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		

Tasks:

1. Create item and develop custom trigger for log monitoring (you can use httpd or tomcat logs)

Items

All hosts / zabbixclient   Enabled   ZBX SNMP JMX IPMI   Applications 10   Items 49   Triggers 20   Graphs 9   Discovery rules 2   Web scenarios

Item   Preprocessing

* Name	Tomcat Log Error
Type	Zabbix agent (active) ▼
* Key	logrt[/var/log/tomcat/catalina.*,SEVERE|WARNING|INFO] Select
Type of information	Log ▼
* Update interval	10s
* History storage period	Do not keep history Storage period 90d
Log time format	
New application	
Applications	-None- CPU Filesystems General Memory Network interfaces OS Performance Processes Security

Timestamp	Local time	Value
2019-10-21 13:36:12		SEVERE: Cannot start server. Server instance is not configured.
2019-10-21 13:36:12		WARNING: Catalina.start using conf/server.xml: Content is not allowed in prolog.
2019-10-21 13:36:12		SEVERE: Parse Fatal Error at line 2 column 1: Content is not allowed in prolog.
2019-10-21 13:36:12		WARNING: Catalina.start using conf/server.xml: Content is not allowed in prolog.
2019-10-21 13:36:12		SEVERE: Parse Fatal Error at line 2 column 1: Content is not allowed in prolog.
2019-10-21 13:36:12		INFO: Destroying ProtocolHandler ["ajp-bio-8009"]
2019-10-21 13:36:12		INFO: Destroying ProtocolHandler ["http-bio-8080"]

2. Create a trigger for errors in log file monitored by that item

Trigger　　Tags　　Dependencies

* Name	Tomcat logs Serious failures
Severity	Not classified　Information　Warning　Average　**High**　Disaster
* Expression	{zabbixclient:logrt[/var/log/tomcat/catalina.*,SEVERE|WARNING|INFO].str(SEVERE)}=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
Allow manual close	☐

Problems

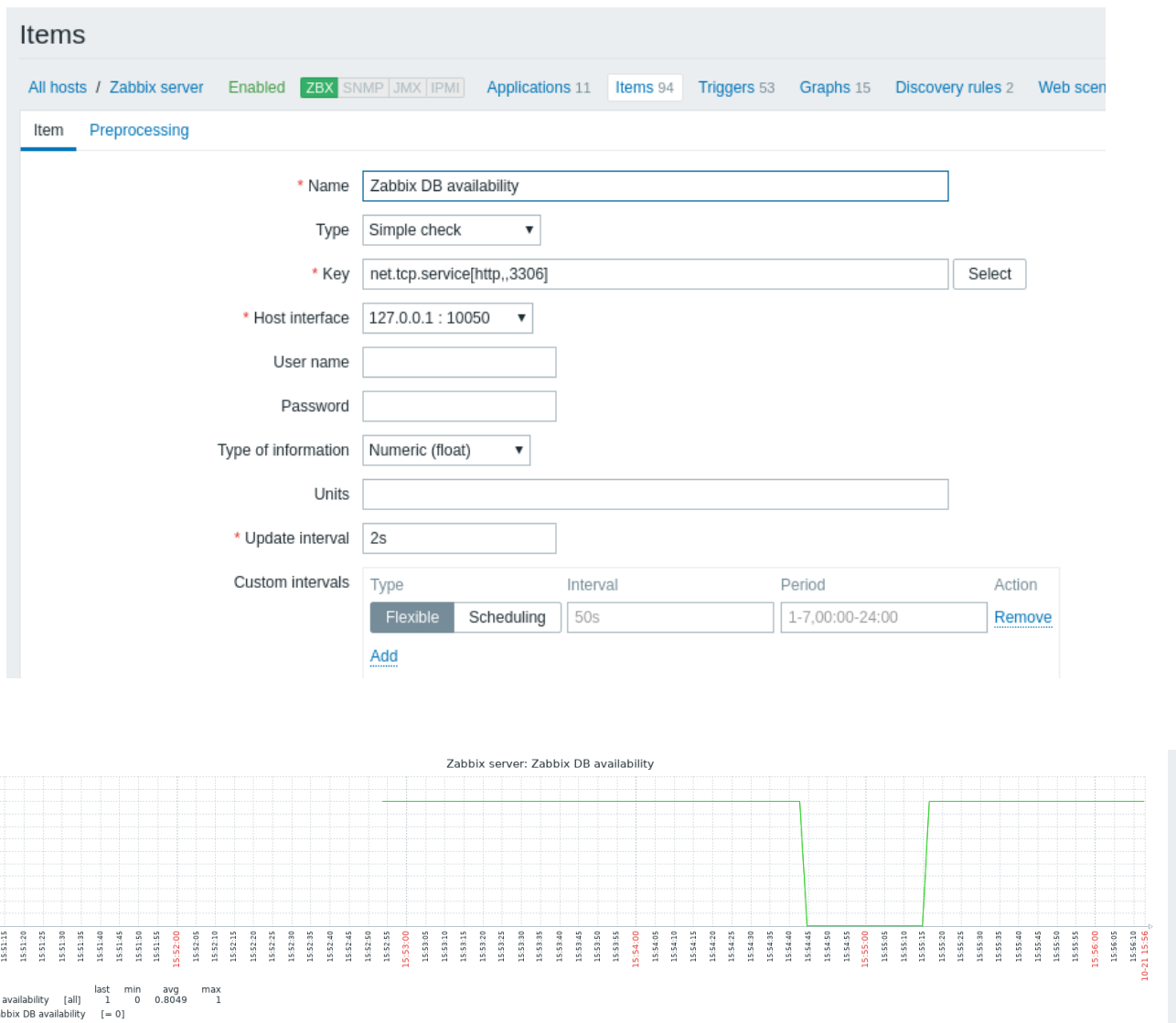| Time ▼	Info	Host	Problem • Severity	Duration	Ack	Actions	Tags
13:28:32		zabbixclient	Tomcat logs Serious failures	20s	No		

