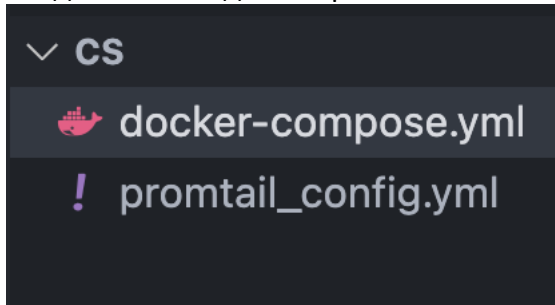


Выполнили: Скирляк Ярослав, Григорьев Алексей, Гафаров Данил

Часть 1:

1. Создали необходимые файлы



2. Подняли контейнер

	cs	Running (7/7)	7.49%	13 minutes ago			
	grafana	grafana/grafana:11.2.0	Running	0.08%	3000:3000	13 minutes ago	
	loki	grafana/loki:2.9.0	Running	0.84%	3100:3100	13 minutes ago	
	nextcloud	nextcloud:29.0.6	Running	0.01%	8080:80	13 minutes ago	
	postgres-zabbix	postgres:15	Running	5.36%		13 minutes ago	
	promtail	grafana/promtail:2.9.0	Running	0.28%		13 minutes ago	
	zabbix-back	zabbix/zabbix-server-pgsql/ubuntu	Running	0.74%	10051:10051	13 minutes ago	
	zabbix-front	zabbix/zabbix-web-nginx-pgsql/ubi	Running	0.18%	8082:8080	13 minutes ago	

