

Лабораторная работа №2.

Ход работы

Часть 1. Логирование

Commands to Run

```
docker compose up -d # Build/pull/start in detached mode
```

```
docker compose logs -f # Tail logs (useful for debugging Postgres issues)
```

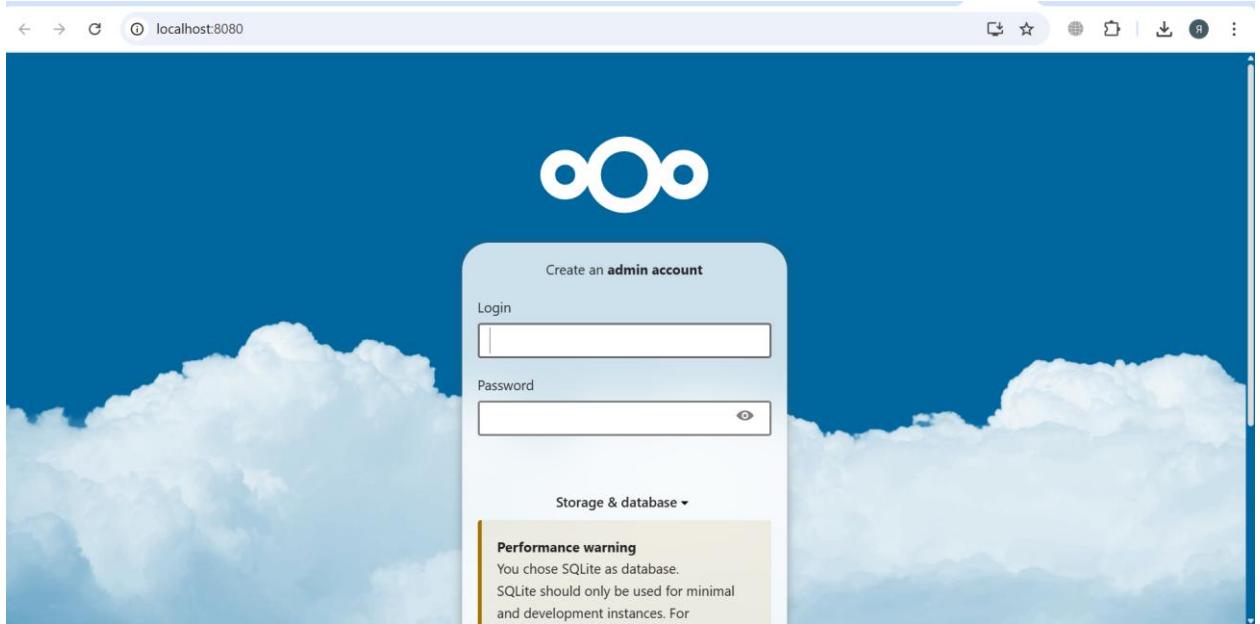
```
docker compose down -v # Stop and remove volumes (clean slate)
```

```
PS C:\Users\User1\Documents\Labworks(2025-2026)\Комп сети\lab2> docker-compose up -d
time="2025-12-20T10:10:54+03:00" level=warning msg="C:\\\\Users\\\\User1\\\\Documents\\\\Labworks(2025-2026)\\\\Комп сети\\\\lab2\\\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 76/76
  ✓ zabbix-server Pulled
  ✓ zabbix-web-nginx-pgsql Pulled
  ✓ grafana Pulled
  ✓ loki Pulled
  ✓ postgres-zabbix Pulled
  ✓ nextcloud Pulled
  ✓ promtail Pulled
[+] Running 10/10
  ✓ Network lab2_monitoring      Created          0.1s
  ✓ Volume "lab2_nc-data"        Created          0.0s
  ✓ Volume "lab2_zabbix-db"      Created          0.0s
  ✓ Container grafana            Started          1.5s
  ✓ Container loki               Started          1.6s
  ✓ Container nextcloud          Started          1.6s
  ✓ Container postgres-zabbix   Started          1.5s
  ✓ Container promtail           Started          1.2s
  ✓ Container zabbix-back       Started          1.1s
  ✓ Container zabbix-front      Started          1.1s
PS C:\Users\User1\Documents\Labworks(2025-2026)\Комп сети\lab2>
```

```
docker ps
```

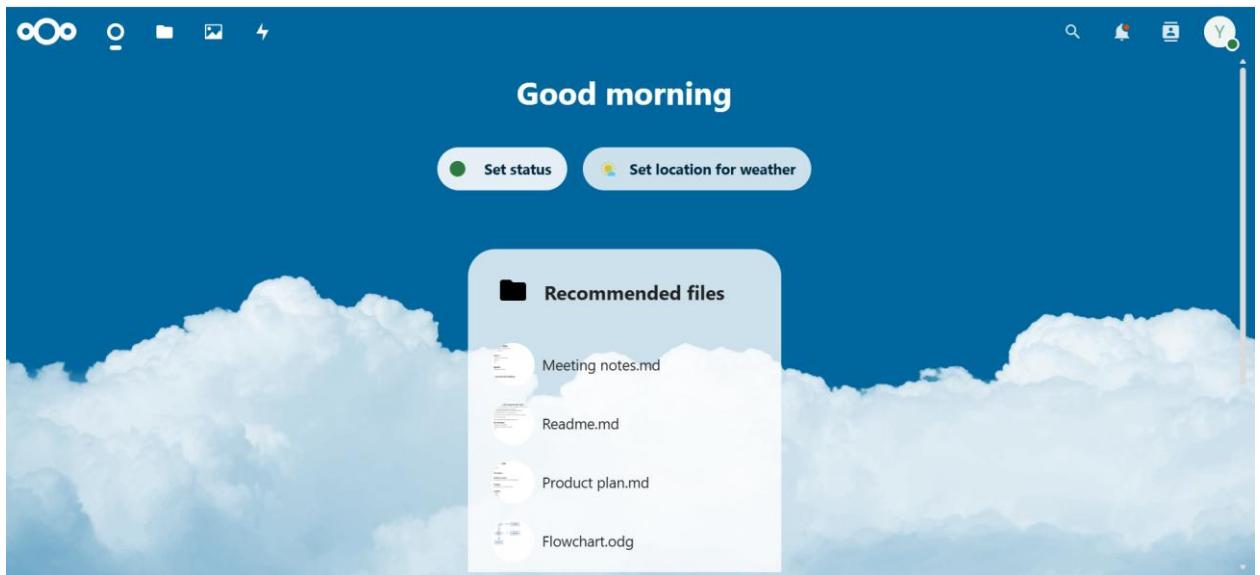
```
PS C:\Users\User1\Documents\Labworks(2025-2026)\Комп сети\lab2> docker ps
CONTAINER ID IMAGE                                NAMES                  COMMAND                CREATED             STATUS
PORTS
NAMES
6492b6ea6af7 zabbix/zabbix-web-nginx-pgsql:ubuntu-6.4-latest "docker-entrypoint.sh" About a minute ago Up About a minute (he
lthy)
lthy) 8443/tcp, 0.0.0.0:8082->8080/tcp zabbix-front
d44f4caace1d zabbix/zabbix-server-pgsql:ubuntu-6.4-latest "/usr/bin/tini -- /u..." About a minute ago Up About a minute
0.0.0.0:10051->10051/tcp zabbix-back
107b0c85109c grafana/promtail:2.9.0
promtail
299fd62c248c grafana/grafana:11.2.0
0.0.0.0:3000->3000/tcp grafana
1d3c9153a336 nextcloud:29.0.6
0.0.0.0:8080->80/tcp nextcloud
69facaadd989 grafana/loki:2.9.0
0.0.0.0:3100->3100/tcp loki
7afb4cde54c3 postgres:15
lthy) 5432/tcp
d1d2b8139d6b yriy-backend
0.0.0.0:8000->8000/tcp yriy-backend-1
ef44d70b02fa postgres:14
0.0.0.0:5431->5432/tcp yriy-db-1
PS C:\Users\User1\Documents\Labworks(2025-2026)\Комп сети\lab2> |
```

