

# Задание 1

## Установим nginx

```
root@R3:~# apt install nginx -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libnginx-mod-http-auth-pam libnginx-mod-http-dav-ext libnginx-mod-http-echo libnginx-mod-http-geoip libnginx-mod-
  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream nginx-common nginx-full
Suggested packages:
  fcgiwrap nginx-doc ssl-cert
The following NEW packages will be installed:
  libnginx-mod-http-auth-pam libnginx-mod-http-dav-ext libnginx-mod-http-echo libnginx-mod-http-geoip libnginx-mod-
  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream nginx nginx-common nginx-full
0 upgraded, 13 newly installed, 0 to remove and 0 not upgraded.
Need to get 1,760 kB of archives.
After this operation, 3,295 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian buster/main amd64 nginx-common all 1.14.2-2+deb10u4 [121 kB]
Get:2 http://deb.debian.org/debian buster/main amd64 libnginx-mod-http-auth-pam amd64 1.14.2-2+deb10u4 [92.8 kB]
Get:3 http://deb.debian.org/debian buster/main amd64 libnginx-mod-http-dav-ext amd64 1.14.2-2+deb10u4 [100 kB]
Get:4 http://deb.debian.org/debian buster/main amd64 libnginx-mod-http-echo amd64 1.14.2-2+deb10u4 [104 kB]
```

## Установим php fpm

```
root@R3:~# apt-get install -y php7.3 php7.3-cli php7.3-fpm php7.3-opcache php7.3-curl php7.3-mbstring php7.3-zip php7.3-xml
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libzip4 php-common php7.3-common php7.3-json php7.3-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libzip4 php-common php7.3 php7.3-cli php7.3-common php7.3-curl php7.3-fpm php7.3-json php7.3-mbstring php7.3-opcache php7.3-readline php7.3-xml php7.3-zip
0 upgraded, 13 newly installed, 0 to remove and 0 not upgraded.
Need to get 4,812 kB of archives.
After this operation, 20.1 MB of additional disk space will be used.
Get:1 http://deb.debian.org/debian buster/main amd64 libzip4 amd64 1.5.1-4 [50.7 kB]
Get:2 http://deb.debian.org/debian buster/main amd64 php-common all 2:69 [15.0 kB]
Get:3 http://deb.debian.org/debian buster/main amd64 php7.3-common amd64 7.3.31-1~deb10u1 [962 kB]
Get:4 http://deb.debian.org/debian buster/main amd64 php7.3-json amd64 7.3.31-1~deb10u1 [18.6 kB]
Get:5 http://deb.debian.org/debian buster/main amd64 php7.3-opcache amd64 7.3.31-1~deb10u1 [184 kB]
Get:6 http://deb.debian.org/debian buster/main amd64 php7.3-readline amd64 7.3.31-1~deb10u1 [12.0 kB]
Get:7 http://deb.debian.org/debian buster/main amd64 php7.3-cli amd64 7.3.31-1~deb10u1 [1,415 kB]
Get:8 http://deb.debian.org/debian buster/main amd64 php7.3-fpm amd64 7.3.31-1~deb10u1 [1,428 kB]
Get:9 http://deb.debian.org/debian buster/main amd64 php7.3 all 7.3.31-1~deb10u1 [47.3 kB]
Get:10 http://deb.debian.org/debian buster/main amd64 php7.3-curl amd64 7.3.31-1~deb10u1 [30.9 kB]
Get:11 http://deb.debian.org/debian buster/main amd64 php7.3-mbstring amd64 7.3.31-1~deb10u1 [518 kB]
Get:12 http://deb.debian.org/debian buster/main amd64 php7.3-xml amd64 7.3.31-1~deb10u1 [109 kB]
Get:13 http://deb.debian.org/debian buster/main amd64 php7.3-zip amd64 7.3.31-1~deb10u1 [21.5 kB]
```

## Установим postgresql

```
root@R3:~# apt install postgresql -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libpq5 postgresql-ll postgresql-client-ll postgresql-client-common postgresql-common ssl-cert sysstat
Suggested packages:
  postgresql-doc postgresql-doc-ll libjson-perl openssl-blacklist isag
The following NEW packages will be installed:
  libpq5 postgresql postgresql-ll postgresql-client-ll postgresql-client-common postgresql-common ssl-cert sysstat
0 upgraded, 8 newly installed, 0 to remove and 0 not upgraded.
Need to get 16.7 MB of archives.
After this operation, 55.7 MB of additional disk space will be used.
Get:1 http://security.debian.org/debian-security buster/updates/main amd64 libpq5 amd64 11.17-0+deb10u1 [173 kB]
Get:2 http://deb.debian.org/debian buster/main amd64 postgresql-client-common all 200+deb10u5 [85.0 kB]
Get:3 http://security.debian.org/debian-security buster/updates/main amd64 postgresql-client-ll amd64 11.17-0+deb10u1 [1,412 kB]
Get:4 http://deb.debian.org/debian buster/main amd64 ssl-cert all 1.0.39 [20.8 kB]
Get:5 http://deb.debian.org/debian buster/main amd64 postgresql-common all 200+deb10u5 [605 kB]
```