Showing 11 items

3. Инициализируем Nextcloud. Для этого заходим на веб интерфейс через внешний порт, указанный в compose файле, создаем учетку и проверяем, что логи “пошли” в нужный нам файл /var/www/html/data/nextcloud.log

```
root@0801adb79ac8:/var/www/html# ls
3rdparty  apps  config  cron.php  dist  lib  nextcloud-init-sync.lock  ocs  package.json  resources  themes
AUTHORS  composer.json  console.php  data  index.php  occ  ocs-provider  public.php  robots.txt  version.php
COPYING  composer.lock  core  index.php  occ  package-lock.json  remote.php  status.php

root@0801adb79ac8:/var/www/html# cd data
root@0801adb79ac8:/var/www/html/data# ls
appdata_ock8x5offly  appdata_ockddu4furti  index.html  nextcloud.log  owncloud.db  skirlyak2004@mail.ru  skirlyak2004yaros@mail.ru

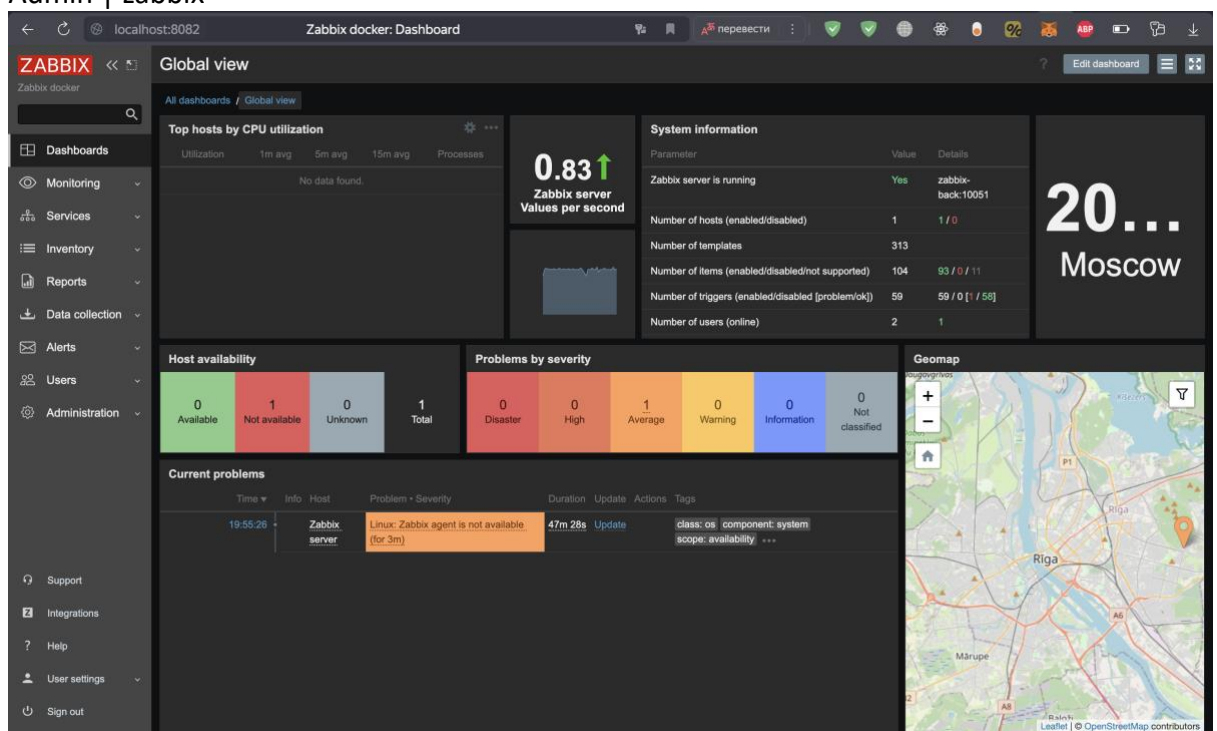
root@0801adb79ac8:/var/www/html/data# cat nextcloud.log
{"reqId":"C8Tf2x6oYt1t18JQVz07","level":2,"time":"2024-10-18T17:05:23+00:00","remoteAddr":"192.168.65.1","user":"","app":"no app in context","method":"GET","url":"/","message":"Host localh
ost was not connected to because it violates local access rules","userAgent":"Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/126.0.0.0 YaBrowse
r/24.7.0.0 Safari/537.36","version":"","data":{}}
{"reqId":"C8Tf2x6oYt1t18JQVz07","level":2,"time":"2024-10-18T17:05:23+00:00","remoteAddr":"192.168.65.1","user":"","app":"no app in context","method":"GET","url":"/","message":"Host localh
ost was not connected to because it violates local access rules","userAgent":"Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/126.0.0.0 YaBrowse
r/24.7.0.0 Safari/537.36","version":"","data":{}}
{"reqId":"C8Tf2x6oYt1t18JQVz07","level":3,"time":"2024-10-18T17:05:24+00:00","remoteAddr":"192.168.65.1","user":"","app":"PHP","method":"GET","url":"/","message":"fopen(/var/www/html/confi
g/config.php): Failed to open stream: No such file or directory at /var/www/html/lib/private/Config.php#221","userAgent":"Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (
KHTML, like Gecko) Chrome/126.0.0.0 YaBrowser/24.7.0.0 Safari/537.36","version":"","data":{"app":"PHP"}}
{"reqId":"G8S4eq0KxqWRtnOt6XX","level":2,"time":"2024-10-18T17:06:42+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/126.0.0.0 YaBrows
er/24.7.0.0 Safari/537.36","version":"","data":{}}
{"reqId":"G8S4eq0KxqWRtnOt6XX","level":2,"time":"2024-10-18T17:06:42+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/126.0.0.0 YaBrows
er/24.7.0.0 Safari/537.36","version":"","data":{}}
{"reqId":"LexBwLDY9G4i1rDqacB3N","level":2,"time":"2024-10-18T17:21:00+00:00","remoteAddr":"192.168.65.1","user":"","app":"no app in context","method":"GET","url":"/","message":"Host localh
ost was not connected to because it violates local access rules","userAgent":"Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/126.0.0.0 YaBrowse
r/24.7.0.0 Safari/537.36","version":"","data":{}}
{"reqId":"LexBwLDY9G4i1rDqacB3N","level":3,"time":"2024-10-18T17:21:00+00:00","remoteAddr":"192.168.65.1","user":"","app":"PHP","method":"GET","url":"/","message":"fopen(/var/www/html/confi
g/config.php): Failed to open stream: No such file or directory at /var/www/html/lib/private/Config.php#221","userAgent":"Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (
KHTML, like Gecko) Chrome/126.0.0.0 YaBrowser/24.7.0.0 Safari/537.36","version":"","data":{"app":"PHP"}}
{"reqId":"WmsHBu9fQHEA87uq5j5y","level":2,"time":"2024-10-18T17:21:04+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/126.0.0.0 YaBrows
er/24.7.0.0 Safari/537.36","version":"","data":{}}
{"reqId":"WmsHBu9fQHEA87uq5j5y","level":2,"time":"2024-10-18T17:21:04+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/126.0.0.0 YaBrows
er/24.7.0.0 Safari/537.36","version":"","data":{}}
{"reqId":"Mzd2TzkmZKjZbWnpaw6","level":2,"time":"2024-10-18T17:21:12+00:00","remoteAddr":"192.168.65.1","user":"","app":"no app in context","method":"POST","url":"/","message":"Host local
```