Заходим в контейнеры и переходим по ссылке на порт 8080:



Успешно отображается веб-страница в браузере.

Создан админский аккаунт:



Получилось посмотреть, что после подключения логи пошли в файл

/var/www/html/data/nextcloud.log

docker exec -it nextcloud tail -f /var/www/html/data/nextcloud.log

```

Командная строка - docker <--> + <-->
C:\Users\User1>docker exec -it nextcloud tail -f /var/www/html/data/nextcloud.log
[{"reqId":"KKp0dK1oYHLPw7Q6qP0c","level":2,"time":"2025-12-20T07:31:21+00:00","remoteAddr":"172.22.0.1","user":"","app":"no app in context","method":"GET","url":"/","message":"Host localhost was not connected to because it violates local access rules","userAgent":"Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36","version":"","data":[]}
[{"reqId":"KKp0dK1oYHLPw7Q6qP0c","level":2,"time":"2025-12-20T07:31:21+00:00","remoteAddr":"172.22.0.1","user":"","app":"no app in context","method":"GET","url":"/","message":"Host localhost was not connected to because it violates local access rules","userAgent":"Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36","version":"","data":[]}
[{"reqId":"KKp0dK1oYHLPw7Q6qP0c","level":3,"time":"2025-12-20T07:31:21+00:00","remoteAddr":"172.22.0.1","user":"","app":"PHP","method":"GET","url":"/","message":"fopen(/var/www/html/config/config.php): Failed to open stream: No such file or directory at /var/www/html/lib/private/Config.php#221","userAgent":"Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36","version":"","data":{"app":"PHP"}}
[{"reqId":"4TzcXKPYq6h2RULKSOVX","level":2,"time":"2025-12-20T07:33:23+00:00","remoteAddr":"172.22.0.1","user":"","app":"no app in context","method":"POST","url":"/","message":"Host localhost was not connected to because it violates local access rules","userAgent":"Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36","version":"","data":[]}
[{"reqId":"4TzcXKPYq6h2RULKSOVX","level":2,"time":"2025-12-20T07:33:23+00:00","remoteAddr":"172.22.0.1","user":"","app":"no app in context","method":"POST","url":"/","message":"Host localhost was not connected to because it violates local access rules","userAgent":"Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36","version":"","data":[]}
[{"reqId":"CPqJ49lsp4WNj9l3DPxz","level":2,"time":"2025-12-20T07:34:34+00:00","remoteAddr":"172.22.0.1","user":"Yaroslavan","app":"app storeFetcher","method":"GET","url":"/settings/apps/list","message":"Could not connect to appstore: cURL error 28: Connection timed out after 60001 milliseconds (see https://curl.haxx.se/libcurl/c/libcurl-errors.html) for https://apps.nextcloud.com/api/v1/apps.json","userAgent":"Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36","version":"29.0.6.1","data":{"app":"appstoreFetcher"}}
[{"reqId":"CPqJ49lsp4WNj9l3DPxz","level":2,"time":"2025-12-20T07:34:34+00:00","remoteAddr":"172.22.0.1","user":"Yaroslavan","app":"app storeFetcher","method":"GET","url":"/settings/apps/list","message":"Could not get apps from the appstore","userAgent":"Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36","version":"29.0.6.1","data":{"app":"appstoreFetcher"}}

```

Найдем файл с логами среди подключенных:

docker logs -f promtail

```

level=info ts=2025-12-29T14:16:47.209262281Z caller=server.go:322 http=[::]:9080 grpc=[::]:41947 msg="server listening on addresses"
level=info ts=2025-12-29T14:16:47.217413017Z caller=main.go:174 msg="Starting Promtail" version="(version=2.9.0, branch=HEAD, revision=2fe864f69)"
level=warn ts=2025-12-29T14:16:47.217793439Z caller=promtail.go:263 msg="enable watchConfig"
level=info ts=2025-12-29T14:16:52.208854918Z caller=filetargetmanager.go:361 msg="Adding target" key="/opt/nc_data/*.log:{job=\\"nextcloud_logs\\"}"
level=info ts=2025-12-29T14:16:52.209041757Z caller=filetarget.go:313 msg="watching new directory" directory=/opt/nc_data
ts=2025-12-29T14:16:52.209196839Z caller=log.go:168 level=info msg="Seeked /opt/nc_data/nextcloud.log - &{Offset:3492 Whence:0}"
level=info ts=2025-12-29T14:16:52.209216018Z caller=tailer.go:145 component=tailer msg="tail routine started" path=/opt/nc_data/nextcloud.log
level=info ts=2025-12-29T14:17:12.097404533Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2025-12-29T14:17:12.097474876Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level=info ts=2025-12-29T14:17:12.600390658Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2025-12-29T14:17:12.600424453Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE

