

Министерство науки и высшего образования Российской Федерации
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ АВТОНОМНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ
«Национальный исследовательский университет ИТМО»
(Университет ИТМО)

Факультет инфокоммуникационных технологий

Отчет по дисциплине: «Администрирование сетей»

Практическая работа «**Loki + Zabbix + Grafana**»

Выполнили студенты:

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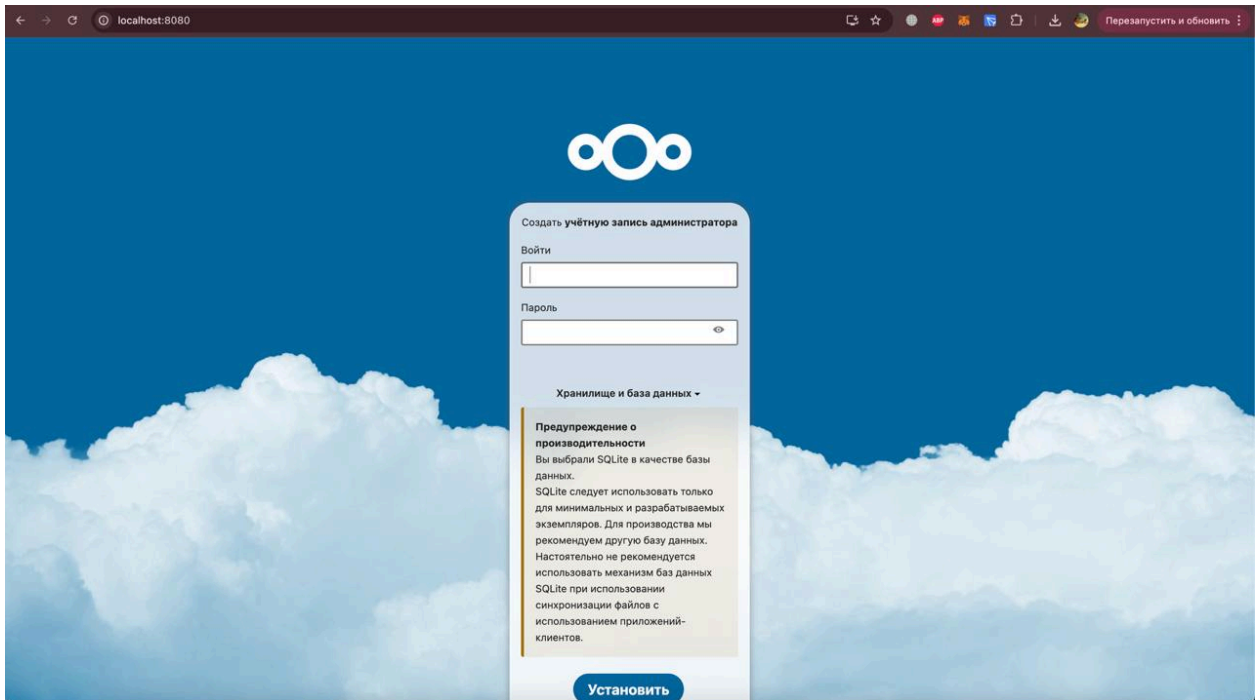
Чернышов Миша (группа)

Проверил: Александр в синей ячейке

Санкт-Петербург
2024

Создаем учетную запись в nextcloud

```
pavelchernyshev@MacBook-Pro-6 1 % docker compose up -d
[+] Running 7/0
 ✓ Container nextcloud      Running      0.0s
 ✓ Container promtail       Running      0.0s
 ✓ Container grafana        Running      0.0s
 ✓ Container postgres-zabbix Running      0.0s
 ✓ Container loki           Running      0.0s
 ✓ Container zabbix-front   Running      0.0s
 ✓ Container zabbix-back    Running      0.0s
```



