

# Лабораторная №1

## Loki + Zabbix + Grafana

### Часть 1 - Логирование

Создали файл docker-compose.yml, который содержит в себе тестовый сервис Nextcloud, Loki, Promtail, Grafana, Zabbix и Postgres для него.

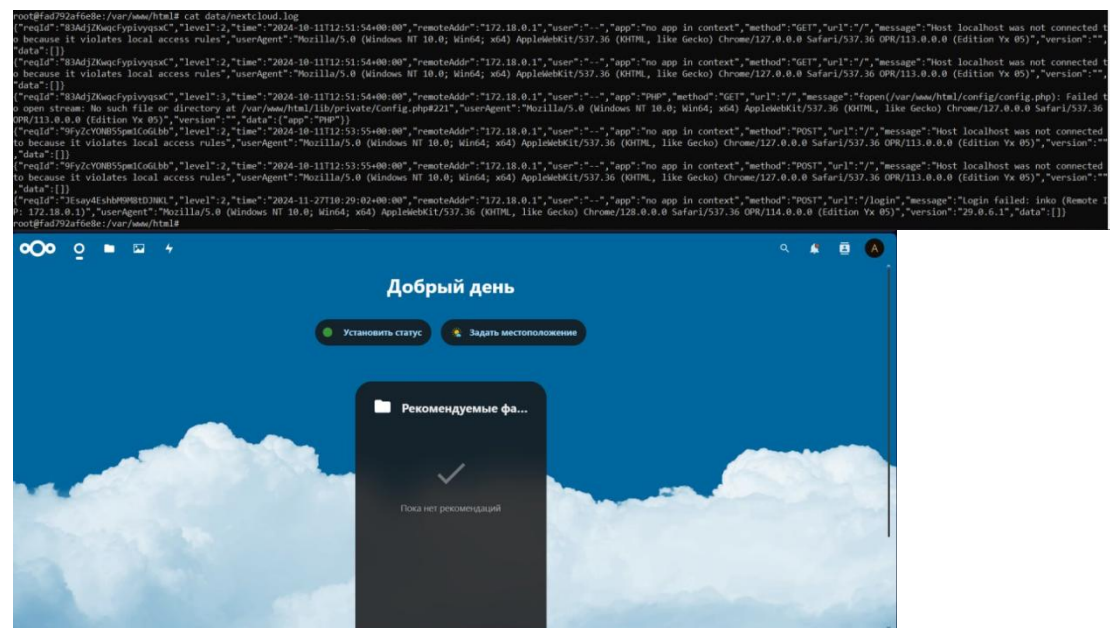
```
C:\Vlad_labs\Admin>docker-compose up -d
[+] Running 7/7
  Container nextcloud      Started      1.1s
  Container grafana        Started      1.1s
  Container postgres-zabbix Started      0.6s
  Container loki           Started      0.9s
  Container promtail       Started      0.6s
  Container zabbix-back    Started      1.6s
  Container zabbix-front   Started      1.6s
C:\Vlad_labs\Admin>
```

Создали файл promtail\_config.yml

Запустили compose файл

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
8a14887e1eb	zabbix/zabbix-server-pgsql:ubuntu-6.4-latest	"/usr/bin/tini -- /u..."	6 weeks ago	Up About a minute	0.0.0.0:10051->10051/tcp	zabbix-back
cb2acc63a298	zabbix/zabbix-web-nginx-pgsql:ubuntu-6.4-latest	"docker-entrypoint.sh..."	6 weeks ago	Up About a minute	8443/tcp, 0.0.0.0:8082->8080/tcp	zabbix-front
97c325085d6	postgres:15	"docker-entrypoint.sh..."	6 weeks ago	Up About a minute (healthy)	5432/tcp	postgres-zabbix
fad792af6e8e	nextcloud:29.0.6	"/entrypoint.sh apac..."	6 weeks ago	Up About a minute	0.0.0.0:8080->80/tcp	nextcloud
6933fc674a8d	grafana/promtail:2.9.0	"/usr/bin/promtail -..."	6 weeks ago	Up About a minute		promtail
7bba81d4a097	grafana/loki:2.9.0	"/usr/bin/loki -conf..."	6 weeks ago	Up About a minute	0.0.0.0:3100->3100/tcp	loki
cb0c770a9e4	grafana/grafana:11.2.0	"/run.sh /run.sh"	6 weeks ago	Up About a minute	0.0.0.0:3000->3000/tcp	grafana

Инициализировали Nextcloud, проверили, куда идут логи.



