

# Container 'mariadb'

## Ressourcen

- 1 GB RAM
- 2 Cores
- 8 GB HDD (root-fs)

## System

- interne IPs
  - 10.2.0.100, fd00:10:2:0::100
  - 10.3.0.100, fd00:10:3:0::100 (MariaDB)

## Dienste

- MariaDB 10

## Datenbanken

Datenbank	Benutzer	Verwendung
nextcloud	nc_user	<a href="#">Nextcloud</a>
wordpress	wp_user	<a href="#">Wordpress</a>

## Betrieb

### Datenbank und Benutzer anlegen

1. Zur Datenbank verbinden
  - **sudo mysql**
2. Datenbank anlegen und Benutzer mit Passwort zuweisen

MySQL-Konsole "MariaDB [(none)]"

```
CREATE DATABASE databasename;  
GRANT ALL PRIVILEGES ON databasename.* TO 'username'@'%' IDENTIFIED BY 'password';  
FLUSH PRIVILEGES;
```

### Passwort für Benutzer ändern

1. Zur Datenbank verbinden
  - **sudo mysql**
2. Benutzer neues Passwort zuweisen

MySQL-Konsole "MariaDB [(none)]"

```
ALTER USER 'username'@'%' IDENTIFIED BY 'password';  
FLUSH PRIVILEGES;
```

## Installation

- Standard-Template mit Benutzern

## MariaDB

1. MariaDB-Server installieren
  - **apt-get install mariadb-server**
2. MariaDB - Erstkonfiguration

- **mysql\_secure\_installation**
  - Set root password? [Y/n]: **Y**
  - New password: **PASSWORT**
  - Re-enter new password: **PASSWORT**
  - Remove anonymous users? [Y/n]: **Y**
  - Disallow root login remotely? [Y/n]: **Y**
  - Remove test database and access to it? [Y/n]: **Y**
  - Reload privilege tables now? [Y/n]: **Y**

### 3. Benutzerdefinierte Konfiguration anlegen

/etc/mysql/mariadb.conf.d/99-bytecluster.cnf

```
[mysqld]
# An lokale IP binden
bind-address                = 10.3.0.100

# Binlog deaktivieren
skip-log-bin

# InnoDB verwenden
default_storage_engine      = InnoDB

# InnoDB-Optimierungen
innodb_buffer_pool_size    = 256M
innodb_log_buffer_size     = 8M
innodb_log_file_size       = 128M

innodb_log_files_in_group  = 2
innodb_flush_log_at_trx_commit = 2
innodb_flush_method        = 0_DIRECT
innodb_file_per_table      = 1
```

### 4. MariaDB neustarten

- **systemctl restart mariadb.service**

## Backup mit Borgmatic

1. Debian Testing-Repo „Bullseye) integrieren (für Borgmatic 1.5, da Debian 10 noch Borgmatic 1.2 beinhaltet)
  - Standard-Installationsquelle auf „stable“ stellen und borgmatic aus testing installieren

/etc/apt/preferences.d/testing

```
Explanation: Uninstall or do not install any Debian-originated
Explanation: package versions other than those in the stable distro
Package: *
Pin: release a=stable
Pin-Priority: 900

Package: borgmatic
Pin: release o=Debian,a=testing
Pin-Priority: 500

Package: *
Pin: release o=Debian
Pin-Priority: -10
```

- Testing-Repo integrieren

/etc/apt/sources.list.d/hetzner-mirror-testing.list

```
deb http://mirror.hetzner.de/debian/packages bullseye main contrib
deb http://mirror.hetzner.de/debian/packages bullseye-updates main contrib
```

```
deb http://mirror.hetzner.de/debian/packages bullseye-backports main contrib
```