Task. Items

Task:

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

1. Simple checks:

   - Zabbix DB is available (3306)

Triggers

Trigger   Tags   Dependencies

* Name	Zabbix DB availability
Severity	Not classified Information Warning Average High **Disaster**
* Expression	{Zabbix server:net.tcp.service[http,,3306].last()}=0 **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
Allow manual close	☐
URL	

Host	Trigger	Severity	Number of status changes
Zabbix server	Zabbix DB availability	Disaster	2

2. Calculated Checks:
   - CPU Load per Core (1, 5, 15min)

   1 min

* Name	cpupercore1
Type	Calculated ▼
* Key	cpupercore1 Select
* Formula	last("system.cpu.load[,avg1]")/last("system.cpu.num")
Type of information	Numeric (float) ▼
Units	
* Update interval	5s

5 min

| Item | Preprocessing |

* Name	cpupercore5
Type	Calculated ▼
* Key	cpupercore5 Select
* Formula	last("system.cpu.load[,avg5]")/last("system.cpu.num")
Type of information	Numeric (float) ▼
Units	
* Update interval	5s

Custom intervals	Type	Interval	Period	Action
	Flexible	Scheduling	50s	1-7,00:00-24:00	Remove
	Add			

15 min

| Item | Preprocessing |

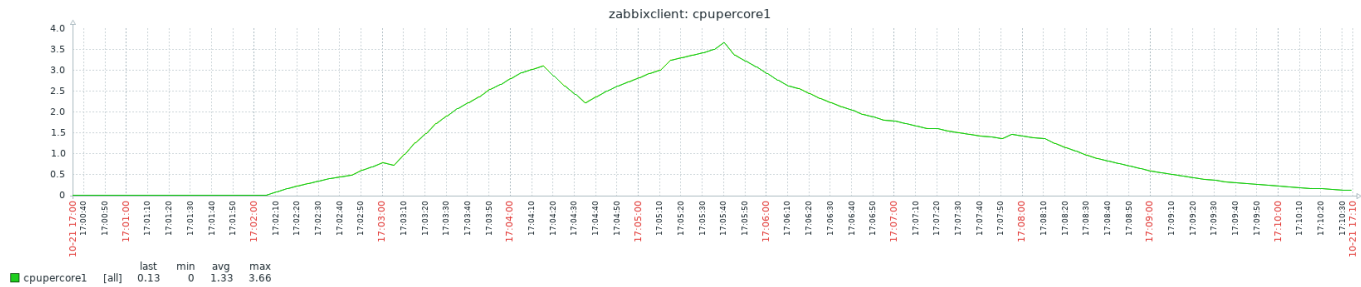|	
* Name	cpupercore15
Type	Calculated ▼
* Key	cpupercore15 Select
* Formula	last("system.cpu.load[,avg15]")/last("system.cpu.num")
Type of information	Numeric (float) ▼
Units	
* Update interval	5s

