

Task. Web Monitoring with Zabbix

Testing Infrastructure:

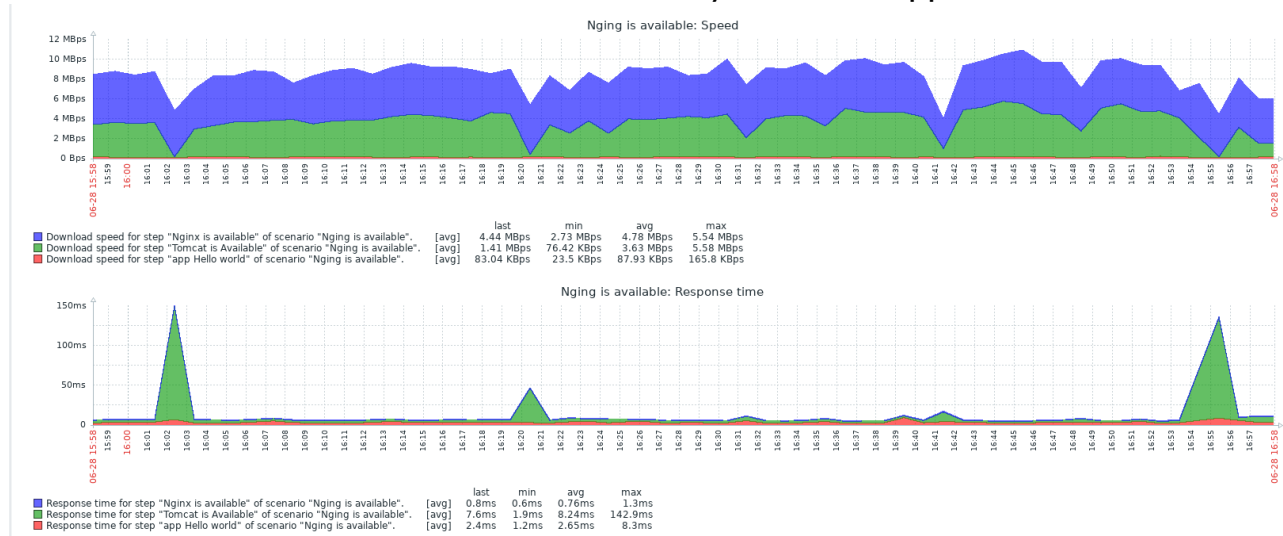
Vagrantfile to spin up 2 VMs (virtualbox):

- zabbix server, provisioned by Vagrant provisioner
- Zabbix agents on both VMs, provisioned by Vagrant provisioner
- Install Tomcat 7 on 2nd VM, deploy any “hello world” application

Tasks:

1. Configure WEB check:

- Scenario to test Tomcat availability as well as Application health



2. Configure Triggers to alert once WEB resources become unavailable

Step	Speed	Response time	Response code	Status
Nginx is available	5.04 MBps	0.7ms	200	OK
Tomcat is available	89.58 Kbps	123.3ms	200	OK
app hello world	420.57 Kbps	2.5ms	404	Error: response code "404" did not match any of the required status codes "200"
TOTAL		126.5ms		Error: response code "404" did not match any of the required status codes "200"

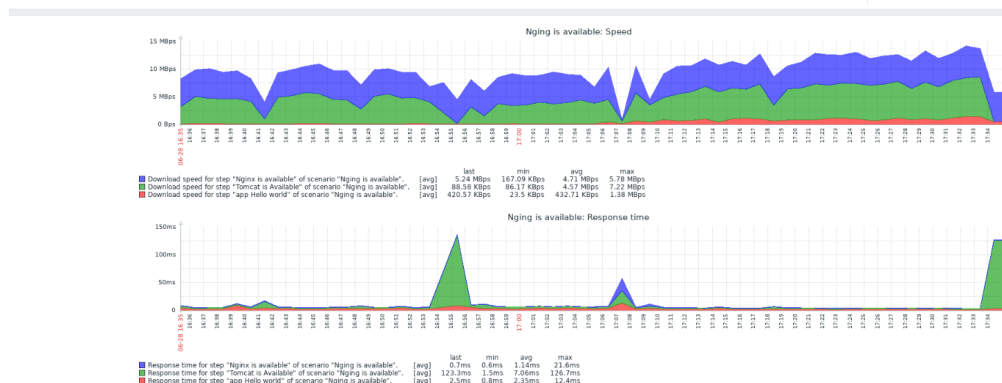
From: now-2h

To: now

Apply

Last 2 days
Last 7 days
Last 30 days
Last 3 months
Last 6 months
Last 1 year
Last 2 years

Yesterday
Day before yesterday
This day last week
Previous week
Previous month
Previous year



Task. Java Monitoring with Java

Task:

You should install and configure Zabbix server and agents.