```

docker exec nextcloud ls -la /var/www/html/data/nextcloud.log

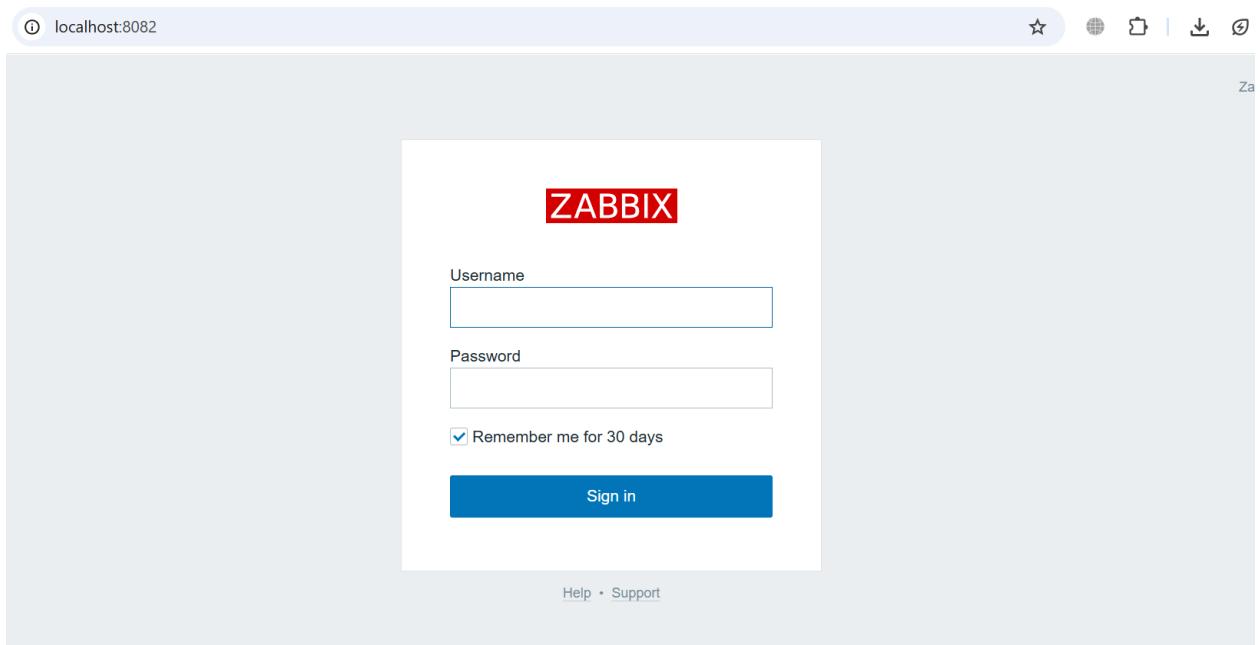
```

PS C:\Users\User1\Documents\Labworks(2025-2026)\Комп сети\lab2_2> docker exec nextcloud ls -la /var/www/html/data/nextcloud.log
-rw-r----- 1 www-data www-data 6260 Jan  8 16:14 /var/www/html/data/nextcloud.log
PS C:\Users\User1\Documents\Labworks(2025-2026)\Комп сети\lab2_2> |

```

Часть 2. Мониторинг

Настраиваем Zabbix: <https://localhost:8082>



Пользователь Admin, пароль Zabbix – вводим для входа, произошла успешная авторизация.
Делаем импорт шаблона:

Import

* Import file Выберите файл template.yml

Advanced options

Rules

Update existing Create new Delete missing

All

Import Cancel

Apply Reset

Templates

Imported successfully

Разрешаем короткие именами в некстклауде:

```
docker exec -u www-data -it nextcloud bash  
php occ config:system:set trusted_domains 1 --value="nextcloud"
```

```
C:\Users\User1>docker exec -u www-data -it nextcloud bash  
www-data@1d3c9153a336:~/html$ php occ config:system:set trusted_domains 1 --value="nextcloud"  
System config value trusted_domains => 1 set to string nextcloud  
www-data@1d3c9153a336:~/html$ |
```

Создаем хост в Zabbix со следующими настройками:

The screenshot shows the 'New host' configuration dialog in Zabbix 6.4.21. The 'Host' tab is selected. The host name is set to 'nextcloud'. Under 'Visible name', it says 'Nextcloud App'. A template named 'Test ping template' is assigned. The 'Host groups' section contains 'Applications'. The 'Interfaces' section is empty. The 'Description' field is empty. The 'Monitored by proxy' dropdown is set to '(no proxy)'. The 'Enabled' checkbox is checked. At the bottom right are 'Add' and 'Cancel' buttons.

Hosts

A green success message box is displayed with a checkmark icon and the text 'Host added'.

Перейдем в отдел мониторинга последних данных

The screenshot shows the 'Latest data' monitoring interface. The left sidebar has 'Monitoring' selected. In the main area, 'HOSTS' shows 'Nextcloud 1 | Zabbix server 104'. Under 'TAGS', 'component' is listed with a value of 104. Under 'TAG VALUES', there are several entries including 'component: application 1'. Under 'DATA', 'With data' is selected. At the bottom are 'Save as', 'Apply', and 'Reset' buttons.