Log-файл, что нам нужен, "забран".

```
C:\Vlad_labs\Admin>docker logs d933fc674a8d
Unable to parse config: /etc/promtail/config.yml: yaml: line 12: did not find expected key. Use '-config.expand-env=true' flag if you want to expand environment variables in your config file
Unable to parse config: /etc/promtail/config.yml: yaml: line 12: did not find expected key. Use '-config.expand-env=true' flag if you want to expand environment variables in your config file
Unable to parse config: /etc/promtail/config.yml: yaml: line 12: did not find expected key. Use '-config.expand-env=true' flag if you want to expand environment variables in your config file
level-info ts=2024-10-11T13:17:40.068383676Z caller=prmtail.go:133 msg="Reloading configuration file" md5sum=6a76783e3f58cd016e799013e0489aca
level-info ts=2024-10-11T13:17:40.072035209Z caller=server.go:122 http[::]:9080 grpc[::]:37785 msg="server listening on addresses"
level-info ts=2024-10-11T13:17:40.073929441Z caller=main.go:174 msg="Starting Promtail" version="(version=2.9.0, branch=HEAD, revision=2feb64f69)"
level-warn ts=2024-10-11T13:17:40.073464272Z caller=prmtail.go:263 msg="enable watchConfig"
level-info ts=2024-10-11T13:17:45.072432446Z caller=filetargetmanager.go:361 msg="Adding target" key="/opt/nc_data/".log:[ob="nextcloud_logs"]"
level-info ts=2024-10-11T13:17:45.072637446Z caller=filetarget.go:313 msg="watching new directory" directory=/opt/nc_data
ts=2024-10-11T13:17:45.072719508Z caller=log.go:168 level=info msg="Seeked /opt/nc_data/nextcloud_logs - 2(Offset:0 whence:0)"
level-info ts=2024-10-11T13:17:45.072729471Z caller=tailer.go:145 component=tailer msg="tail routine: started" path=/opt/nc_data/nextcloud.log
level-info ts=2024-10-11T13:18:32.386394726Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level-info ts=2024-10-11T13:18:32.386459054Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level-info ts=2024-10-11T13:19:32.374581907Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
```

Часть 2 - Мониторинг

Настроили zabbix.

Сделали импорт темплейта для мониторинга Nextcloud.



Настроили хост

<input type="checkbox"/>	nextcloud	Nextcloud: ping service	19s	healthy	History
--------------------------	-----------	-------------------------	-----	---------	---------

Проверяем настройку

```
StatusCode      : 200
StatusDescription : OK
Content          : [{"installed":true,"maintenance":true,"needsDbUpgrade":false,"version":"29.0.6.1","versionstring":"29.0.6","edition":"","productName":"Nextcloud","extendedSupport":false}]
RawContent       : HTTP/1.1 200 OK
                  Referrer-Policy: no-referrer
                  X-Content-Type-Options: nosniff
                  X-Frame-Options: SAMEORIGIN
                  X-Permitted-Cross-Domain-Policies: none
                  X-Robots-Tag: noindex, nofollow
                  X-XSS-Protection:...
```

	Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Update	Actions	Tags
<input type="checkbox"/>	13:15:31	Disaster		PROBLEM		nextcloud	Nextcloud is in maintenance mode	2m 16s	Update		
<input type="checkbox"/>	13:15:31	Disaster	13:19:31	RESOLVED		nextcloud	Nextcloud is in maintenance mode	4m	Update		

