

## --- Day 3 ---

### 01: Zabbix Items

Task:

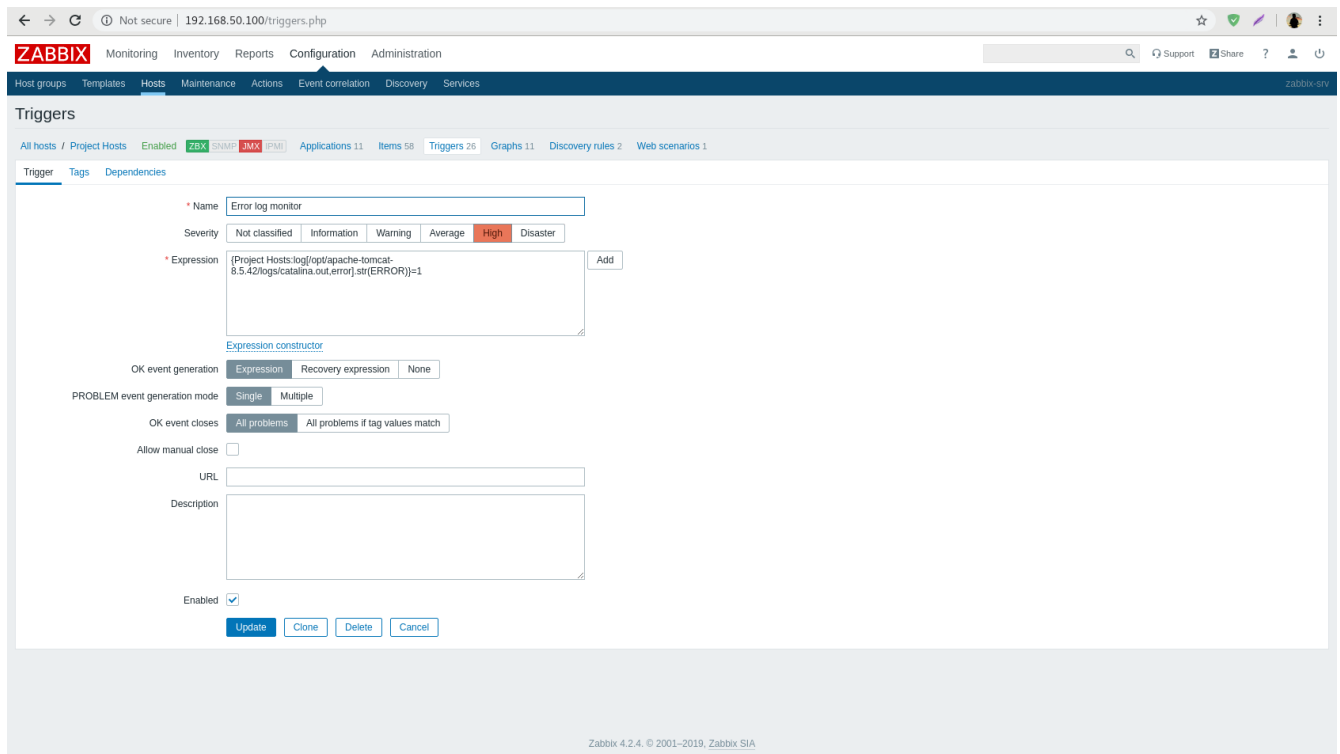
1. Create item and develop custom trigger for log monitoring (you can use httpd or tomcat logs)

```
#!/bin/bash
# access to remote logging
sudo sed -i '73a\EnableRemoteCommands=1' /etc/zabbix/zabbix_agentd.conf
# remote logging ON
sudo sed -i '82a\LogRemoteCommands=1' /etc/zabbix/zabbix_agentd.conf
# launch as root
sudo sed -i '256a\AllowRoot=1' /etc/zabbix/zabbix_agentd.conf
```

