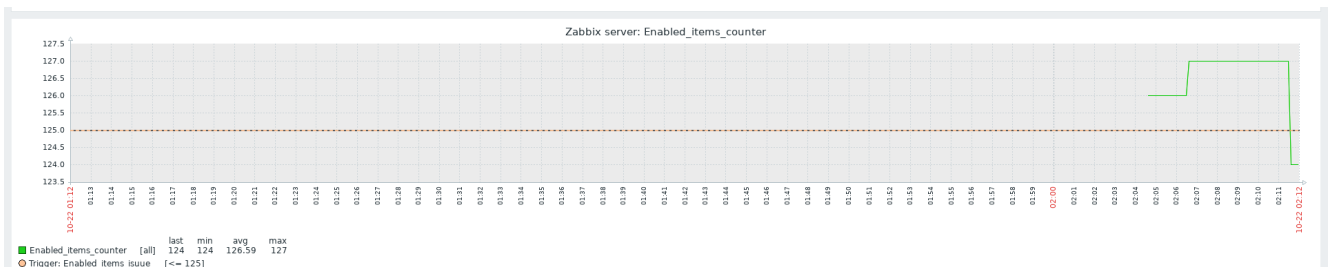
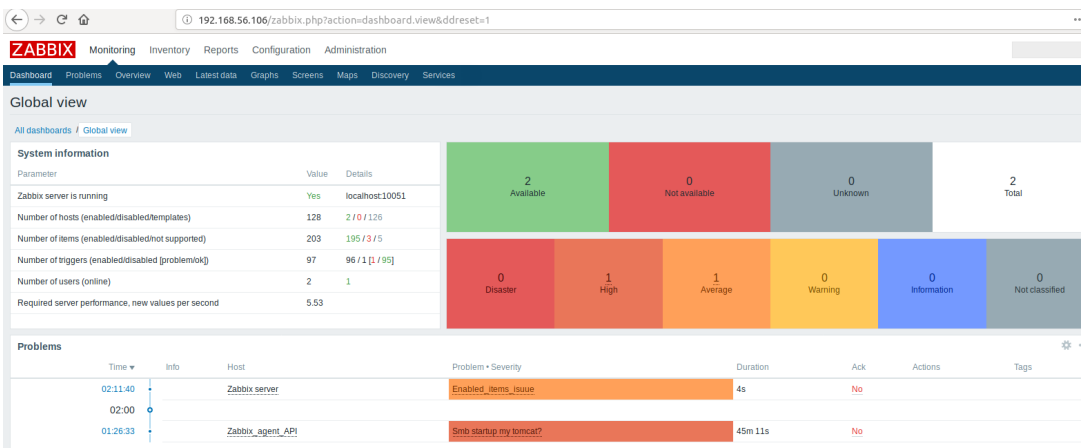
Operational data

Severity Not classified Information Warning **Average** High Disaster

* Expression

[Expression constructor](#)

OK event generation



192.168.56.106/triggers.php?hostid=10084&form=create

ZABBIX Monitoring Inventory Reports Configuration Administration

Host groups Templates **Hosts** Maintenance Actions Event correlation Discovery Services

Triggers

All hosts / Zabbix server Enabled **ZBX** SNMP JMX IPMI Applications 17 Items 127 Triggers 66 Graphs 21 Discovery rules 3 Web scenarios

Trigger Tags Dependencies

* Name

Operational data

Severity ☐ Not classified ☐ Information ☐ Warning ☐ Average ☒ High ☐ Disaster

* Expression

[Expression constructor](#)

OK event generation ☐ Expression ☐ Recovery expression ☐ None

192.168.56.106/zabbix.php?action=dashboard.view&ddreset=1

ZABBIX Monitoring Inventory Reports Configuration Administration

Dashboard Problems Overview Web Latest data Graphs Screens Maps Discovery Services

Global view

All dashboards / Global view

Parameter	Value	Details
Zabbix server is running	Yes	localhost:10051
Number of hosts (enabled/disabled/templates)	128	1 / 1 / 126
Number of items (enabled/disabled/not supported)	203	119 / 79 / 5
Number of triggers (enabled/disabled [problem/ok])	97	66 / 31 [1 / 65]
Number of users (online)	2	1
Required server performance, new values per second	2.74	

1 Available

0 Not available

0 Unknown

0 Disaster

1 High

1 Average

0 Warning

Problems

Time	Info	Host	Problem • Severity	Duration	Ack
02:12:41		Zabbix server	We_lost_server_issue	5s	No
02:11:40		Zabbix server	Enabled items issue	1m 6s	No