Переменная healthy

The screenshot shows the 'Latest data' monitoring interface. The left sidebar has 'Monitoring' selected. In the main area, 'HOSTS' shows 'Nextcloud App | Zabbix server 104'. Under 'TAGS', 'component' is listed with a value of 104. Under 'TAG VALUES', there are several entries including 'component: application 1'. Under 'DATA', 'With data' is selected. A table lists various metrics from the Zabbix server, all showing a 'Last value' of 'healthy'. The table includes columns for Host, Name, Last check, Last value, Change, and Tags. At the bottom right are 'History', 'Graph', and 'Info' buttons.

```

Включим в некстклауде maintenance mode
dash: $ ``\320\262``: command not found
www-data@1d3c9153a336:~/html$ php occ maintenance:mode --on
Maintenance mode enabled
www-data@1d3c9153a336:~/html$ exit
exit

What's next:
Try Docker Debug for seamless, persistent debugging tools in any container or image → docker debug nextcloud
Learn more at https://docs.docker.com/go/debug-cli/

```

C:\Users\User1>

Появилось сообщение про проблему в Zabbix

The screenshot shows the Zabbix monitoring interface under the 'Monitoring' section. On the left, there's a sidebar with various navigation options like Dashboards, Monitoring, Services, Inventory, Reports, Data collection, Alerts, Users, and Administration. The main area is titled 'Problems' and displays a single problem entry:

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Update	Actions	Tags
18.12.31	Disaster		PROBLEM		Nextcloud	Nextcloud is in maintenance mode	23s	Update		

Below the table, it says 'Displaying 2 of 2 found'.

```

C:\Users\User1>curl http://localhost:8080/status.php
{"installed":true,"maintenance":true,"needsDbUpgrade":false,"version":"29.0.6.1","versionstring":"29.0.6","edition":"",
", "productname":"Nextcloud","extendedSupport":false}
C:\Users\User1>

```

Затем выключим режим:

```

www-data@1d3c9153a336:~/html$ php occ maintenance:mode --off
Maintenance mode disabled
www-data@1d3c9153a336:~/html$ |

```

И посмотрим мониторинг проблем:

The screenshot shows the Zabbix monitoring interface under the 'Monitoring' section. The 'Problems' table is empty, indicating that maintenance mode has been disabled.

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Update	Actions	Tags
18.12.31	Disaster	18.16.31	RESOLVED		Nextcloud	Nextcloud is in maintenance mode	4m	Update		

Часть 3. Визуализация

В терминале выполним команды

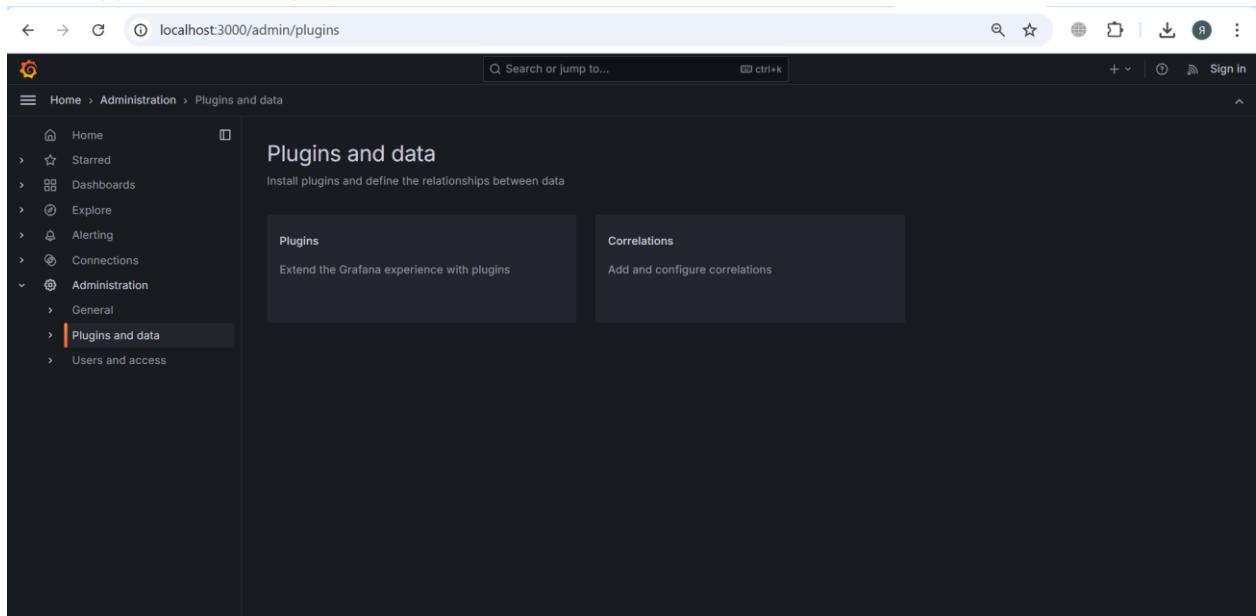
```
docker exec -it grafana bash -c "grafana cli plugins install alexanderzobnin-zabbix-app"  
docker restart grafana
```

```
C:\Users\User1>docker exec -it grafana bash -c "grafana cli plugins install alexanderzobnin-zabbix-app"  
✓ Downloaded and extracted alexanderzobnin-zabbix-app v6.0.3 zip successfully to /var/lib/grafana/plugins/alexanderzo  
bnin-zabbix-app  
  
Please restart Grafana after installing or removing plugins. Refer to Grafana documentation for instructions if neces  
sary.
```