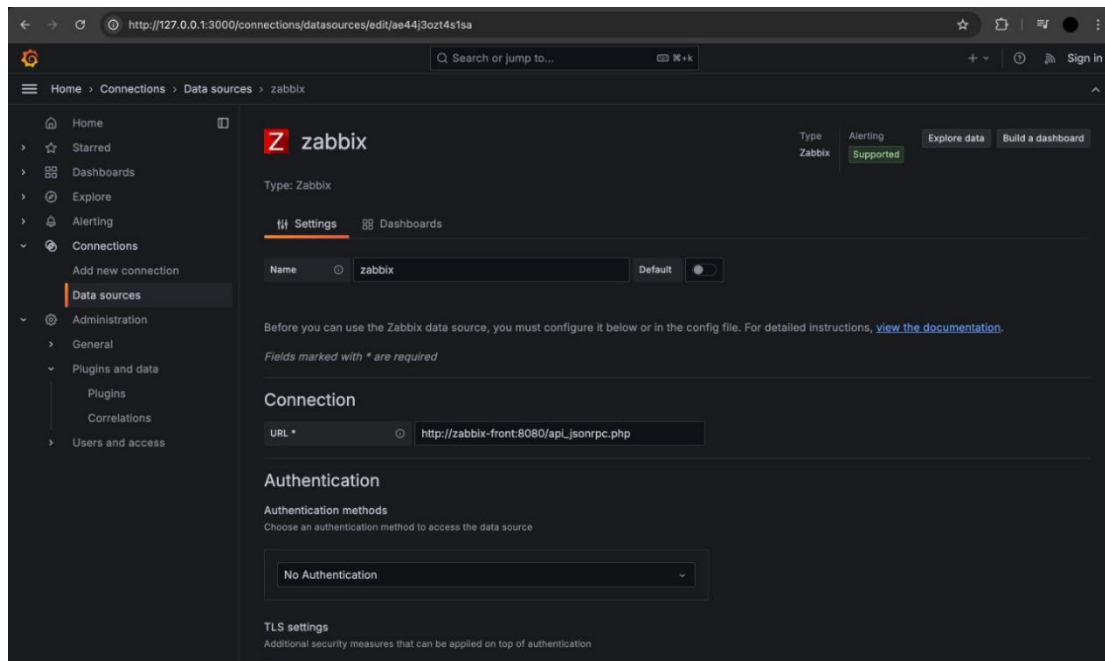
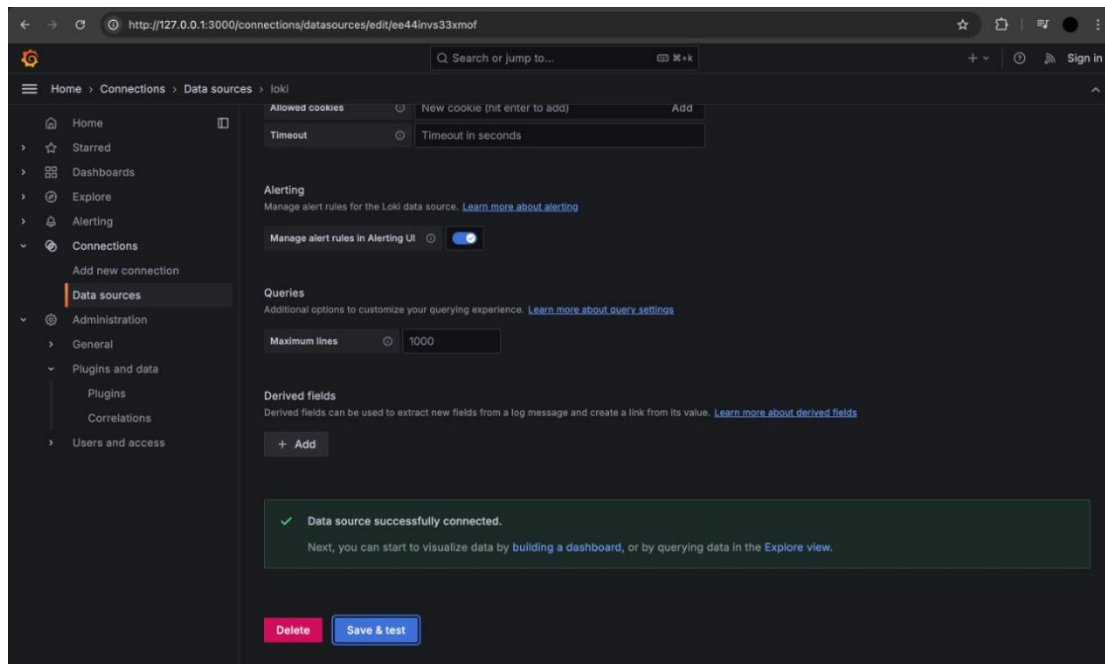
Часть 3 - Визуализация

```
Liberal@MacBook-Air-Andrej-3 lab-1 % docker exec -it grafana bash -c "grafana cli plugins install alexanderzobnin-zabbix-app"
✓ Downloaded and extracted alexanderzobnin-zabbix-app v4.5.7 zip successfully to /var/lib/grafana/plugins/alexanderzobnin-zabbix-app

Please restart Grafana after installing or removing plugins. Refer to Grafana documentation for instructions if necessary.

Liberal@MacBook-Air-Andrej-3 lab-1 % docker restart grafana
grafana
```