2. Borgmatic aus Testing installieren
  - **sudo apt-get update**
  - **sudo apt-get install borgmatic/bullseye**
3. Borgmatic-Konfiguration in der Datei /etc/borgmatic/config.yaml erzeugen
  - **sudo generate-borgmatic-config**
4. SSH-Key erzeugen
  - **sudo ssh-keygen -a100 -t ed25519 -f /root/.ssh/id\_borgbackup**
5. SSH-Key bei Backupserver hinterlegen
6. Zufälliges Passwort in Konfiguration erzeugen
  - **sudo sed -i -e "s|^\( encryption\_passphrase: \"\").\*(\"\$)|\1PASS\_TO\_REPLACE\2|" /etc/borgmatic/config.yaml**
  - **sudo sed -i "s|PASS\_TO\_REPLACE|\$(pwgen -cnysB -1 32 -r \"^\|\\\\\|)|" /etc/borgmatic/config.yaml**
7. Konfiguration anpassen (USERNAME, SERVERNAME, SSH-PORT ersetzen)

```
/etc/borgmatic/config.yaml
```

```
location:
  ...
  source_directories:
    - /etc
    - /home
    - /root
    - /usr/local
    - /var/log
  ...
  repositories:
    - USERNAME@SERVERNAME:~/borg
  ...
  one_file_system: true
  ...
  exclude_caches: true
  ...
storage:
  ...
  encryption_passphrase: "ENCRYPTION-PASSPHRASE"
  ...
  compression: zlib,9
  ...
  ssh_command: ssh -i /root/.ssh/id_borgbackup -p SSH-PORT
  ...
retention:
  ...
  keep_daily: 7
  ...
  keep_weekly: 4
  ...
  keep_monthly: 6
  ...
  keep_yearly: 1
  ...
consistency:
  ...
  checks:
    - repository
    - archives
  ...
hooks:
  before_backup:
    - dpkg-query -f '${binary:Package}\n' -W > /root/package.list
  ...
```

```
mysql_databases:
  - name: all
  ...
```

- 8. Borg-Repository initialisieren
  - **sudo borgmatic init -encryption keyfile**
- 9. Verschlüsselungsinformationen sicher verwahren
  - 1. Verschlüsselungs-Passwort ermitteln
    - **sudo grep „encryption\_passphrase:“ /etc/borgmatic/config.yaml**
  - 2. Verschlüsselungs-Schlüssel ermitteln
    - **sudo cat /root/.config/borg/keys/SERVERNAME-MIT-UNTERSTRICHEN\_\_borg**
- 10. Erstes Backup initialisieren
  - **sudo borgmatic create -progress -stats**

```
-----
Archive name: mariadb-2020-12-05T17:36:48.502653
Archive fingerprint:
9a9c7f769dcd9af1e7f28158e4a3b0d05cb3faae25c45a6e9930591a1414eaa3
Time (start): Sat, 2020-12-05 17:36:49
Time (end):   Sat, 2020-12-05 17:36:55
Duration: 6.57 seconds
Number of files: 472
Utilization of max. archive size: 0%
-----

```

	Original size	Compressed size	Deduplicated size
This archive:	71.08 MB	2.72 MB	2.53 MB
All archives:	71.08 MB	2.72 MB	2.53 MB

```
-----

```

	Unique chunks	Total chunks
Chunk index:	437	464

```
-----
```

- 11. Backupinhalt nochmal prüfen
  - **sudo borgmatic list -archive latest**

```
USERNAME@SERVERNAME:~/borg: Listing archives
drwxr-xr-x root root          0 Wed, 2020-11-25 19:49:45 etc
-rw-r--r-- root root       767 Fri, 2016-03-04 11:00:00 etc/profile
...
```

- 12. Cronjob einrichten
  - **echo -e "0 3 \* \* \*\troot\t\$(which borgmatic) --syslog-verbosity 1" | sudo tee /etc/cron.d/borgmatic > /dev/null**

**Dauerhafter Link zu diesem Dokument:**  
<https://wiki.technikkultur-erfurt.de/dienste:bytecluster0002:mariadb?rev=1607779468>

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