- После инициализации Nextcloud проверяем в логах promtail, что он “подцепил” нужный нам log-файл: должны быть строчки, содержащие msg=Seeked /opt/nc_data/nextcloud.log

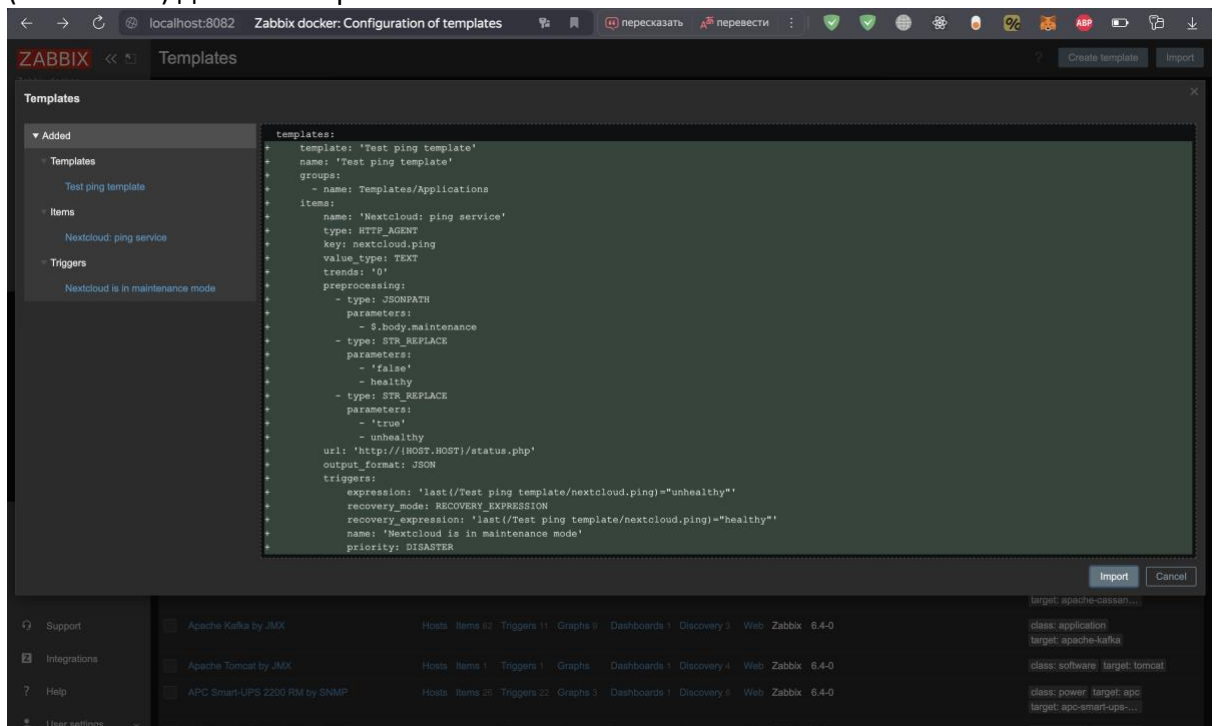
```
Last login: Thu Oct 10 20:13:37 on ttys008
yaroslav@MacBook-Air-Yaroslav ~ % docker logs 9bd01a291c5a5211bcd8fb722a8a2af5de7c5037df6a6437ada633ac67d240d1
level=info ts=2024-10-10T17:20:15.372452416Z caller=promtail.go:133 msg="Reloading configuration file" md5sum=2c8ba9ad5647669e9f64bdad5fed7eae
level=info ts=2024-10-10T17:20:15.375810458Z caller=server.go:322 http=[::]:9080 grpc=[::]:33429 msg="server listening on addresses"
level=info ts=2024-10-10T17:20:15.378600875Z caller=main.go:174 msg="Starting Promtail" version="(version=2.9.0, branch=HEAD, revision=2feb64f69)"
level=warn ts=2024-10-10T17:20:15.378776458Z caller=promtail.go:263 msg="enable watchConfig"
level=info ts=2024-10-10T17:20:20.378507627Z caller=filetargetmanager.go:361 msg="Adding target" key="/opt/nc_data/*.log:{job=\"nextcloud_logs\"}"
level=info ts=2024-10-10T17:20:20.379154335Z caller=filetargetmanager.go:313 msg="watching new directory" directory=/opt/nc_data
ts=2024-10-10T17:20:20.379411835Z caller=log.go:168 level=info msg="Seeked /opt/nc_data/nextcloud.log - &{Offset:0 Whence:0}"
level=info ts=2024-10-10T17:20:20.379997377Z caller=tailer.go:145 component=tailer msg="tail routine: started" path=/opt/nc_data/nextcloud.log
level=info ts=2024-10-10T17:21:00.793895299Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/htaccessstest.txt op=CREATE
level=info ts=2024-10-10T17:21:04.002803925Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2024-10-10T17:21:04.041639592Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level=info ts=2024-10-10T17:21:12.054361012Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/htaccessstest.txt op=CREATE
level=info ts=2024-10-10T17:21:12.060072887Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level=info ts=2024-10-10T17:21:12.060232679Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2024-10-10T17:21:37.380447927Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/htaccessstest.txt op=CREATE
level=info ts=2024-10-10T17:21:37.385299094Z caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
```