После создания учетной записи в nextcloud, проверили nextcloud.log

```
pavelchernyshev@MacBook-Pro-6 1 % docker exec -it 8d3838880ccc bash
root@8d3838880ccc:/var/www/html# cat data/
cat: data: Is a directory
root@8d3838880ccc:/var/www/html# ls
3rdparty  composer.lock  custom_apps  lib  package-lock.json  robots.txt
AUTHORS   config         data         nextcloud-init-sync.lock  package.json       status.php
COPYING  console.php   dist        occ  package.json       themes
apps     core         index.html  ocs  public.php         version.php
composer.json  cron.php    index.php  ocs-provider  remote.php
root@8d3838880ccc:/var/www/html# cat data
cat: data: Is a directory
root@8d3838880ccc:/var/www/html# cat data/nextcloud.log
cat: data/nextcloud.log: No such file or directory
root@8d3838880ccc:/var/www/html# cat data/nextcloud.log
{"reqId":"J60JExZQ7Bn6IE2YQH","level":2,"time":"2024-10-30T11:37:06+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/129.0.0.0 Safari/537.36","version":"","data":[]}
{"reqId":"J60JExZQ7Bn6IE2YQH","level":2,"time":"2024-10-30T11:37:06+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/129.0.0.0 Safari/537.36","version":"","data":[]}
{"reqId":"J60JExZQ7Bn6IE2YQH","level":3,"time":"2024-10-30T11:37:06+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/129.0.0.0 Safari/537.36","version":"","data":{"app":"PHP"}}
{"reqId":"0QRTxXYQthQbEsh1e0LI","level":2,"time":"2024-10-30T11:37:13+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/129.0.0.0 Safari/537.36","version":"","data":[]}
{"reqId":"0QRTxXYQthQbEsh1e0LI","level":2,"time":"2024-10-30T11:37:13+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/129.0.0.0 Safari/537.36","version":"","data":[]}
{"reqId":"BIA3Gcx0R0XsvwdL0vP","level":2,"time":"2024-10-30T11:40:04+00:00","remoteAddr":"192.168.65.1","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 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/129.0.0.0 Safari/537.36","version":"","data":[]}
root@8d3838880ccc:/var/www/html#
```

Проверили promtail подсоединился к nextcloud и собирает логи

```
pavelchernyshev@MacBook-Pro-6 1 % docker logs 70f7a422395f
level=info ts=2024-10-30T11:18:22.647050077 caller=promtail.go:133 msg="Reloading configuration file" md5sum=18409bd0dd819d397aa767b13b7502e4
level=info ts=2024-10-30T11:18:22.647595257 caller=server.go:322 http[::]:3100 grpc[::]:40565 msg="server listening on addresses"
level=info ts=2024-10-30T11:18:22.647452162 caller=main.go:174 msg="Starting Promtail" version="(version=2.9.0, branch=HEAD, revision=2feb64f69)"
level=warn ts=2024-10-30T11:18:22.647819466 caller=promtail.go:263 msg="enable watchConfig"
level=info ts=2024-10-30T11:37:07.6569821252 caller=filetarget.go:313 msg="watching new directory" directory=/opt/nc_data
ts=2024-10-30T11:37:07.6577303332 caller=log.go:168 level=info msg="Seeked /opt/nc_data/nextcloud.log - &{offset:0 whence:0}"
level=info ts=2024-10-30T11:37:07.65817252 caller=tailer.go:145 component=tailer msg="tail routine: started" path=/opt/nc_data/nextcloud.log
level=info ts=2024-10-30T11:37:13.543731927 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/htaccess.txt op=CREATE
level=info ts=2024-10-30T11:40:04.9712997632 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/htaccess.txt op=CREATE
level=info ts=2024-10-30T11:40:04.9815260132 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db op=CREATE
level=info ts=2024-10-30T11:40:04.982617212 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-journal op=CREATE
level=info ts=2024-10-30T11:40:04.990415933 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2024-10-30T11:40:04.9904628462 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level=info ts=2024-10-30T11:40:06.072780932 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/.ocdata op=CREATE
level=info ts=2024-10-30T11:40:06.2407210552 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/admin op=CREATE
level=info ts=2024-10-30T11:40:09.4174101682 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2024-10-30T11:40:09.4174833762 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level=info ts=2024-10-30T11:40:09.4174833762 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2024-10-30T11:40:09.4768179592 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level=info ts=2024-10-30T11:40:09.5043232932 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/appdata_oc80beg26sj6 op=CREATE
level=info ts=2024-10-30T11:40:09.5796560432 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2024-10-30T11:40:09.5797569182 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level=info ts=2024-10-30T11:40:09.7178397932 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2024-10-30T11:40:09.7182622092 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
level=info ts=2024-10-30T11:40:09.9259090432 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-wal op=CREATE
level=info ts=2024-10-30T11:40:09.9259627092 caller=filetargetmanager.go:181 msg="received file watcher event" name=/opt/nc_data/owncloud.db-shm op=CREATE
```