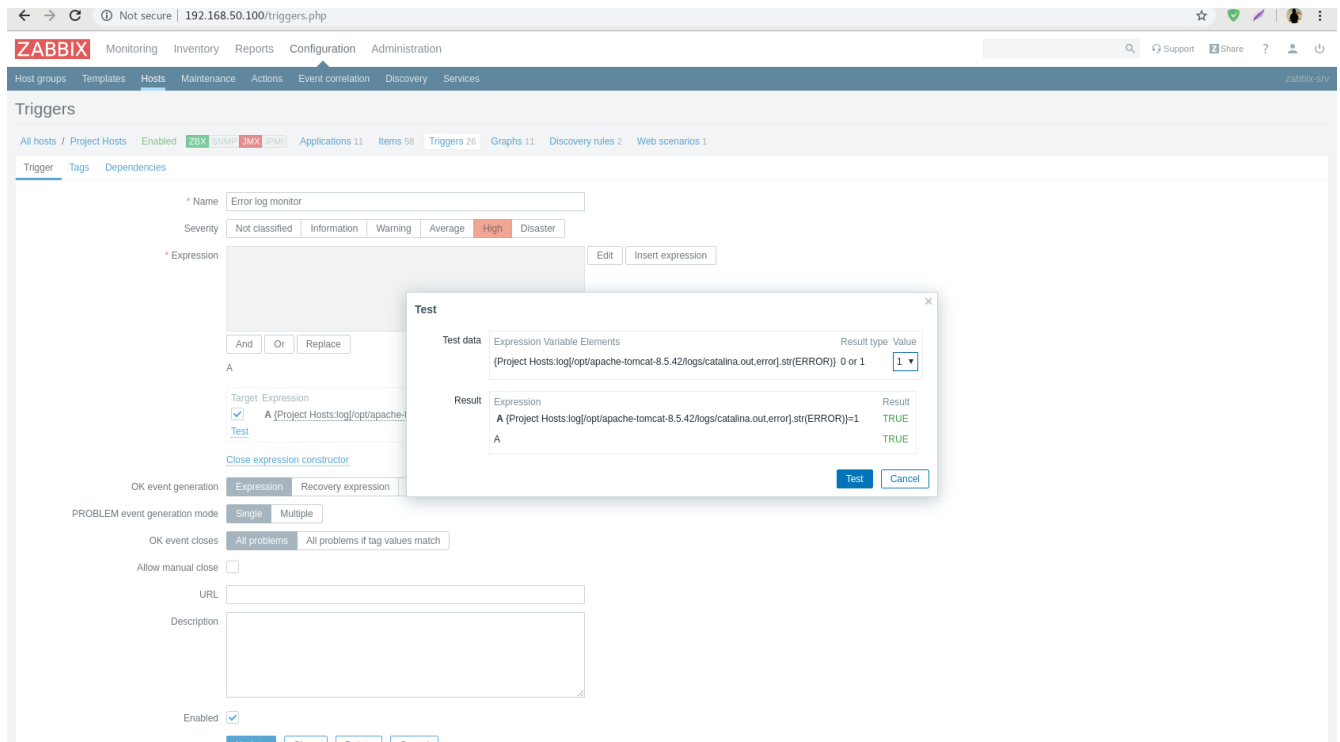
The screenshot shows the Zabbix web interface for configuring a new item. The browser address bar indicates the URL: 192.168.50.100/items.php?form=update&hostid=10263&itemid=28815. The Zabbix logo is visible in the top left corner. The navigation menu includes Monitoring, Inventory, Reports, Configuration, and Administration. The 'Configuration' menu is expanded, showing Host groups, Templates, Hosts, Maintenance, Actions, Event correlation, Discovery, and Services. The 'Items' tab is selected, showing a list of items with columns for Name, Type, Key, and Status. The 'Logging' item is highlighted. The configuration form for the 'Logging' item is displayed, showing the following fields: Name (Logging), Type (Zabbix agent (active)), Key (log/opt/apache-tomcat-8.5.42/logs/catalina.out.<regexp>.<encoding>.<maxlines>), Type of information (Log), Update interval (30s), History storage period (90d), Log time format, New application, Applications (None), Description, and Enabled (checked). The 'Update' button is highlighted.