zabbixclient	- other - (4 items)				
	cpupercore1	2019-10-21 17:04:41	2.365	+0.14	Graph
	cpupercore5	2019-10-21 17:04:42	1.075	+0.05	Graph
	cpupercore15	2019-10-21 17:04:42	0.425	+0.02	Graph
	Tomcat Log	2019-10-21 15:29:33	INFO: Server startup in 234327 ms		History

zabbixclient: cpupercore1

		last	min	avg	max
cpupercore1	[all]	0.13	0	1.33	3.66

zabbixclient: cpupercore5

		last	min	avg	max
cpupercore5	[all]	0.795	0.01	0.9751	1.63

zabbixclient: cpupercore15

		last	min	avg	max
cpupercore15	[all]	0.565	0.385	0.6295	0.72

Graph

zabbixclient: cpupercore1   zabbixclient: cpupercore15   zabbixclient: cpupercore5
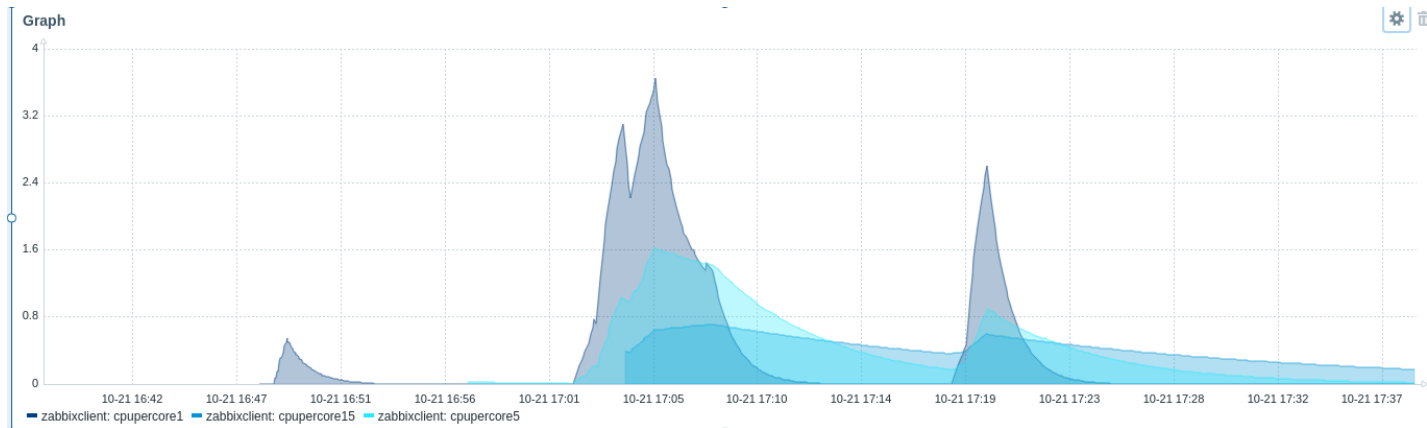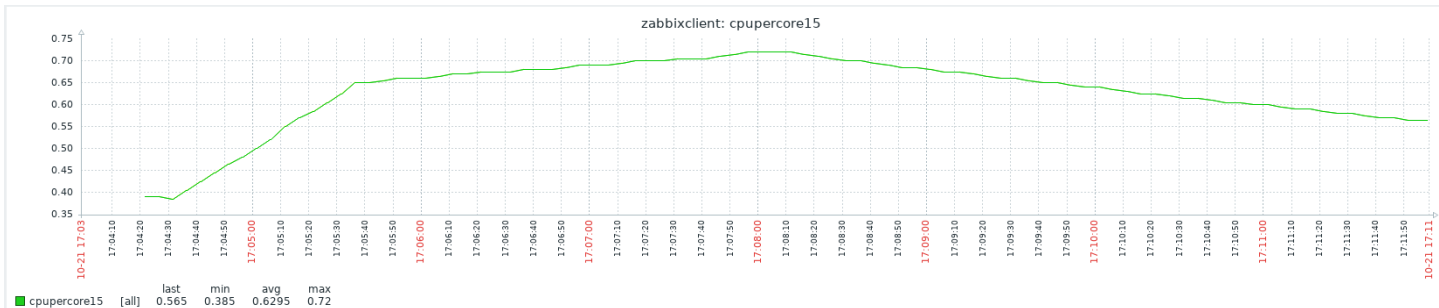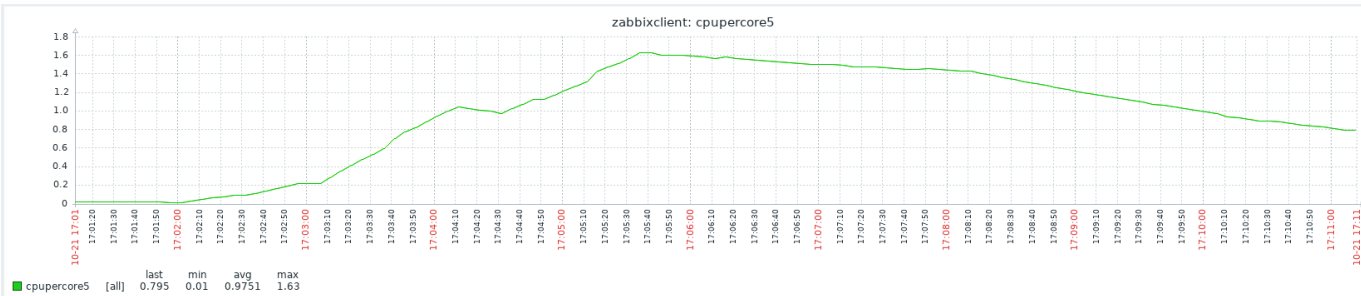
	Severity ▾	Value	Name	Expression	Status	Info	Tags
☐	High	PROBLEM	High Cpu Load avg1	{zabbixclient:cpupercore1.last()}>0.5	Enabled		
☐	High	PROBLEM	High Cpu Load avg15	{zabbixclient:cpupercore15.last()}>0.5	Enabled		
☐	High	PROBLEM	High Cpu Load avg5	{zabbixclient:cpupercore5.last()}>0.5	Enabled		