Часть 2

- Теперь настраиваем Zabbix. Подключаемся к веб-интерфейсу (<http://localhost:8082> или свой выбранный порт из композ файла) , креды Admin | zabbix



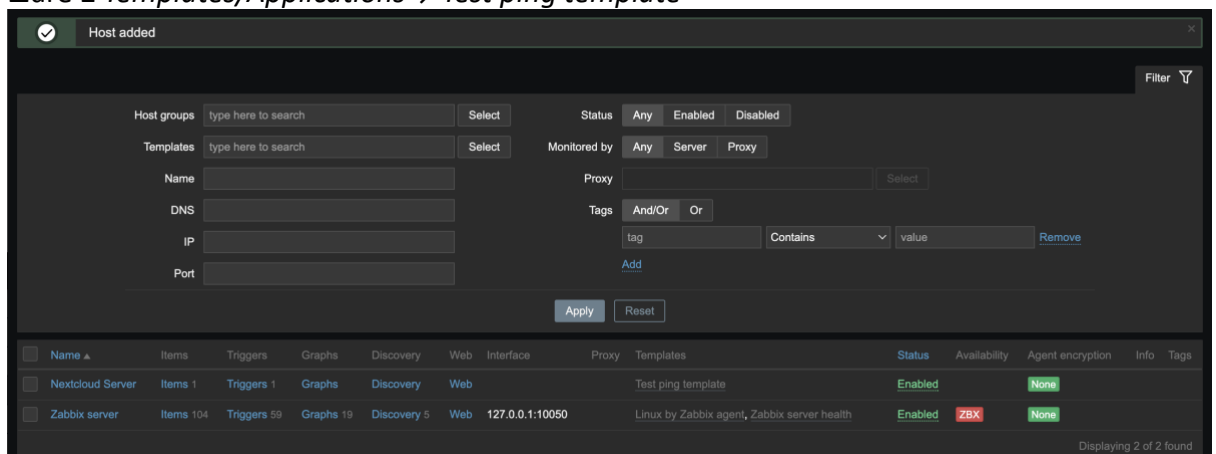
2. В разделе *Data collection* → *Templates* делаем *Import* кастомного шаблона (темплейта) для мониторинга nextcloud.



3. Чтобы Zabbix и Nextcloud могли общаться по своим коротким именам внутри докерской сети, в некстклауде необходимо “разрешить” это имя. Для этого нужно зайти на контейнер некстклауда под юзером www-data и выполнить команду `php occ config:system:set trusted_domains 1 --value="nextcloud"`

```
yaroslav@MacBook-Air-Yaroslav ~ % docker exec -u www-data -it nextcloud bash
www-data@0801adb70ac0:~/html$ php occ config:system:set trusted_domains 1 --value="nextcloud"
System config value trusted_domains => 1 set to string nextcloud
www-data@0801adb70ac0:~/html$
```