Picture 1

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



Picture 2.1



Picture 2.2

### 3. Configure:

Simple checks:

- Zabbix Server WEB availability (80)

The screenshot shows the Zabbix web interface for configuring a new item. The browser address bar indicates the URL is 192.168.50.100/items.php?form=create&hostid=10263. The Zabbix logo is visible in the top left. The navigation bar includes links for Monitoring, Inventory, Reports, Configuration, and Administration. The 'Configuration' section is active, showing a breadcrumb trail: Host groups / Templates / Hosts / Maintenance / Actions / Event correlation / Discovery / Services. The 'Items' tab is selected, showing a summary of items: All hosts / Project Hosts / Enabled / ZBX / Zabbix / JMX / PMM / Applications 11 / Items 51 / Triggers 23 / Graphs 9 / Discovery rules 2 / Web scenarios 1. The 'Item' tab is active, showing the 'Preprocessing' section. The configuration form includes the following fields: Name (WEB availability), Type (Simple check), Key (net.tcp.service[http,80]), Host interface (192.168.50.101 : 10050), User name, Password, Type of information (Numeric (unsigned)), Units, Update interval (30s), Custom intervals (Flexible, Scheduling, 50s, 1-7:00:00-24:00), History storage period (90d), Trend storage period (365d), Show value (As is), New application (None), and Applications (None, CPU, Filesystems, General, Memory, Network interfaces, OS, Performance, Processes, Security).

← → ↻ ⚠ Not secure | 192.168.50.100/items.php?form=create&hostid=10263

**ZABBIX** Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery Services

Items

All hosts / Project Hosts Enabled ZBX Zabbix JMX PMM Applications 11 Items 51 Triggers 23 Graphs 9 Discovery rules 2 Web scenarios 1

Item Preprocessing

\* Name WEB availability

Type Simple check

\* Key net.tcp.service[http,80] Select

\* Host interface 192.168.50.101 : 10050

User name

Password

Type of information Numeric (unsigned)

Units

\* Update interval 30s

Custom intervals

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

Add

\* History storage period 90d

\* Trend storage period 365d

Show value As is show value mappings

New application

Applications

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

Picture 3.1

- Zabbix DB is available (3306)

The screenshot shows the Zabbix web interface for configuring a new item. The browser address bar indicates the URL: 192.168.50.100/items.php?form=update&hostid=10263&itemid=28817. The Zabbix logo is in the top left, and navigation tabs include Monitoring, Inventory, Reports, Configuration, and Administration. The 'Configuration' tab is active, and the 'Items' sub-tab is selected. The 'Items' page shows a list of items with filters for 'All hosts', 'Project Hosts', 'Enabled', 'ZBX', 'SNMP', 'JMX', 'PM', 'Applications 11', 'Items 55', 'Triggers 23', 'Graphs 9', 'Discovery rules 2', and 'Web scenarios 1'. The 'Item' configuration form is displayed, showing the following fields:

- Name: Zabbix DB is available
- Type: Simple check
- Key: net.tcp.service[sql,3306]
- Host interface: 192.168.50.101 : 10050
- User name: (empty)
- Password: (empty)
- Type of information: Numeric (unsigned)
- Units: (empty)
- Update interval: 30s
- Custom intervals: A table with columns Type, Interval, Period, and Action. The 'Scheduling' tab is active, showing an interval of 50s and a period of 1-7:00:00-24:00. There are 'Add' and 'Remove' buttons.
- History storage period: 90d
- Trend storage period: 365d
- Show value: As is
- New application: (empty)
- Applications: A dropdown menu showing a list of application categories: None, CPU, Filesystems, General, Memory, Network interfaces, OS, Performance, Processes, and Security.