The screenshot displays the Grafana web interface for configuring a Zabbix data source. The left sidebar contains a navigation menu with options like Home, Starred, Dashboards, Explore, Alerting, Connections, Data sources (selected), Administration, General, Plugins and data, Correlations, and Users and access. The main panel shows the 'Data sources' configuration page for a Zabbix connection. The 'Trends' section is active, with a toggle for 'Enable Trends' set to 'On'. Below this, there are input fields for 'After' (set to '7d') and 'Range' (set to '4d'). Further down, there are sections for 'Direct DB Connection' (disabled), 'Other' (disabled), and 'Disable data alignment' (disabled). At the bottom, a green message box states 'Zabbix API version: 6.4.19' and provides instructions on how to visualize data. At the very bottom, there are 'Delete' and 'Save & test' buttons.

Home > Explore > loki

Home

Starred

Dashboards

Explore

Alerting

Connections

Add new connection

Data sources

Administration

General

Plugins and data

Plugins

Correlations

Users and access

Outline

loki

Queries

Logs

Kick start your query

Label browser

Explain query

Builder

Code

Label filters

filename = /opt/nc\_data/nextcloud.log

Line contains

Text to find

Operations

hint: add json parser

{filename="/opt/nc\_data/nextcloud.log"} |\* ''

Options


Type: Range

Line limit: 1000

+ Add query

Query Inspector

Logs volume



logs Total: 6

Logs

Table

Home > Explore > zabbix

Home

Starred

Dashboards

Explore

Alerting

Connections

Add new connection

Data sources

Administration

General

Plugins and data

Plugins

Correlations

Users and access

Outline

zabbix

Queries

Table

Query type

Text

Group

Applications

Host

nextcloud

Application

Item

Nextcloud: ping service

Text filter

Use capture groups

Options

+ Add query

Query Inspector

Table - Nextcloud: ping service

Time	Nextcloud: ping service
2024-11-16 17:02:31	healthy
2024-11-16 17:03:31	healthy
2024-11-16 17:04:31	healthy
2024-11-16 17:05:31	healthy
2024-11-16 17:06:31	healthy
2024-11-16 17:07:31	healthy
2024-11-16 17:08:31	healthy
2024-11-16 17:09:31	healthy



Q Search or jump to...

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⌚

🔔

Sign In

Home > Dashboards > Dashboard > Edit panel

Discard Save Apply

Table view

Fill

Actual

Last 6 hours

🔍

🔄

Nextcloud Status

Nextcloud is: HEALTHY

Query 1

Transform data 0

Data source

zabbix

Query options

MD = auto = 1008

Interval = 20s

Query inspector

Query type

Text

Group

Applications

Host

nextcloud

Application

Item

Nextcloud: ping service

Text filter

Use capture groups

🔍

Options

Stat

Search options

All

Overrides

Title

Nextcloud Status

Description

Transparent background

Panel links

Repeat options

Value options

Show

Calculate a single value per column or series or show each row

Calculate

All values

Calculation

Choose a reducer function / calculation

Last \*

Fields

Select the fields that should be included in the panel

Nextcloud: ping service

Q Search or jump to...