4. В разделе *Data collection* → *Hosts* делаем (*Create host*). Указываем адрес (имя) контейнера nextcloud, видимое имя - любое, хост группа - *Applications* (но в целом можно любую другую). Чтобы не просто добавить хост, а начать его мониторинг, необходимо подключить к нему нужный шаблон мониторинга. Поэтому в поле *Templates* нужно выбрать добавленный на шаге 2 *Templates/Applications* → *Test ping template*



5. Переходим в раздел *Monitoring* → *Latest data*. Через какое-то время там должны появиться первые данные, в нашем случае значение *healthy*

The screenshot shows the Zabbix web interface at localhost:8082. The left sidebar contains navigation links: Zabbix docker, Dashboards, Monitoring (selected), Problems, Hosts, Latest data (selected), Maps, Discovery, Services, Inventory, Reports, Data collection, Alerts, Users, Administration, Support, Integrations, Help, User settings, and Sign out. The main panel displays a table of monitoring data for various hosts. The row for 'Nextcloud Server' and 'Nextcloud: ping service' is highlighted with a red box, showing a status of 'healthy'. Other rows include 'Zabbix server' with various system metrics like 'Number of processes', 'Operating system', 'System boot time', etc.

Host	Item	Value	Units	Severity	Component	Link
Zabbix server	Linux: Number of processes				component: system	Graph
Zabbix server	Linux: Number of running processes				component: system	Graph
Zabbix server	Linux: Operating system				component: os	History
Zabbix server	Linux: Operating system architecture				component: os	History
Zabbix server	Linux: System boot time				component: system	Graph
Zabbix server	Linux: System description				component: system	History
Zabbix server	Linux: System local time				component: system	Graph
Zabbix server	Linux: System name				component: system	History
Zabbix server	Linux: System uptime				component: system	Graph
Zabbix server	Linux: Total memory				component: memory	Graph
Zabbix server	Linux: Total swap space				component: memory component: storage	Graph
Zabbix server	Linux: Version of Zabbix agent running				component: application	History
Zabbix server	Linux: Zabbix agent availability	51s		not available (0)	component: system	Graph
Zabbix server	Linux: Zabbix agent ping				component: system	Graph
Nextcloud Server	Nextcloud: ping service	46s		healthy		History
Zabbix server	Zabbix server: Configuration cache, % used	24s	21.8445 %	+0.009942 %	component: system	Graph
Zabbix server	Zabbix server: Connector queue				component: system	Graph
Zabbix server	Zabbix server: History index cache, % used	22s	0.4183 %		component: system	Graph
Zabbix server	Zabbix server: History write cache, % used	23s	0 %		component: system	Graph
Zabbix server	Zabbix server: LLD queue	43s	0		component: system	Graph
Zabbix server	Zabbix server: Number of processed character valu...	23s	0		component: system	Graph