Picture 3.2

- Tomcat availability (80, 8080)

The screenshot shows the Zabbix web interface for configuring a new item. The browser address bar indicates the URL: 192.168.50.100/items.php. The Zabbix logo is in the top left, and navigation tabs include Monitoring, Inventory, Reports, Configuration, and Administration. The 'Configuration' tab is active, and the 'Items' sub-tab is selected. The 'Items' page shows a list of items with filters for 'All hosts', 'Project Hosts', 'Enabled', 'ZBX', 'SNMP', 'JMX', 'PM', 'Applications 11', 'Items 55', 'Triggers 23', 'Graphs 9', 'Discovery rules 2', and 'Web scenarios 1'. The 'Item' configuration form is displayed, showing the following fields:

- Name: Tomcat availability
- Type: Simple check
- Key: net.tcp.service[http,8080]
- Host interface: 192.168.50.101 : 10050
- User name: (empty)
- Password: (empty)
- Type of information: Numeric (unsigned)
- Units: (empty)
- Update interval: 30s
- Custom intervals: A table with columns Type, Interval, Period, and Action. The 'Scheduling' tab is active, showing an interval of 50s and a period of 1-7:00:00-24:00. There are 'Add' and 'Remove' buttons.
- History storage period: 90d
- Trend storage period: 365d
- Show value: As is
- New application: (empty)
- Applications: A dropdown menu showing a list of application categories: None, CPU, Filesystems, General, Memory, Network interfaces, OS, Performance, Processes, and Security.

Picture 3.3

- Tomcat Server is available by ssh (22)

← → ↻ Not secure | 192.168.50.100/items.php?form=create&hostid=10263

**ZABBIX** Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery Services

Items

All hosts / Project Hosts Enabled ZBX SNMP JMX IPMI Applications 11 Items 54 Triggers 23 Graphs 9 Discovery rules 2 Web scenarios 1

Item Preprocessing

\* Name Tomcat Server is available by ssh

Type Simple check

\* Key net.tcp.service[ssh,22] Select

\* Host interface 192.168.50.101:10050

User name

Password

Type of information Numeric (unsigned)

Units

\* Update interval 30s

Custom intervals

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

Add Remove

\* History storage period 90d

\* Trend storage period 365d

Show value As is show value mappings

New application

Applications

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

Picture 3.4

## Calculated Checks:

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

← → ↻ Not secure | 192.168.50.100/items.php?form=update&hostid=10263&itemid=28820

**ZABBIX** Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery Services

Items

All hosts / Project Hosts Enabled ZBX SNMP JMX IPMI Applications 11 Items 56 Triggers 23 Graphs 9 Discovery rules 2 Web scenarios 1

Item Preprocessing

\* Name CPU Load per Core (1, 5, 15min)

Type Calculated

\* Key cpu

\* Formula last(system.cpu.load[percpu,avg1])/last(system.cpu.load[percpu,avg5])/last(system.cpu.load[percpu,avg15])

Type of information Numeric (unsigned)