Начнем установку zabbix. Присоединим репозиторий

```
root@R3:~# wget https://repo.zabbix.com/zabbix/5.0/debian/pool/main/z/zabbix-release/zabbix-release_5.0-1%2Bbuster_all.deb
--2022-10-06 20:39:30-- https://repo.zabbix.com/zabbix/5.0/debian/pool/main/z/zabbix-release/zabbix-release_5.0-1%2Bbuster_all.deb
Resolving repo.zabbix.com (repo.zabbix.com)... 178.128.6.101, 2604:a880:2:d0::2062:d001
Connecting to repo.zabbix.com (repo.zabbix.com)|178.128.6.101|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4236 (4.1K) [application/octet-stream]
Saving to: 'zabbix-release_5.0-1+buster_all.deb'

zabbix-release_5.0-1+buster_all.deb          100%[=====]

2022-10-06 20:39:31 (195 MB/s) - 'zabbix-release_5.0-1+buster_all.deb' saved [4236/4236]

root@R3:~# dpkg -i zabbix-release_5.0-1+buster_all.deb
Selecting previously unselected package zabbix-release.
(Reading database ... 135915 files and directories currently installed.)
Preparing to unpack zabbix-release_5.0-1+buster_all.deb ...
Unpacking zabbix-release (1:5.0-1+buster) ...
Setting up zabbix-release (1:5.0-1+buster) ...
root@R3:~# apt update
Hit:1 http://deb.debian.org/debian buster InRelease
Hit:2 http://security.debian.org/debian-security buster/updates InRelease
```

Установим zabbix сервер, веб интерфейс и агент

```
root@R3:~# apt install zabbix-server-pgsql zabbix-frontend-php php7.3-pgsql zabbix-nginx-conf zabbix-agent
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  fping libodbc1 libopenipmi0 libssh-4 php-bcmath php-gd php-ldap php7.3-bcmath php7.3-gd php7.3-ldap snmpd
Suggested packages:
  libmyodbc odbc-postgresql tdsodbc unixodbc-bin snmptrapd zabbix-apache-conf
The following NEW packages will be installed:
  fping libodbc1 libopenipmi0 libssh-4 php-bcmath php-gd php-ldap php7.3-bcmath php7.3-gd php7.3-ldap php7.3-pgsql sn
0 upgraded, 16 newly installed, 0 to remove and 0 not upgraded.
Need to get 8,065 kB of archives.
After this operation, 32.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian buster/main amd64 libodbc1 amd64 2.3.6-0.1 [223 kB]
Get:2 http://security.debian.org/debian-security buster/updates/main amd64 snmpd amd64 5.7.3+dfsg-5+deb10u3 [56.3 kB]
Get:3 http://deb.debian.org/debian buster/main amd64 libopenipmi0 amd64 2.0.25-2.1 [540 kB]
Get:4 http://deb.debian.org/debian buster/main amd64 libssh-4 amd64 0.8.7-1+deb10u1 [197 kB]
Get:5 http://deb.debian.org/debian buster/main amd64 fping amd64 4.2-1 [37.7 kB]
Get:6 http://deb.debian.org/debian buster/main amd64 php7.3-bcmath amd64 7.3.31-1~deb10u1 [15.0 kB]
Get:7 http://deb.debian.org/debian buster/main amd64 php-bcmath all 2:7.3+69 [5,996 B]
Get:8 http://deb.debian.org/debian buster/main amd64 php7.3-gd amd64 7.3.31-1~deb10u1 [37.5 kB]
```

Создадим БД и пользователя к ней

```
root@R3:~# sudo -u postgres createuser --pwprompt zabbix
could not change directory to "/root": Permission denied
Enter password for new role:
Enter it again:
root@R3:~# sudo -u postgres createdb -O zabbix zabbix
could not change directory to "/root": Permission denied
root@R3:~#
```

Импортируем схему

```
zcat /usr/share/doc/zabbix-server-pgsql*/create.sql.gz | sudo -u zabbix psql zabbix
```