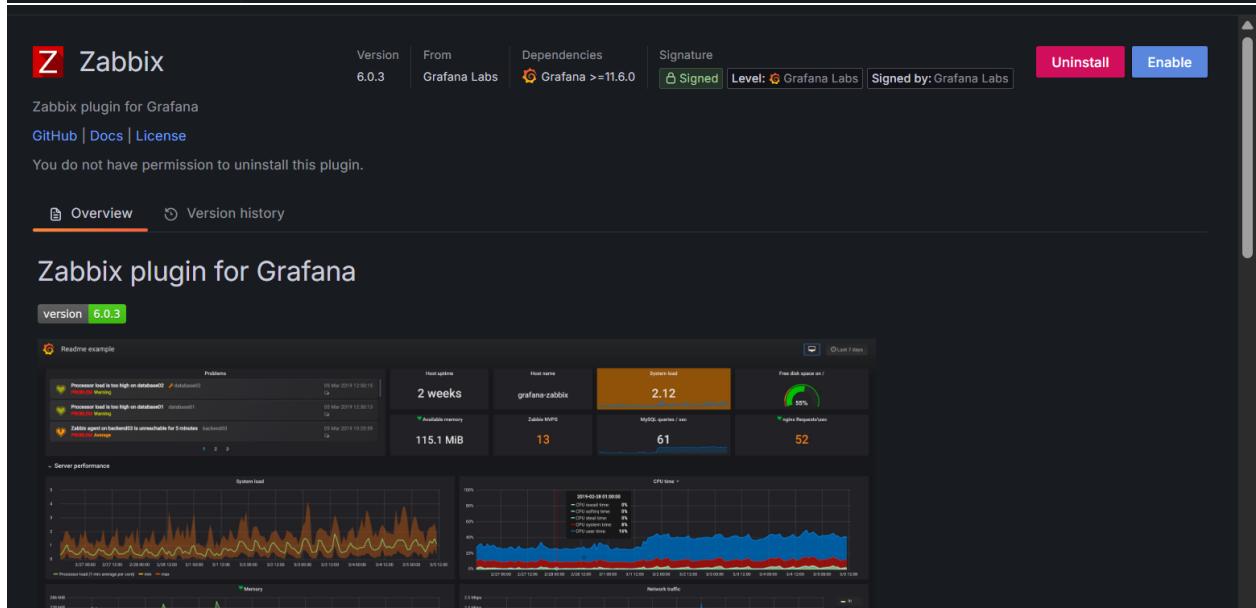
```
C:\Users\User1>docker restart grafana  
grafana
```

```
C:\Users\User1>
```

Активируем Zabbix в графане



The screenshot shows the Grafana Admin interface with the URL `localhost:3000/admin/plugins`. The left sidebar is open, showing navigation options like Home, Starred, Dashboards, Explore, Alerting, Connections, Administration (which is selected), General, Plugins and data (which is also selected), and Users and access. The main content area is titled "Plugins and data" with the sub-instruction "Install plugins and define the relationships between data". It contains two sections: "Plugins" and "Correlations". The "Plugins" section has a sub-instruction "Extend the Grafana experience with plugins". The "Correlations" section has a sub-instruction "Add and configure correlations".



The screenshot shows the Grafana plugin store page for the Zabbix plugin. At the top, it displays the plugin's name "Zabbix", version "6.0.3", provider "Grafana Labs", dependencies "Grafana >=11.6.0", and a "Signed" status. There are "Uninstall" and "Enable" buttons. Below this, there is a link to the GitHub repository and a note that the user does not have permission to uninstall the plugin. The main content area shows the "Overview" tab selected, displaying a dashboard preview with various metrics and graphs. The preview includes sections for "Problems", "Host status", "Host stats", and "System load".

Подключаем Loki к Grafana

A screenshot of the Grafana interface showing the 'Data sources' configuration for a 'Loki' type connection named 'Asgaard'. The URL is set to `http://loki:3100`. The 'Alerting Supported' button is highlighted in green.

Изменено имя, url connection: `https://loki:3100`

Выполняем save&test и соединение установлено:

A success message from Grafana stating: "Data source successfully connected. Next, you can start to visualize data by [building a dashboard](#), or by querying data in the [Explore view](#)".

Подключаем новый дата сурс Zabbix

`http://zabbix-front:8080/api_jsonrpc.php`

A screenshot of the Grafana interface showing the 'Data sources' configuration for a 'Zabbix' type connection named 'my-zabbix-datasource'. The URL is set to `http://zabbix-front:8080/api_jsonrpc.php`. The 'Alerting Supported' button is highlighted in green.

Соединение также установлено:

A success message from Grafana stating: "Zabbix API version: 6.4.21. Next, you can start to visualize data by [building a dashboard](#), or by querying data in the [Explore view](#)".

Explore Логи Loki

The screenshot shows the Grafana Loki Explore interface. On the left, there's a sidebar with navigation links like Home, Starred, Dashboards, Explore (which is selected), Metrics, Alerting, Connections, Administration, Plugins and data, and Users and access. The main area has tabs for Outline and loki. A search bar at the top says "Search or jump to...". Below it, there's a "Label filters" section with a dropdown for "job" set to "nextcloud_logs". Underneath is a "Line contains" input field with "Text to find" empty. The query editor shows the text: `(job="nextcloud_logs") |= ``. Below the editor are "Add query" and "Query inspector" buttons. The result panel at the bottom says "No data".

После некоторых изменений в исходном файле для конфигурации логов в promtail (с подключением loki возникли ошибки на уровне чтения логов через promtail), он был презапущен

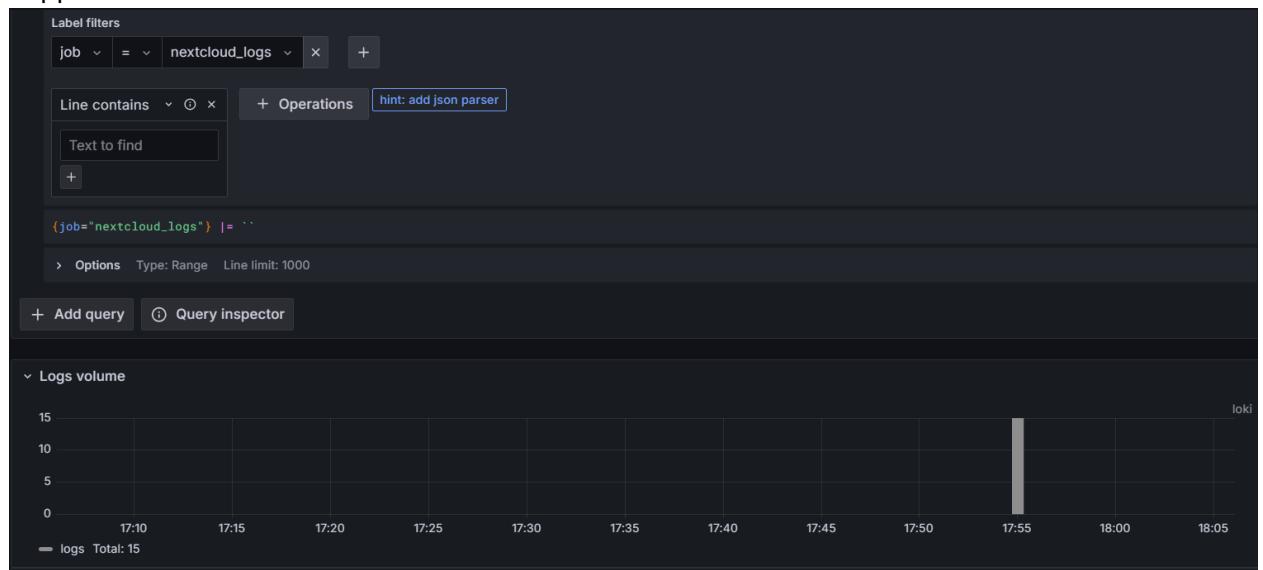
docker-compose down promtail

docker-compose up -d promtail

docker-compose logs promtail

curl "<http://localhost:3100/loki/api/v1/labels>"