Units

\* Update interval 30s

Custom intervals

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

Add Remove

\* History storage period 90d

\* Trend storage period 365d

Show value As is show value mappings

New application

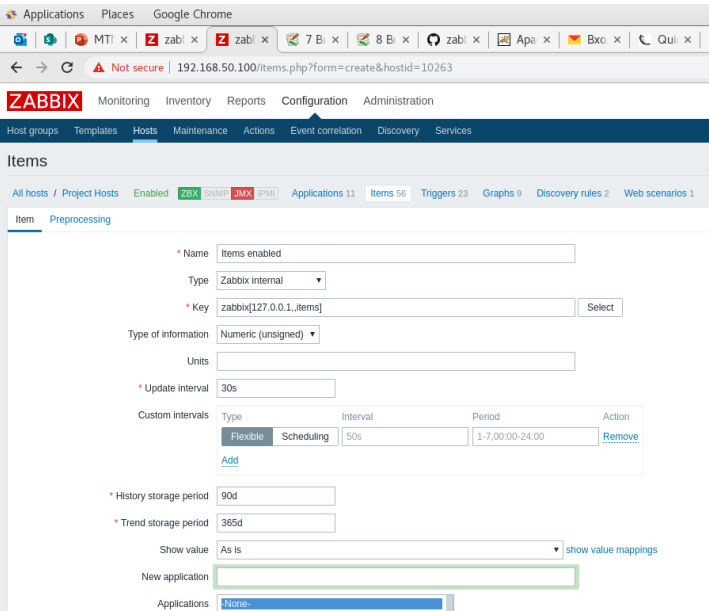
Applications

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

Picture 3.5

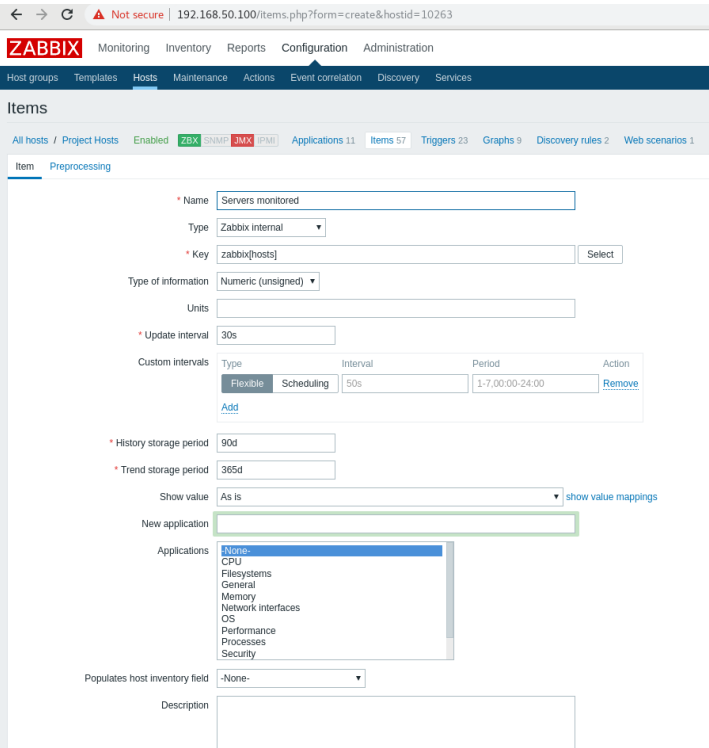
Internal Checks:

- How many items are enabled



Picture 3.6

- How many Servers are being monitored

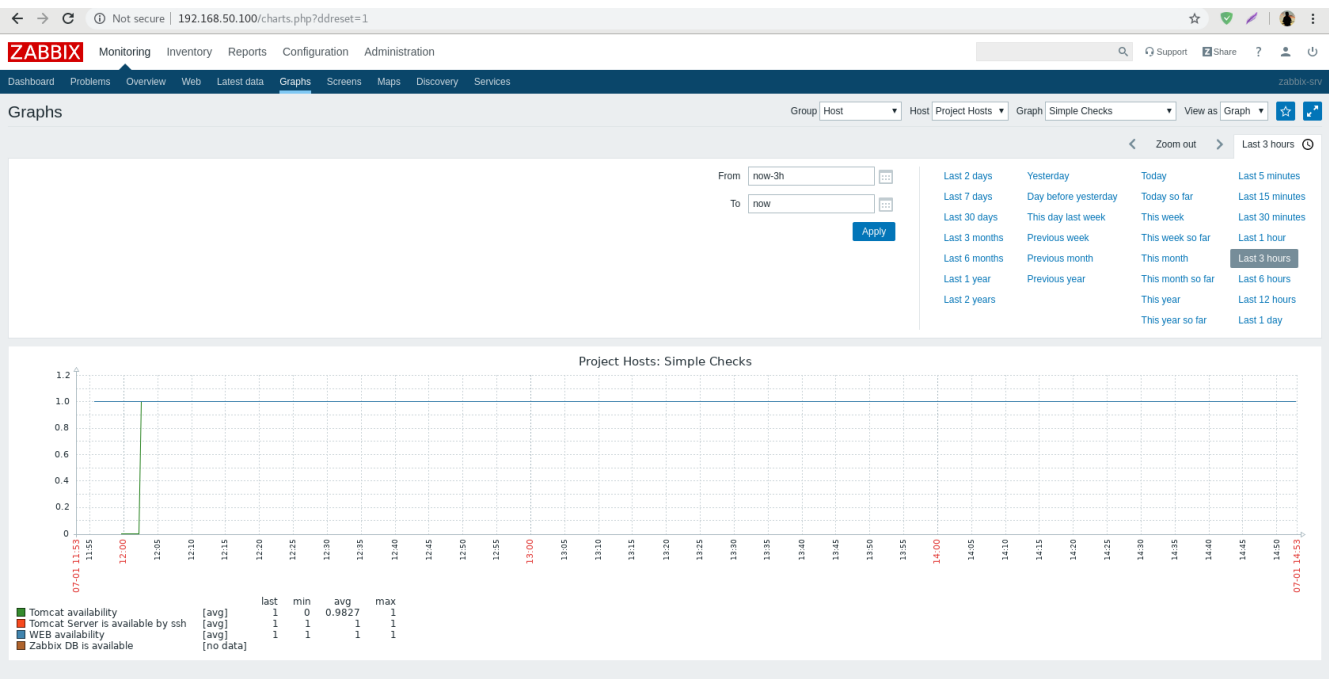


Picture 3.7

# Create triggers for every check

<input type="checkbox"/>	Information	OK	Template OS Linux: Hostname was changed on {HOST.NAME}	{Project Hosts:system.hostname.diff(0)}>0	Enabled
<input checked="" type="checkbox"/>	Not classified	OK	Internal checks	{Project Hosts:zabbix[127.0.0.1.items].last(0)}>=1 and {Project Hosts:zabbix[hosts].last(0)}>=3	Enabled
<input type="checkbox"/>	High	OK	JMX param change	{Project Hosts:jmx["java.lang.type=Memory","HeapMemoryUsage.committed"].last(10s)}<100	Enabled
<input type="checkbox"/>	Average	OK	Template OS Linux: Lack of available memory on server {HOST.NAME}	{Project Hosts:vm.memory.size[available].last(0)}<20M	Enabled
<input type="checkbox"/>	Warning	OK	Template OS Linux: Lack of free swap space on {HOST.NAME}	{Project Hosts:system.swap.size[pfree].last(0)}<50	Enabled
<input type="checkbox"/>	Warning	OK	Template OS Linux: Processor load is too high on {HOST.NAME}	{Project Hosts:system.cpu.load[percpu.avg].avg(5m)}>5	Enabled
<input checked="" type="checkbox"/>	Not classified	OK	Simple checks	{Project Hosts:net.tcp.service[ssh,22].last(0)}>=1 and {Project Hosts:net.tcp.service[http,80].last(0)}>=0 and {Project Hosts:net.tcp.service[sql,3306].last(0)}>=0 and {Project Hosts:net.tcp.service[http,8080].last(0)}>=0	Enabled
<input type="checkbox"/>	Warning	OK	Template OS Linux: Too many processes on {HOST.NAME}	{Project Hosts:proc.num[]}.avg(5m)>300	Enabled
<input type="checkbox"/>	Warning	OK	Template OS Linux: Too many processes running on {HOST.NAME}	{Project Hosts:proc.num[_run]}.avg(5m)>30	Enabled

Picture 3.8



Picture 3.9