Копируем готовый nginx.conf в директорию nginx sites-available

Left	File	Command	Options	Right
<- /etc/zabbix				<- /etc/nginx/sites-available
.n	Name	Size	Modify time	.n
../		UP--DIR	Oct 6 21:27	../
/web		4096	Sep 19 09:49	default
/zabbix_agentd.d		4096	Sep 19 09:49	default.save
nginx.conf		1871	Sep 19 09:49	
php-fpm.conf		583	Sep 19 09:49	
zabbix_agentd.conf		15991	Sep 19 09:49	
zabbix_server.conf		22315	Oct 6 21:32	

Редактируем php.ini

```
valid_irc_lovelev_preferred_irc_lovelev
root@R3:/etc/php/7.3/fpm# vim php.ini
```

Раскомментируем строку и укажем

```
date.timezone = Europe/Moscow
```

Рестарт сервисов, добавляем в автозагрузку

```
root@R3:/etc/php/7.3/fpm# systemctl restart zabbix-server zabbix-agent nginx php7.3-fpm
root@R3:/etc/php/7.3/fpm# systemctl restart postgresql
root@R3:/etc/php/7.3/fpm# systemctl enable zabbix-server zabbix-agent nginx php7.3-fpm
Synchronizing state of zabbix-server.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable zabbix-server
Synchronizing state of zabbix-agent.service with SysV service script with /lib/systemd/systemd-sysv-install.
```

Заходим в браузер на айпи адрес нашей VM



192.168.0.241

Installation

**ZABBIX**

- Welcome
- Check of pre-requisites
- Configure DB connection
- Zabbix server details
- Pre-installation summary
- Install

Welcome to

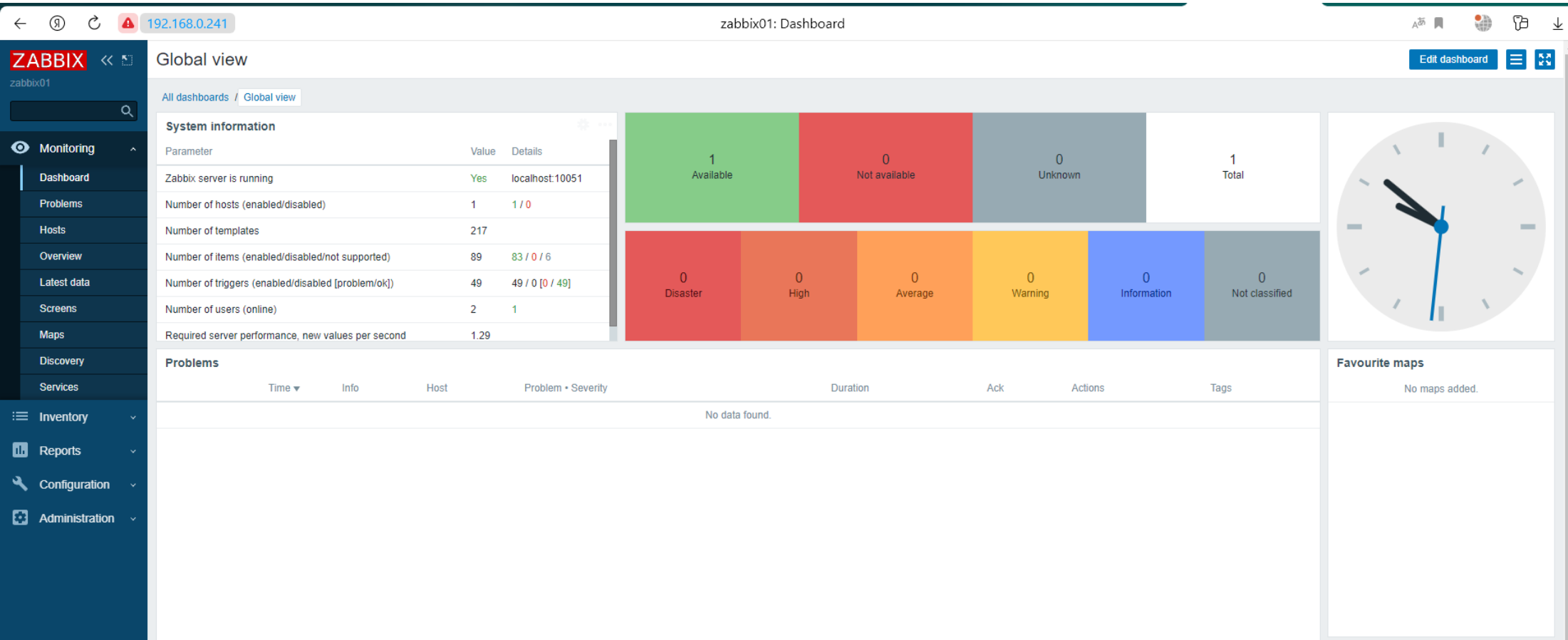
# Zabbix 5.0

Back

Next step

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Проходим стартовую конфигурацию и попадаем в основное меню



## Задание 2

Создадим нагрузку на нашу сетевую карту и посмотрим как это отразится на графике.