Далее для корректной работы всех подключений было необходимо немного подождать (Loki/Promtail работают асинхронно), после чего логи в графана стали отображаться корректно:



Time Unique labels Wrap lines Pretty JSON Deduplication None Exact Numbers Signature

Display results Newest first Oldest first

Common labels: job=nextcloud_logs Line limit: 1000 (15 displayed) Total bytes processed: 6.25 kB

```
> 2026-01-10 17:54:05.826 {"reqId": "qCwriugNjJlgCidFAGsR", "level": 2, "time": "2026-01-08T16:14:52+00:00", "remoteAddr": "172.22.0.1", "user": "", "app": "no app in context", "method": "POST", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-10 17:54:05.826 {"reqId": "qCwriugNjJlgCidFAGsR", "level": 2, "time": "2026-01-08T16:14:52+00:00", "remoteAddr": "172.22.0.1", "user": "", "app": "no app in context", "method": "POST", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-10 17:54:05.826 {"reqId": "qCwriugNjJlgCidFAGsR", "level": 2, "time": "2026-01-08T16:14:52+00:00", "remoteAddr": "172.22.0.1", "user": "", "app": "no app in context", "method": "GET", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-10 17:54:05.826 {"reqId": "qCwriugNjJlgCidFAGsR", "level": 2, "time": "2026-01-08T16:14:52+00:00", "remoteAddr": "172.22.0.1", "user": "", "app": "no app in context", "method": "GET", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-10 17:54:05.826 {"reqId": "JTpo93spy0NFZ8IRoRym", "level": 2, "time": "2026-01-08T16:14:04+00:00", "remoteAddr": "172.22.0.1", "user": "", "app": "no app in context", "method": "GET", "url": "/index.php", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-10 17:54:05.826 {"reqId": "JTpo93spy0NFZ8IRoRym", "level": 2, "time": "2026-01-08T16:14:04+00:00", "remoteAddr": "172.22.0.1", "user": "", "app": "no app in context", "method": "GET", "url": "/index.php", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
```

Логи Zabbix

Outline Z my-zabbix-datasource

A (my-zabbix-datasource)

Query type	Text		
Group	Applications	Host	Nextcloud
Application		Item	Nextcloud: ping service
Text filter		Use capture groups <input type="checkbox"/>	

+ Add query Query history Query inspector

Table - Nextcloud: ping service

Time	Nextcloud: ping service
2025-12-29 23:58:03	healthy
2025-12-30 00:15:15	healthy
2025-12-30 00:15:31	healthy
2025-12-30 00:16:31	healthy
2025-12-30 00:17:31	healthy
2025-12-30 00:18:31	healthy

Outline Z alexanderzobnin-zabbix-data

A (alexanderzobnin-zabbix-data)

Query type	Text		
Group	Applications	Host	Nextcloud App
Application		Item	Nextcloud: ping service
Text filter		Use capture groups <input type="checkbox"/>	

+ Add query Query inspector

Table - Nextcloud: ping service

Time	Nextcloud: ping service
2026-01-08 19:24:31	healthy
2026-01-08 19:25:31	healthy
2026-01-08 19:26:31	healthy
2026-01-08 19:27:31	healthy
2026-01-08 19:28:31	healthy
2026-01-08 19:29:31	healthy

Задание

1. Сделаем несколько разных запросов

Укажем поиск по конкретному слову в логах

The screenshot shows the Loki interface with a search bar containing the query `(job="nextcloud_logs") |= 'local'`. The results section displays a single log entry from January 11, 2026, at 13:10:11. The log message indicates that a connection to localhost was denied due to local access rules.

```
> 2026-01-11 13:10:11.331 {"reqId": "tzujj70hcvczdcJ5RI709", "level": 2, "time": "2026-01-11T10:10:11+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host [local]host was not connected to because it violates [local] access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
```

Найдены интересующие логи

The screenshot shows the Loki interface displaying multiple log entries for 'local' access violations. The logs are listed in newest first order, with a total of 1000 lines processed. Each log entry includes timestamp, request ID, level, time, remote address, user, application, method, URL, message, user agent, version, and data.

```
> 2026-01-11 13:10:11.331 {"reqId": "tzujj70hcvczdcJ5RI709", "level": 2, "time": "2026-01-11T10:10:11+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host [local]host was not connected to because it violates [local] access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-11 13:10:11.331 {"reqId": "tzujj70hcvczdcJ5RI709", "level": 2, "time": "2026-01-11T10:10:11+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host [local]host was not connected to because it violates [local] access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-11 13:10:10.327 {"reqId": "jI5WbID0jEyrTVaXtLYv", "level": 2, "time": "2026-01-11T10:10:09+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/", "message": "Host [local]host was not connected to because it violates [local] access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-11 13:10:10.327 {"reqId": "jI5WbID0jEyrTVaXtLYv", "level": 2, "time": "2026-01-11T10:10:09+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/", "message": "Host [local]host was not connected to because it violates [local] access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-11 13:10:10.326 {"reqId": "CgPIr718KBsLEUJ0HHT4", "level": 2, "time": "2026-01-11T10:10:08+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/index.php", "message": "Host [local]host was not connected to because it violates [local] access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-11 13:10:10.326 {"reqId": "CgPIr718KBsLEUJ0HHT4", "level": 2, "time": "2026-01-11T10:10:08+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/index.php", "message": "Host [local]host was not connected to because it violates [local] access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
```

При помощи встроенного языка LogQL сконструируем запрос для просмотра ошибок в логах (ошибки обозначаются кодом 3):

Получим в результате два лога с сообщением об ошибках:

Посмотрим остальные сообщения:

Screenshot of the Loki UI showing a query editor and a log viewer.