Testing Infrastructure:

Vagrantfile to spin up 2 VMs (virtualbox):

- zabbix server, provisioned by Vagrant provisioner
- Zabbix agents on both VMs, provisioned by Vagrant provisioner
- Install Tomcat 7 on 2nd VM

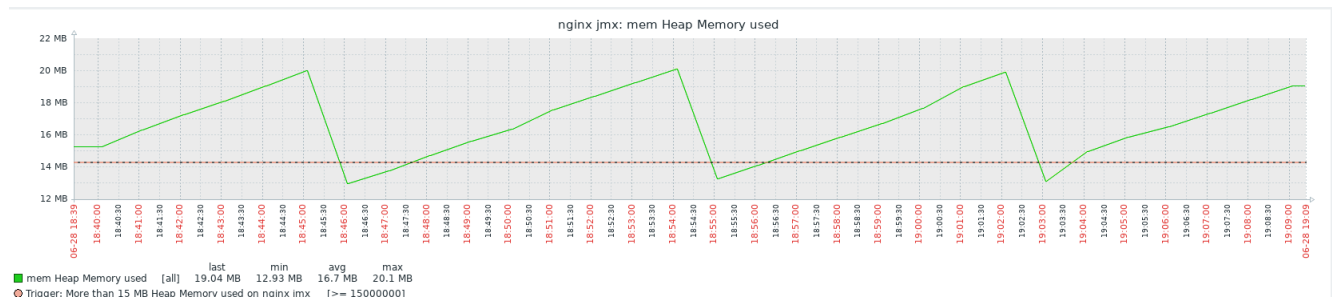
Tasks:

Configure Zabbix to examine Java parameters via Java Gateway
(<http://jmxmonitor.sourceforge.net/jmx.html>)

The screenshot shows the Zabbix Hosts configuration page for a host named 'jmx'. The 'Name' field is filled with 'jmx'. The 'Monitored by' dropdown is set to 'Any'. The 'Proxy' dropdown is set to 'Server'. The 'Tags' section shows 'And/Or' and 'Or' options, with a 'tag' field and 'Contains', 'Equals', and 'value' dropdowns. The 'Apply' and 'Reset' buttons are at the bottom. Below the form, a table lists the host's details: Name (jmx), Applications (Applications 8), Items (Items 55), Triggers (Triggers 27), Graphs (Graphs 11), Discovery (Discovery), Web (Web), Interface (192.168.219.91:12345), Templates (Template App Generic Java JMX), Status (Enabled), Availability (ZBX, SNMP, JMX, IPMI), Agent encryption (NONE), Info, and Tags.

Configure triggers to alert once these parameters changed.

The screenshot shows the Zabbix Triggers configuration page for a trigger named 'More than 15 MB Heap Memory used on [HOST.NAME]'. The 'Severity' is set to 'High'. The 'Expression' field contains the Zabbix trigger expression: `(nginx.jmx[jmx{"java.lang.type=Memory".HeapMemoryUsage.used}.last(#5,60)]>=15000000)`. The 'Status' is 'Enabled'.



The screenshot shows the Outlook email interface. The 'Focused' tab is selected, showing an email from 'Shemchenok@tut.by' with the subject 'Problem: More than 15 MB Heap Memory used on nginx.jmx'. The email content includes a problem notification from Zabbix: 'Problem started at 16:06:07 on 2019.06.28'. The problem details are: 'Problem name: More than 15 MB Heap Memory used on nginx.jmx Host: nginx.jmx Severity: High Original problem ID: 547'.

Task. Zabbix API

Task:

You should develop a script (on Python 2.x) which registers given host in Zabbix.

Testing Infrastructure:

Vagrantfile to spin up 2 VMs (virtualbox):

- zabbix server, provisioned by Vagrant provisioner
- Linux VM with zabbix agent, script for registration on zabbix server, all provisioned by Vagrant provisioner

Registering Script requirements:

Written on Python 2.x

Starts at VM startup or on provision phase

Host registered in Zabbix server should have Name = Hostname (not IP)

Host registered in Zabbix server should belong to "CloudHosts" group

Host registered in Zabbix server should be linked with Custom template

This script should create group "CloudHosts" if it doesn't exist

```
nginx2: Running setup.py install for simplejson: started
nginx2: Running setup.py install for simplejson: finished with status 'done'
nginx2: Successfully installed certifi-2019.6.16 chardet-3.0.4 idna-2.8 requests-2.22.0
simplejson-3.16.0 urllib3-1.25.3
nginx2: You are using pip version 8.1.2, however version 19.1.1 is available.
nginx2: You should consider upgrading via the 'pip install --upgrade pip' command.
nginx2: New host nginx2 (192.168.219.92) was successfully registered.
(zabbix) [student@EPBYMINW5961 zabbix1]$
```

The screenshot displays the Zabbix web interface. The top section is titled "Host groups" and includes a search bar with the text "Name". Below the search bar are "Apply" and "Reset" buttons. A table lists the host groups, with "CloudHosts" selected. The table has columns for Name, Hosts, Templates, Members, and Info. The "CloudHosts" group is associated with "Hosts 1", "Templates 1", and "CloudTemplate".

The bottom section is titled "Templates" and includes a search bar with the text "Name". Below the search bar are "Apply" and "Reset" buttons. A table lists the templates, with "CloudTemplate" selected. The table has columns for Name, Applications, Items, Triggers, Graphs, Screens, Discovery, Web, Linked templates, Linked to, and Tags. The "CloudTemplate" is associated with "Applications", "Items", "Triggers", "Graphs", "Screens", "Discovery", "Web", and "nginx2".

Hosts

Group: all

Create host

Import

Filter

Name

2

Monitored by

Any

Server

Proxy

Templates

type here to search

Select

Proxy

Select

DNS

Tags

And/Or

Or

IP

tag

Contains

Equals

value

Remove

Port

Add

Apply

Reset

<input type="checkbox"/>	Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Templates	Status	Availability	Agent encryption	Info	Tags
<input type="checkbox"/>	nginx2	Applications	Items	Triggers	Graphs	Discovery	Web	192.168.219.92: 10050	CloudTemplate	Enabled	ZBX	SNMP JMX IPMI	NONE	