Часть 3

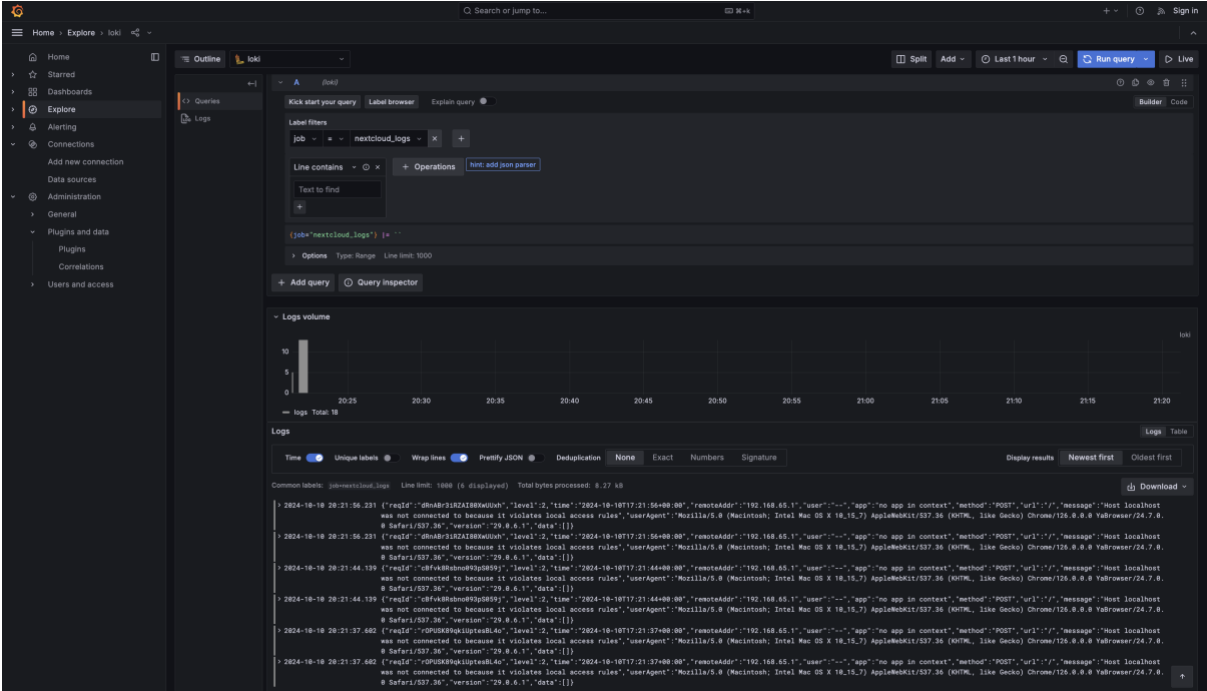
1. В терминале выполнить команду `docker exec -it grafana bash -c "grafana cli plugins install alexanderzobnln-zabbix-app"`, а затем `docker restart grafana`

```
Last login: Thu Oct 10 20:28:05 on ttys005
[yaroslav@MacBook-Air-Yaroslav ~ % docker exec -it grafana bash -c "grafana cli p
lugins install alexanderzobnln-zabbix-app"
✓ Downloaded and extracted alexanderzobnln-zabbix-app v4.5.5 zip successfully to
/var/lib/grafana/plugins/alexanderzobnln-zabbix-app

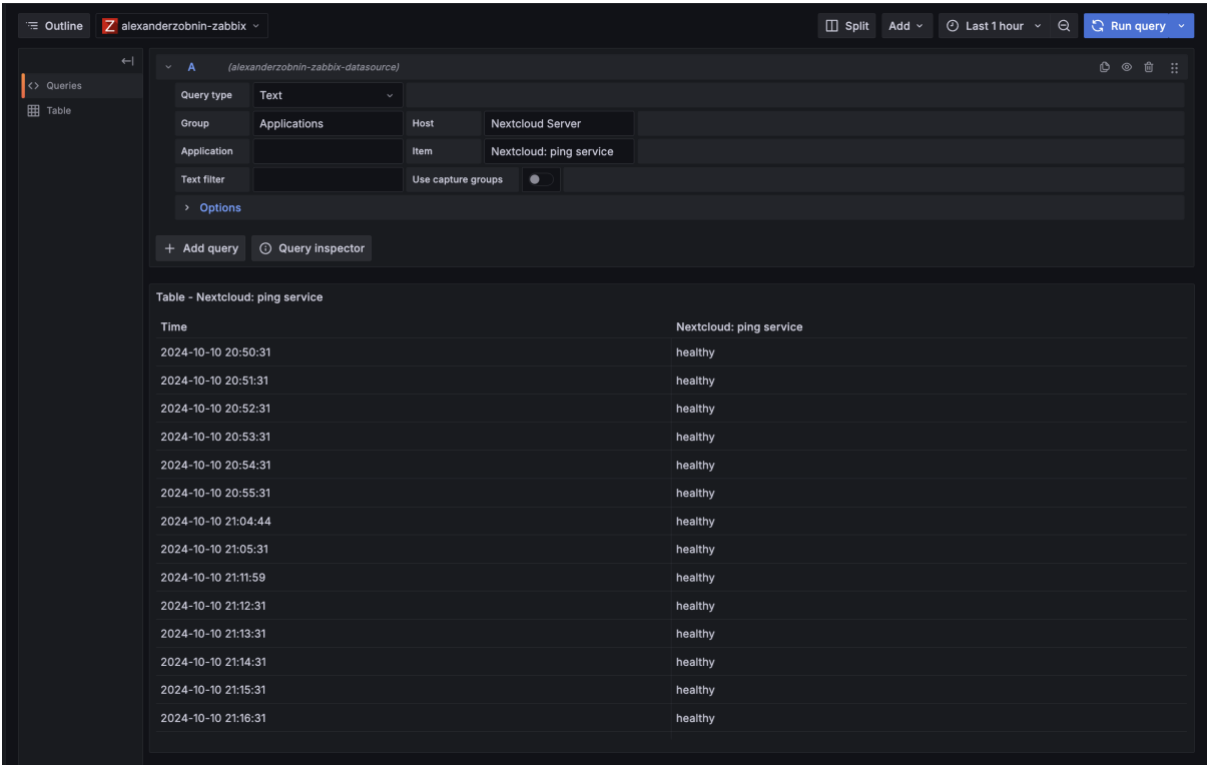
Please restart Grafana after installing or removing plugins. Refer to Grafana do
cumentation for instructions if necessary.

[yaroslav@MacBook-Air-Yaroslav ~ % docker restart grafana
grafana
yaroslav@MacBook-Air-Yaroslav ~ %
```