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+ ⌵

⌚

🔔

Sign In

Home &gt; Dashboards &gt; Dashboard &gt; Edit panel

Discard Save Apply

Table view

Fill

Actual

Last 6 hours

🔍

🔄

Nextcloud Status

Nextcloud is: HEALTHY

Query 1

Transform data 0

Data source

zabbix

Query options

MD = auto = 1008

Interval = 20s

Query inspector

Query type

Text

Group

Applications

Host

nextcloud

Application

Item

Nextcloud: ping service

Text filter

Use capture groups

🔍

Options

Stat

Search options

All

Overrides

Data links

Add link

Value mappings

healthy

Nextcloud is: HEALTHY

unhealthy

Nextcloud is: UNHEALTHY

Edit value mappings

Thresholds

Add threshold

Base

Thresholds mode

Percentage means thresholds relative to min & max

Absolute

Percentage

Add field override

Q Search or jump to...

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🔔

Sign In

Home &gt; Dashboards &gt; Dashboard

Add Share

Last 6 hours

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Nextcloud Status

Nextcloud is: HEALTHY

Nextcloud Logs

<pre>> { "reqId": "tb0gvJ5iPaxNq0mE1ja", "level": 3, "time": "2024-11-16T13:51:26+00:00", "remoteAddr": "172.21.0.1", "user": "--", "app": "PHP", "method": "GET", "url": "/cron.php", "message": "dns\_get\_record(> { "reqId": "BA18nIZxeENp8nIj4wZ", "level": 2, "time": "2024-11-16T13:58:49+00:00", "remoteAddr": "172.21.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host 127> { "reqId": "BA18nIZxeENp8nIj4wZ", "level": 2, "time": "2024-11-16T13:58:49+00:00", "remoteAddr": "172.21.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host 127> { "reqId": "Mas541fRtwx2G1u4Tgu", "level": 2, "time": "2024-11-16T13:58:46+00:00", "remoteAddr": "172.21.0.1", "user": "--", "app": "no app in context", "method": "PUT", "url": "/index.php", "message": "> { "reqId": "Mas541fRtwx2G1u4Tgu", "level": 2, "time": "2024-11-16T13:58:46+00:00", "remoteAddr": "172.21.0.1", "user": "--", "app": "no app in context", "method": "PUT", "url": "/index.php", "message": "> { "reqId": "BGkayDp20j1AYRPPgNFI", "level": 3, "time": "2024-11-16T13:58:46+00:00", "remoteAddr": "172.21.0.1", "user": "--", "app": "PHP", "method": "PUT", "url": "/ocs/v2.php/apps/user\_status/api/v1/h</pre>

## Ответы на вопросы:

### 1. Чем SLO отличается от SLA?

SLA - это соглашение об измеримых показателях, а SLO - это соглашение о конкретном показателе в рамках SLA (цель уровня обслуживания).

### 2. Чем отличается инкрементальный бэкап от дифференциального?

Инкрементное резервное копирование сохраняет все изменения, которые были сделаны с момента последнего резервного копирования а дифференциальное резервное копирование сохраняет изменения, что сделали с момента последнего **ПОЛНОГО** резервного копирования

### 3. В чем разница между мониторингом и observability?

Мониторинг — это процесс отслеживания поведения системы через сбор определённых метрик и событий.

Observability (наблюдаемость) — это процесс регулярной, всесторонней диагностики внутреннего состояния ИТ-системы, на основе таких данных как метрики, события, логи, трассировки и т.д.

Основная цель мониторинга — оперативно ответить на вопрос "что произошло?", а цель observability - ответить на вопросы "почему это произошло?" и "как именно это произошло?".