Query Editor:

- Job: nextcloud_logs
- Filter: Line contains "Text to find" (empty), Json < level < 3, Label filter expression < level < 3, No pipeline errors.
- Result: `{job="nextcloud_logs"} |= `` | json | level < 3 | __error__=```
- Options: Type: Range, Line limit: 1000.

Logs volume: A chart showing log volume over time, with a single purple bar at 13:10 labeled "loki" reaching a height of 10.

Log Viewer:

- Logs tab selected.
- Time: Newest first.
- Labels: app=no app in context job=nextcloud_logs message=Host localhost was not connected to because it violates local access rules userAgent=Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36 version="" data:[]
- Line limit: 1000 (10 displayed).
- Common labels: app=no app in context job=nextcloud_logs message=Host localhost was not connected to because it violates local access rules userAgent=Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36 version="" data:[]
- Download button.

```
> 2026-01-11 13:10:11.331 {"reqId": "tzujj70hcvzdcJ5RI709", "level": 2, "time": "2026-01-11T10:10:11+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-11 13:10:11.331 {"reqId": "tzujj70hcvzdcJ5RI709", "level": 2, "time": "2026-01-11T10:10:11+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-11 13:10:10.327 {"reqId": "jI5WbID0jEyrTVaX1LYv", "level": 2, "time": "2026-01-11T10:10:09+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-11 13:10:10.327 {"reqId": "jI5WbID0jEyrTVaX1LYv", "level": 2, "time": "2026-01-11T10:10:09+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
> 2026-01-11 13:10:10.326 {"reqId": "CgPir7i8KbsLEUJOHHT4", "level": 2, "time": "2026-01-11T10:10:09+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/index.php", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}
```

2. На основе данного запроса создадим дашборд

Вид “table”

Screenshot of Grafana showing a dashboard panel in table view.

Panel Headers:

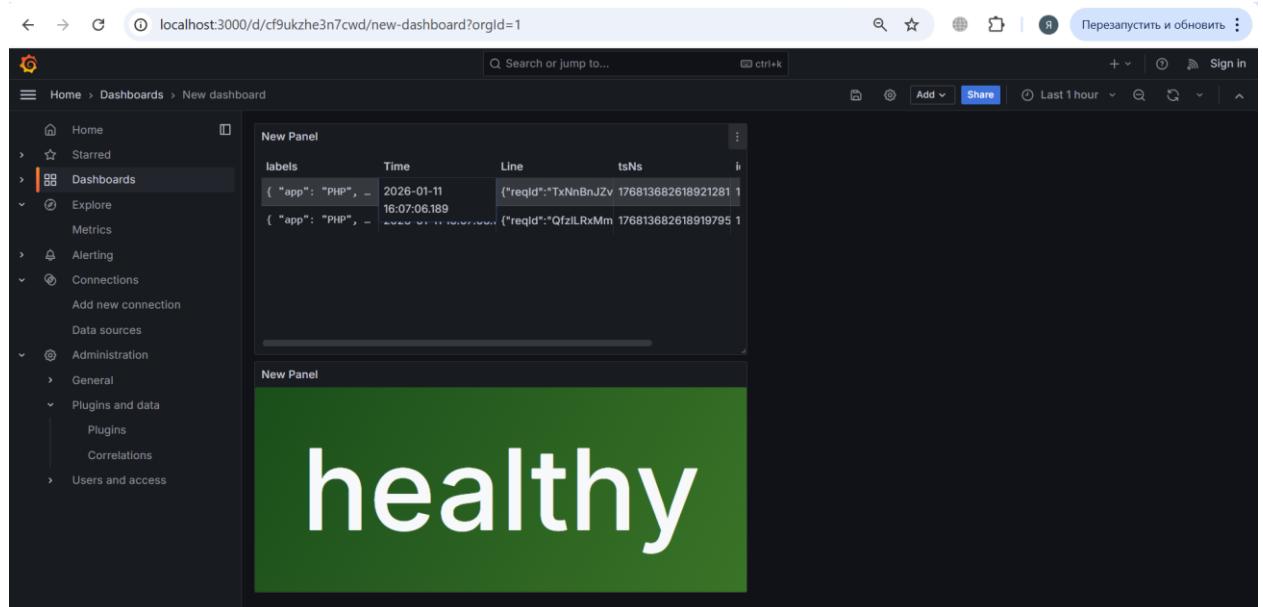
- Home > Dashboards > New dashboard > View panel
- Search or jump to... (ctrl+k)
- Last 3 hours

Panel Content:

labels	Time	Line	tsNs	id
{"app": "no app in context"}	2026-01-11 13:10:10.326	{"reqId": "vkDGHU9kBd6hbH3nvON", "time": "2026-01-11T10:10:10+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126210326971767_c0667e87	
{"app": "no app in context"}	2026-01-11 13:10:10.326	{"reqId": "vkDGHU9kBd6hbH3nvON", "time": "2026-01-11T10:10:10+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126210326969078_c0667e87	
{"app": "no app in context"}	2026-01-11 13:10:10.326	{"reqId": "IBBHf1BVkX1YIP2cjnG", "time": "2026-01-11T10:10:10+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126210326978247_27bd7889	
{"app": "no app in context"}	2026-01-11 13:10:10.326	{"reqId": "IBBHf1BVkX1YIP2cjnG", "time": "2026-01-11T10:10:10+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126210326974855_27bd7889	
{"app": "no app in context"}	2026-01-11 13:10:11.331	{"reqId": "tzujj70hcvzdcJ5RI709", "time": "2026-01-11T10:10:11+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126211331704811_bb9955e1	
{"app": "no app in context"}	2026-01-11 13:10:11.331	{"reqId": "tzujj70hcvzdcJ5RI709", "time": "2026-01-11T10:10:11+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "POST", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126211331702254_bb9955e1	
{"app": "no app in context"}	2026-01-11 13:10:10.327	{"reqId": "jI5WbID0jEyrTVaX1LYv", "time": "2026-01-11T10:10:10+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126210327180439_8686655f	
{"app": "no app in context"}	2026-01-11 13:10:10.327	{"reqId": "jI5WbID0jEyrTVaX1LYv", "time": "2026-01-11T10:10:10+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126210327055746_8686655f	
{"app": "no app in context"}	2026-01-11 13:10:10.326	{"reqId": "CgPir7i8KbsLEUJOHHT4", "time": "2026-01-11T10:10:10+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/index.php", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126210326998642_66204235	
{"app": "no app in context"}	2026-01-11 13:10:10.326	{"reqId": "CgPir7i8KbsLEUJOHHT4", "time": "2026-01-11T10:10:10+00:00", "remoteAddr": "172.22.0.1", "user": "--", "app": "no app in context", "method": "GET", "url": "/index.php", "message": "Host localhost was not connected to because it violates local access rules", "userAgent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0 Safari/537.36", "version": "", "data": []}	1768126210326995358_66204235	