The screenshot shows the Zabbix web interface at localhost:8082/templates.php. A custom template named 'Nextcloud ping service' is displayed. The template configuration includes:

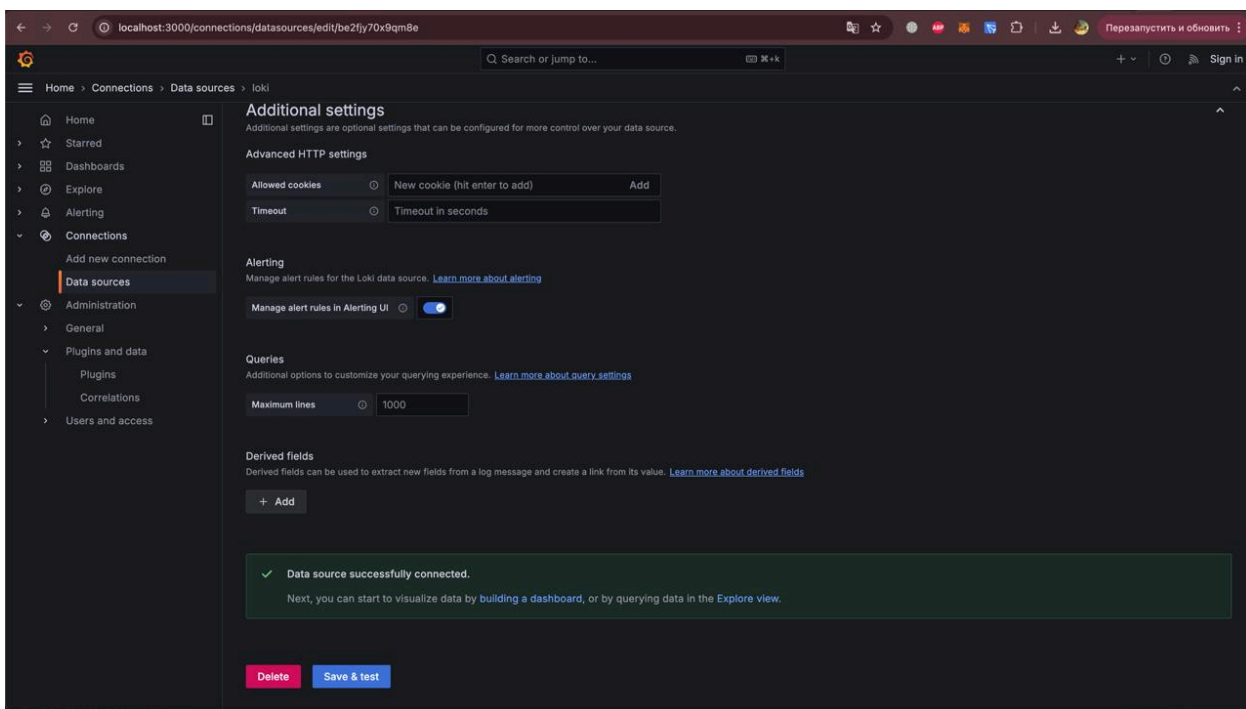
- name: 'Test ping template'
- groups: Templates/Applications
- items:
 - name: 'Nextcloud: ping service'
 - type: HTTP_AGENT
 - key: nextcloud.ping
 - value_type: TEXT
 - trends: '0'
 - preprocessing:
 - type: JSONPATH
 - parameters:
 - path: \$.body.maintenance
 - type: STR_REPLACE
 - parameters:
 - replace: 'false'
 - type: STR_REPLACE
 - parameters:
 - replace: 'true'
 - type: UNHEALTHY
 - url: 'http://[HOST.WOST]/status.php'
 - output_format: JSON
- triggers:
 - expression: 'last(/Test ping template/nextcloud.ping)='unhealthy''
 - recovery_mode: RECOVERY_EXPRESSION
 - recovery_expression: 'last(/Test ping template/nextcloud.ping)='healthy''
- name: 'Nextcloud is in maintenance mode'
- priority: DISASTER

```
pavelchernyshev@MacBook-Pro-6 1 % docker exec -u www-data -it nextcloud bash
www-data@8d3838880ccc:~/html$ php occ config:system:set trusted_domains 1 --value="nextcloud"
System config value trusted_domains => 1 set to string nextcloud
www-data@8d3838880ccc:~/html$
```