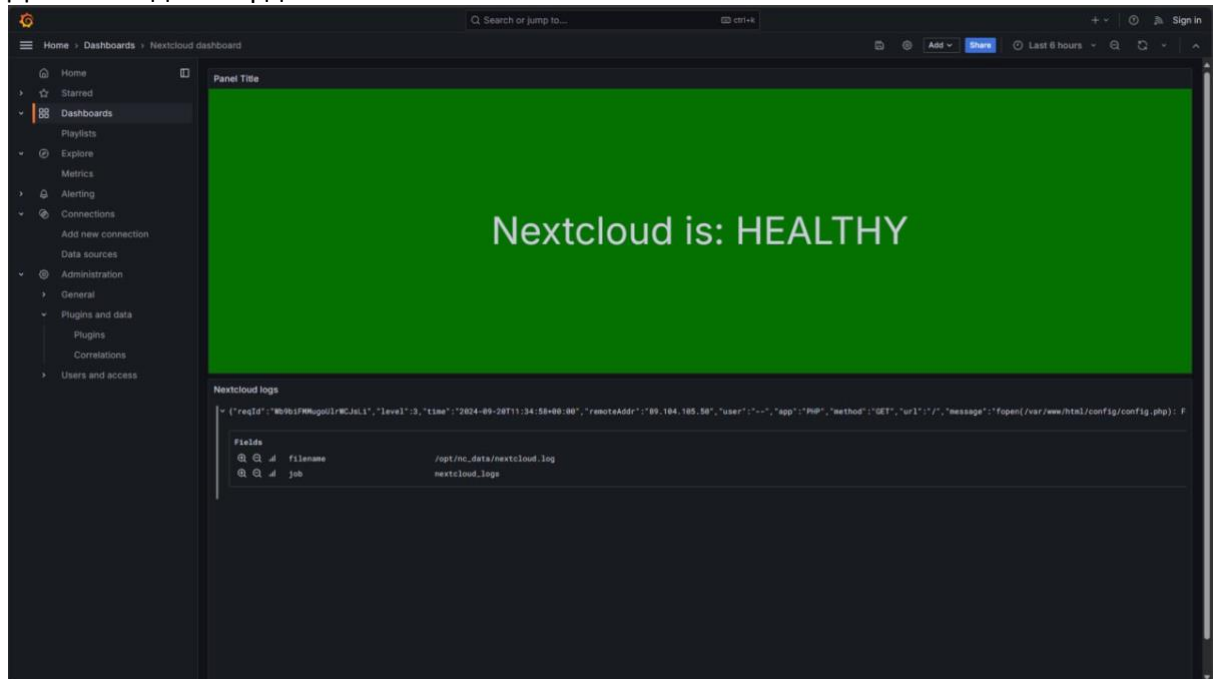
2. Настроив Loki мы нажимаем Run Query и видим наши логи



3. Аналогично с Zabbix



4. Добавили даш борды на nextcloud и логи



Ответы на вопросы:

1. Чем SLO отличается от SLA?

SLO – это желаемое значение, которое описывает уровень доступности услуги;
SLA – это соглашение, которое описывает уровень качества предоставления услуги.

2. Чем отличается инкрементальный бэкап от дифференциального?

Инкрементальный бэкап сохраняет только изменения, произошедшие с момента последнего любого резервного копирования, а дифференциальный с последнего полного.

3. В чем разница между мониторингом и observability?

Мониторинг – это процесс наблюдения за системой с помощью заранее настроенных метрик, логов и прочего, а observability – это способность системы предоставлять информацию о своем состоянии