Аналогично для Zabbix на основе запроса был добавлен дашборд. В настройках отображения был выбран вид stat, затем изменено значение по дефолту на Nextcloud: ping service, установлены значения для mapping на отображения цвета фона дашборда: зеленый – healthy, красный – unhealthy.

Итоговый вид дашбордов: сначала в виде таблицы выводятся логи со статусами ошибок, затем показан при помощи цвета статус healthy.

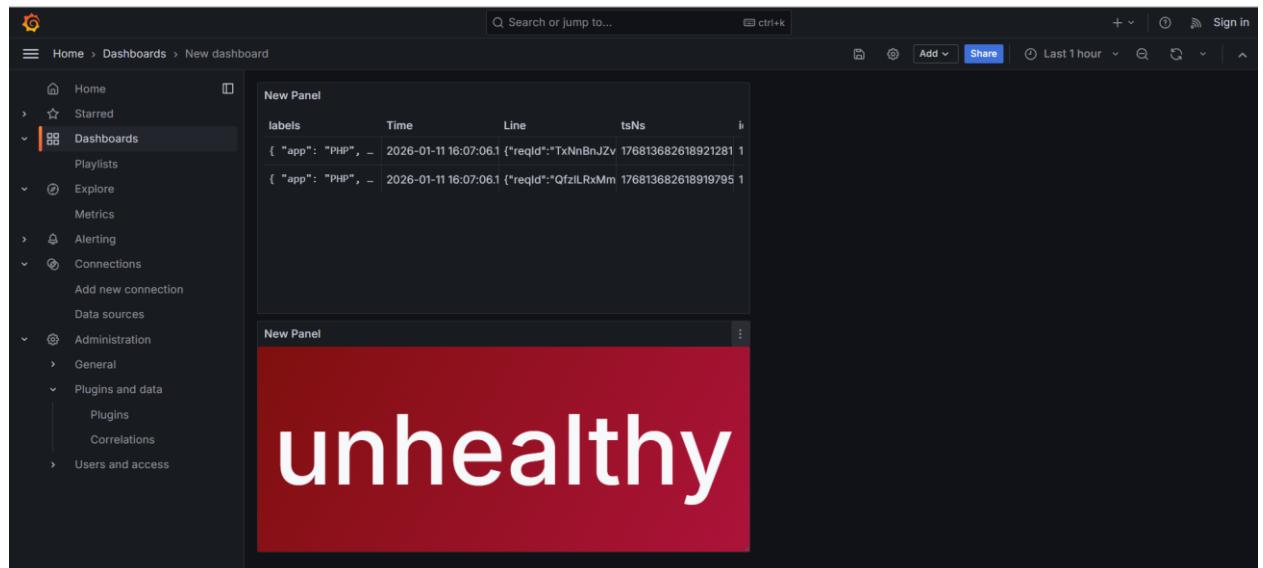


The screenshot shows a Grafana dashboard titled "New dashboard". On the left, there's a sidebar with navigation links like Home, Starred, Dashboards, Explore, Metrics, Alerting, Connections, Administration, General, Plugins and data, and Users and access. The main area has two panels. The top panel is a "New Panel" showing log entries with columns for labels, Time, Line, and tsNs. Two entries are visible: one for "TxNnBnJZv" and another for "QfzILRxMm". The bottom panel is also a "New Panel" with a large green background and the word "healthy" written in white.

Включим maintenance mode:

```
docker exec -u www-data nextcloud php occ maintenance:mode --on
```

Получаем сразу визуальное обновление статуса:



This screenshot shows the same Grafana dashboard as the previous one, but the status has changed. The bottom panel now has a red background and the word "unhealthy" written in white. The rest of the interface remains the same, with the sidebar and the log entries in the top panel.

Вопросы

1. Чем SLO отличается от SLA?

SLA (Service Level Agreement) – это договор между поставщиком сервиса и пользователем о том, какие условия для данного сервиса гарантируются.

SLO (Service Level Objective) – это внутренние условия, которые вы, как разработчики сервиса ставите, чтобы выполнять **SLA**. Устанавливается некий показатель, по которому можно будет считать, что сервис работает исправно, именно этот показатель мониторит Zabbix и визуализируется в Grafana.

2. Чем отличается инкрементальный бэкап от дифференциального?

Оба типа бэкапов создают резервные копии изменённых данных. Основные отличия: инкрементальный всегда сохраняет изменения от последней резервной версии (не важно полная она или инкрементальная), а дифференциальный хранит все изменения с момента последнего полного бэкапа. Соответственно, для первого варианта необходимо меньше места, однако в случае восстановления нужно будет потратить время на восстановление данных, чтобы добавить к последней резервной версии всю последовательность изменений. Для дифференциального при восстановлении данных можно взять только полную версию и последний бэкап.

3. В чем разница между мониторингом и observability?

Цель мониторинга заключается в отслеживании известных метрик для выявления проблем в системе. При этом используются заранее заданные триггеры, которые срабатывают при невыполнении определенных условий.

Observability – это подход, при котором целью является выявление причин проблемы. При этом используются детальные данные: логи, метрики, что помогает разобраться в существующей поломке.