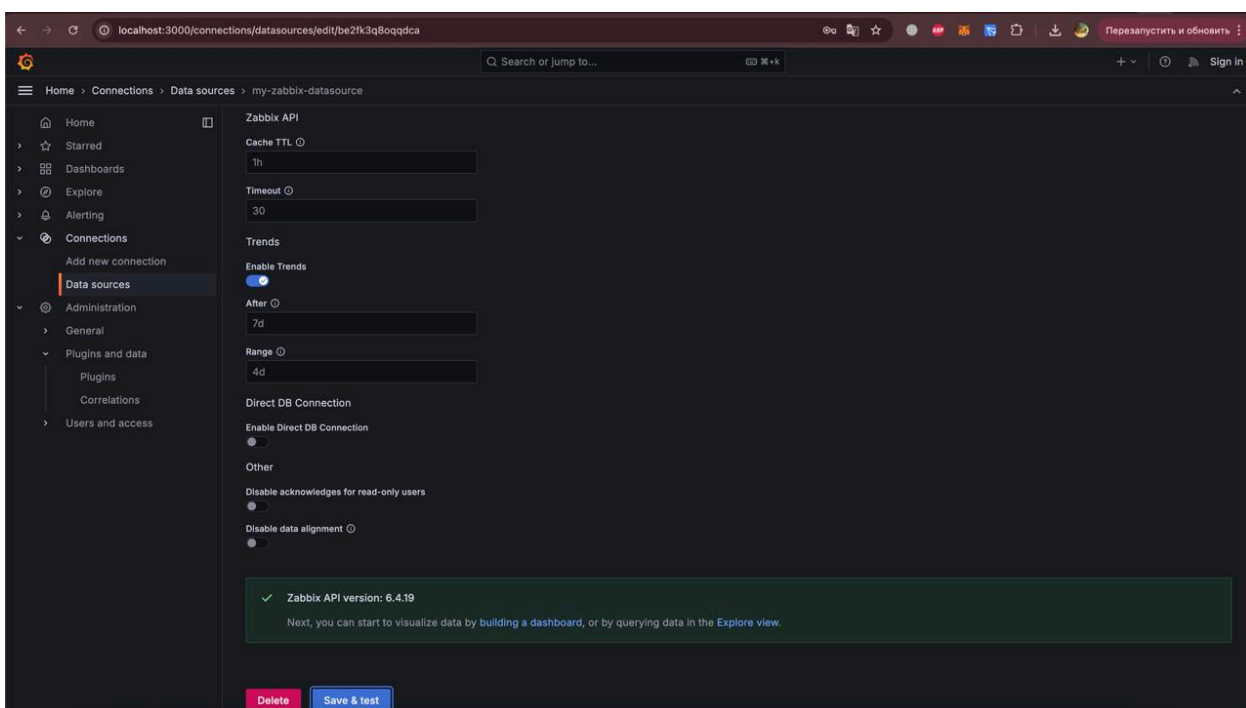
Связали nextcloud и zabbix для получения логов о состоянии nextcloud (health)