Поставим на скачивание дистрибутив ubuntu

```
root@R3:~# wget https://releases.ubuntu.com/20.04.5/ubuntu-20.04.5-live-server-amd64.iso?_ga=2.30936956.218585099.1665224682.2022-10-08 13:26:52-- https://releases.ubuntu.com/20.04.5/ubuntu-20.04.5-live-server-amd64.iso?_ga=2.30936956.218585099.1665224682.2022-10-08 13:26:52
Resolving releases.ubuntu.com (releases.ubuntu.com)... 91.189.91.123, 91.189.91.124, 185.125.190.37, ...
Connecting to releases.ubuntu.com (releases.ubuntu.com) [91.189.91.123]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1406533632 (1.3G) [application/x-iso9660-image]
Saving to: 'ubuntu-20.04.5-live-server-amd64.iso?_ga=2.30936956.218585099.1665224682-74302593.1662894515'

ubuntu-20.04.5-live-server-amd64.iso?_ga=2.30936956 100%[=====]

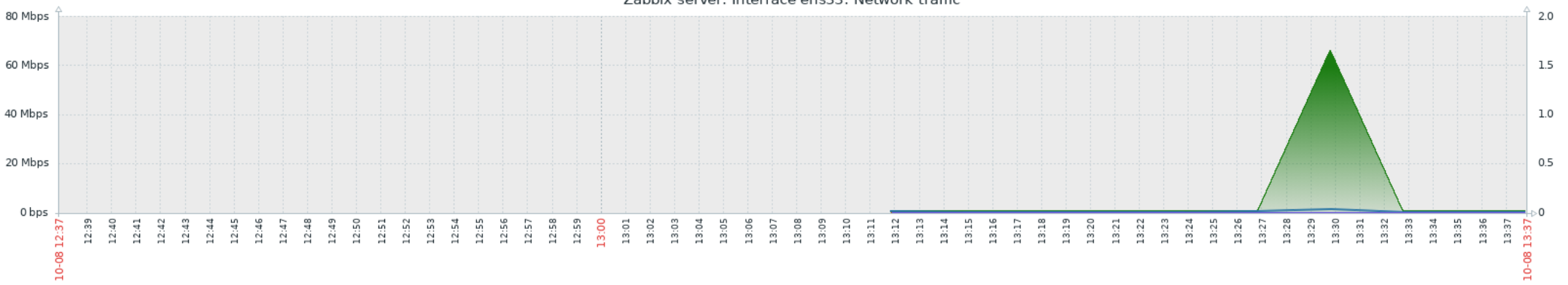
2022-10-08 13:29:08 (9.91 MB/s) - 'ubuntu-20.04.5-live-server-amd64.iso?_ga=2.30936956.218585099.1665224682-74302593.1662894515' saved [1406533632/1406533632]

root@R3:~#
```

Посмотрим как это отобразится в zabbix



Zabbix server: Interface ens33: Network traffic

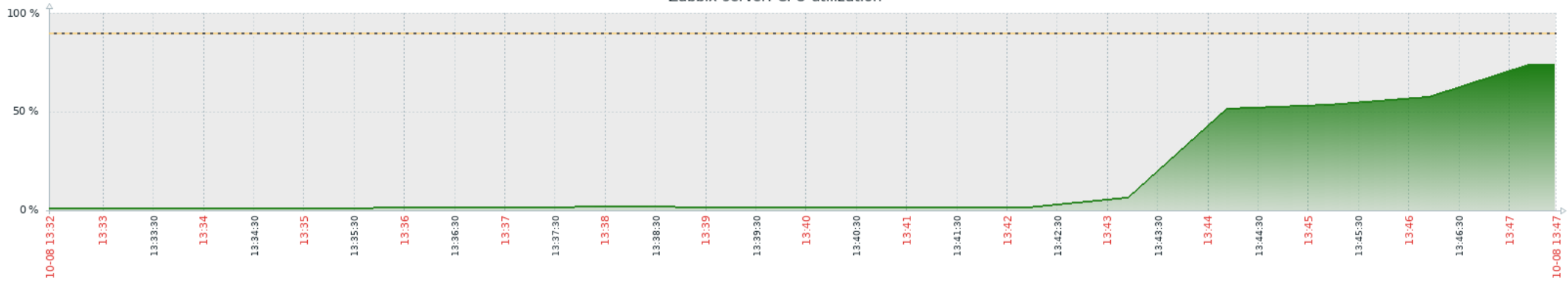


Запустим команду ниже для нагрузки CPU

```
root@R3:~# dd if=/dev/urandom | bzip2 -9 > /dev/null
```