Displaying 3 of 3 found

0 selected   Enable   Disable   Copy   Mass update   Delete

Problems ...

Time ▾	Info	Host	Problem • Severity	Duration	Ack	Actions	Tags
17:19:42	•	zabbixclient	High Cpu Load avg15	6s	No		
17:19:42	•	zabbixclient	High Cpu Load avg5	6s	No		
17:19:21	•	zabbixclient	High Cpu Load avg1	27s	No		

3. Internal Checks:
   • How many items are enabled

Item   Preprocessing

* Name	items enabled
Type	Zabbix internal ▼
* Key	zabbix[host,,items] Select
Type of information	Numeric (unsigned) ▼
Units	
* Update interval	15s

Custom intervals

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

Add

▼   Zabbix server   - other - (2 Items)

☐	items enabled	2019-10-21 17:42:13	95	Graph
☐	Zabbix DB availability	2019-10-21 17:42:13	1	Graph

0 selected   Display stacked graph   Display graph

Trigger   Tags   Dependencies

* Name	An item has been disabled
Severity	Not classified Information **Warning** Average High Disaster
* Expression	{Zabbix server:zabbix[host,,items].last()}<95 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
Allow manual close	☐

▼   Zabbix server   - other - (1 Item)

☐	items enabled	2019-10-21 17:46:28	94	Graph

Time ▼		Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
17:45:28	☐	Warning		PROBLEM		Zabbix server	An item has been disabled	46s	No		

- How many Servers are being monitored

Item Preprocessing

* Name   Number of monitored servers

Type   Zabbix internal ▼

* Key   zabbix[hosts]   Select

Type of information   Numeric (unsigned) ▼

Units

* Update interval   15s

Custom intervals

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

Add

* 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

Applications

-None-
CPU
Filesystems
General
Memory
Network interfaces
OS
Performance
Processes
Security

▼	Zabbix server	- other - (3 Items)			
☐		items enabled	2019-10-21 17:52:28	95	Graph
☐		Number of monitored servers	2019-10-21 17:52:29	2	Graph
☐		Zabbix DB availability	2019-10-21 17:52:37	1	Graph

0 selected   Display stacked graph   Display graph

Triggers

Trigger   Tags   Dependencies

* Name	A host is unavailable
Severity	Not classified Information Warning Average **High** Disaster
* Expression	{Zabbix server:zabbix[hosts].last()}<2 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	- other - (3 Items)					
	☐	items enabled	2019-10-21 17:58:43	96			Graph
	☐	Number of monitored servers	2019-10-21 17:58:44	1		-1	Graph
	☐	Zabbix DB availability	2019-10-21 17:58:57	1			Graph

Time ▼	☐	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
17:58:44	☐	High				Zabbix server	A host is unavailable	19s	No		
											Displaying 1 of 1 found

0 selected   Mass update

Create triggers for every check