Host	Name	Last check	Last value	Change	Tags	Info
Nextcloud server	Nextcloud: ping service	1s	healthy			History

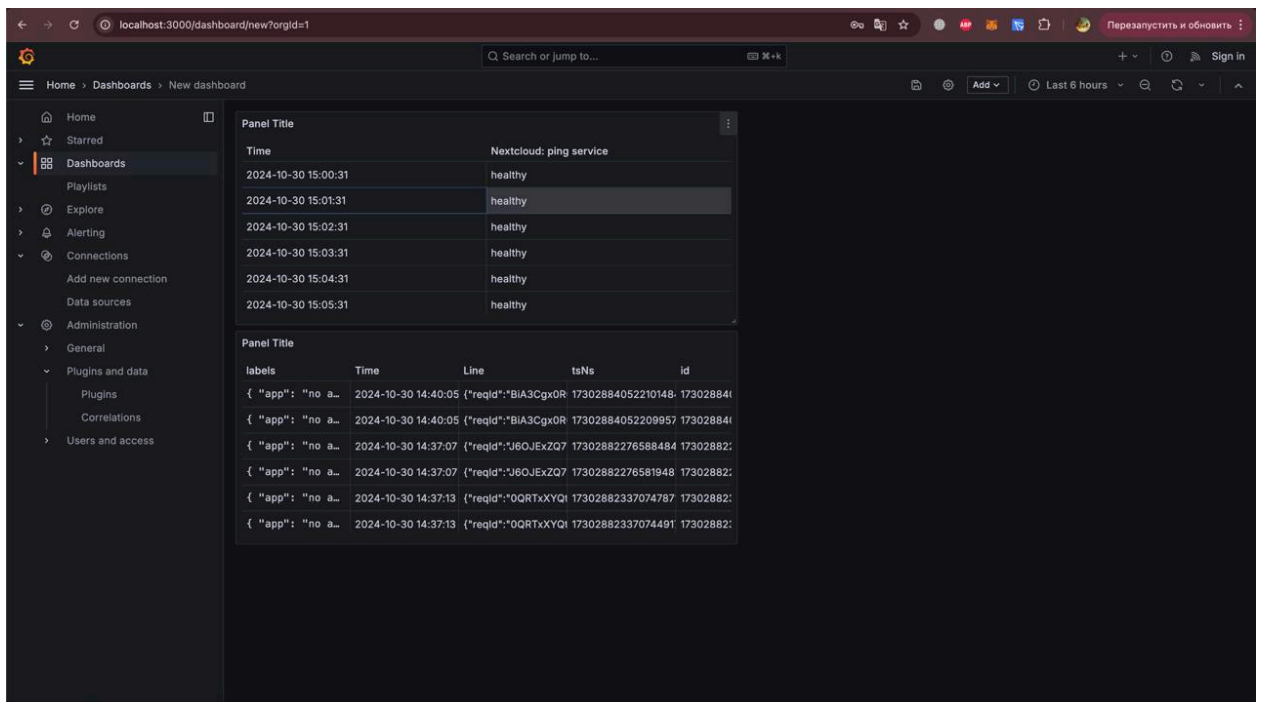
Добавил в grafana Loki data source



Добавили в grafana Zabbix data source (для этого установил соответствующий plugin)



Создали два dashboard для логирования zabbix и nextcloud



Ответы на вопросы:

1. Основное различие заключается в том, что SLA является официальным соглашением с клиентом, тогда как SLO — это внутренние цели, которые помогают обеспечить выполнение условий SLA
2. Различие в том, что инкрементальный бэкап - сохраняет изменения с последнего бэкапа (полного или инкрементального), а дифференциальный бэкап - сохраняет изменения с последнего полного бэкапа.
3. Разница в том, что monitoring - фокусируется на сборе метрик для оценки производительности, а observability - охватывает более широкий спектр данных (логи, трассировки) для понимания состояния системы и выявления причин проблем.