Посмотрим как это отразится на графиках

Zabbix server: CPU utilization



## Задание 3

Устанавливаем zabbix agent

```
root@R1:~# wget https://repo.zabbix.com/zabbix/5.0/debian/pool/main/z/zabbix-release/zabbix-release_5.0-1%2B
--2022-10-08 14:02:57-- https://repo.zabbix.com/zabbix/5.0/debian/pool/main/z/zabbix-release/zabbix-release
Resolving repo.zabbix.com (repo.zabbix.com)... 178.128.6.101, 2604:a880:2:d0::2062:d001
Connecting to repo.zabbix.com (repo.zabbix.com)|178.128.6.101|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4236 (4.1K) [application/octet-stream]
Saving to: 'zabbix-release_5.0-1+buster_all.deb'

zabbix-release_5.0-1+buster_all.deb      100%[=====]
2022-10-08 14:02:57 (203 MB/s) - 'zabbix-release_5.0-1+buster_all.deb' saved [4236/4236]

root@R1:~# dpkg -i zabbix-release_5.0-1+buster_all.deb
Selecting previously unselected package zabbix-release.
(Reading database ... 149195 files and directories currently installed.)
```

Редактируем zabbix agent.conf

```
root@R1:/etc/zabbix# vim zabbix_agentd.conf
root@R1:/etc/zabbix#
```

```
# Mandatory: yes, if StartAgents is not e
# Default:
# Server=

Server=192.168.0.241

### Option: ListenPort
#     Agent will listen on this port fo
#
```

```
root@R1:/etc/zabbix# systemctl restart zabbix-agent
root@R1:/etc/zabbix#
```

В веб интерфейсе zabbix добавляем новый узел



zabbix01

Monitoring

Inventory

Reports

Configuration

Host groups

Templates

Hosts

Maintenance

Actions

Event correlation

Discovery

Services

Administration

Host

Templates

IPMI

Tags

Macros

Inventory

Encryption

\* Host name

host R1

Visible name

\* Groups

Linux servers

Templates/Applications

Discovered hosts

Templates

Select

type here to search

\* Interfaces

Type	IP address	DNS name	Connect to	Port
Agent	192.168.0.241		IPDNS	10050

Add

Description

R1

Monitored by proxy

(no proxy)

Enabled

☒

Add

Cancel

Задание 4

```
root@R2:~# siege 192.168.0.202
** SIEGE 4.0.4
** Preparing 25 concurrent users for battle.
The server is now under siege...
```

Посмотрим htop на нашей машине с веб сервером

```
1 [|||||||||||||||||||||||||||||||||||||97.4%] Tasks: 94, 166 thr; 4 running
2 [|||||||||||||||||||||||||||||||||||||96.7%] Load average: 2.94 0.82 0.45
3 [|||||||||||||||||||||||||||||||||||||98.0%] Uptime: 01:07:54
4 [|||||||||||||||||||||||||||||||||||||97.3%]
Mem[|||||||||||||||||||||711M/1.92G]
Swp[|||||||||||||||||0K/1.37G]
```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
3106	www-data	20	0	201M	39404	24724	R	79.5	2.0	0:32.74	php-fpm: pool www
2941	www-data	20	0	201M	39828	25084	R	78.8	2.0	2:36.30	php-fpm: pool www
3109	www-data	20	0	201M	39412	24724	R	76.1	2.0	0:31.42	php-fpm: pool www
2935	www-data	20	0	201M	39952	25208	R	71.5	2.0	2:38.13	php-fpm: pool www
2938	www-data	20	0	201M	39620	24892	R	60.1	2.0	2:34.78	php-fpm: pool www
754	mysql	20	0	2313M	91944	18600	R	14.0	4.6	0:31.56	/usr/sbin/mysqld
2930	www-data	20	0	65116	7628	4960	R	10.0	0.4	0:20.71	nginx: worker process

Посмотрим zabbix

