

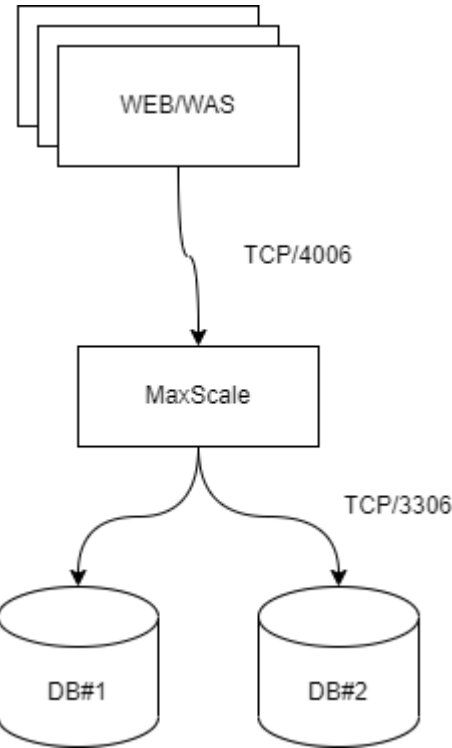
# maxscale DB 高可用性

1. 概要

1.1 Mysql + mysql-mmm と高可用性 DB 構築

- 1. mysql replication を read / write 分離 replication を行う
- 2. mmm を利用 ( latest 2.2.1 2012 12 )
- 3. mmm を failover / failback 行う

## Maxscale 概要



- 1. Mariadb を 2 つの DB 構築

2. galera cluster는 비동기 복제, maxscale는 db proxy로 비동기 복제
3. MySQL은 BSD 라이선스, MySQL은 S/W 라이선스, GPL 라이선스
  1. BSD 라이선스는 비영리 목적으로 사용 가능, 2. maxscale는 GPL 라이선스
  2. GPL은 소스 코드를 공개해야 함
  3. '22년 2월 1일부터 MySQL은 GPL 라이선스, BSD 라이선스, maxscale는 GPL 라이선스.
    1. 2.0 → 2019-01-01 (BSD 라이선스, maxscale는 GPL 라이선스)
    2. 2.1 → 2019-07-01 (BSD 라이선스, maxscale는 GPL 라이선스)
    3. 2.2 → 2020-01-01 (BSD 라이선스, maxscale는 GPL 라이선스)
    4. 2.3 → 2024-06-02
    5. 2.4 → 2026-01-04
    6. 2.5 → 2027-10-10
    7. 6.2 → 2026-03-08
    8. 6.3 - 2026-05-03
    9. 6.4 - 2027-11-30
    10. 23.0.8 - 2027-11-30
4. MySQL은 <https://github.com/mariadb-corporation/MaxScale>에 소스 코드가 있음
4. MySQL은 비동기 복제, MySQL은 비동기 복제
  1. scale out environment - MySQL DB는 비동기 복제, read / write split
  2. High availability - MySQL은 비동기 복제, read transaction
  3. Secure database - app은 DB를 비동기 복제, maxscale는 비동기 복제, MySQL은 비동기 복제, DDos 공격
5. MMM / Maxscale

구분	Mysql + Mysql-MMM	Mariadb + Maxscale
노드 구성	2(DB) + 1(monitor)	3(DB) + 1(Maxscale)
DB	Mysql	Mariadb 10
복제 방식	replication	galera cluster

구분	Mysql + Mysql-MMM	Mariadb + Maxscale
구분	monitor → agent db	maxscale → DB
failover	<ol style="list-style-type: none"> <li>1. monitor db health check</li> <li>2. Active DB</li> <li>3. Active DB VIP</li> <li>4. Standby DB VIP</li> </ol>	<ol style="list-style-type: none"> <li>1. maxscale DB health check</li> <li>2. Active DB</li> <li>3. DB</li> </ol>

## S/W

### 1. IP

1. maxscale : 192.168.0.101
2. db1 : 192.168.0.102
3. db2 : 192.168.0.103

### 2. Maxscale

#### 1. yum

```
$> vi /etc/yum.repos.d/mariadb.repo
[mariadb-main]
name = MariaDB Server
baseurl = https://downloads.mariadb.com/MariaDB/mariadb-10.5/yum/rhel/7/x86_64
gpgkey = file:///etc/pki/rpm-gpg/MariaDB-Server-GPG-KEY
gpgcheck = 1
enabled = 1

[mariadb-maxscale]
# To use the latest stable release of MaxScale, use "latest" as the version
# To use the latest beta (or stable if no current beta) release of MaxScale, use "beta" as the version
name = MariaDB MaxScale
baseurl = https://dlm.mariadb.com/repo/maxscale/latest/yum/rhel/7/x86_64
gpgkey = file:///etc/pki/rpm-gpg/MariaDB-MaxScale-GPG-KEY
gpgcheck = 1
enabled = 1
```

```
[mariadb-tools]
name = MariaDB Tools
baseurl = https://~/~/downloads.mariadb.com/Tools/rhel/7/x86_64
gpgkey = file:~/~/etc/pki/rpm-gpg/MariaDB-Enterprise-GPG-KEY
gpgcheck = 1
enabled = 1
```

### 3.

```
$> yum install maxscale -y
...
$> vi /etc/maxscale.cnf
# MaxScale documentation:
# https://~/~/mariadb.com/kb/en/mariadb-maxscale-25/
# Global parameters
#
# Complete list of configuration options:
# https://~/~/mariadb.com/kb/en/mariadb-maxscale-25-mariadb-maxscale-configuration-guide/
[maxscale]
threads=auto
# Server definitions
#
# Set the address of the server to the network
# address of a MariaDB server.
#
[server1]
type=server
address=192.168.0.102
port=3306
protocol=MariaDBBackend
[server2]
type=server
address=192.168.0.103
port=3306
protocol=MariaDBBackend
[server3]
type=server
address=192.168.0.101
port=3306
```

```

protocol=MariaDBBackend
# Monitor for the servers
#
# This will keep MaxScale aware of the state of the servers.
# MariaDB Monitor documentation:
# https://mariadb.com/kb/en/maxscale-25-monitors/
[MariaDB-Monitor]
type=monitor
#module=mariadbmon #Replication[ ] [ ] [ ] [ ]
module=galeramon #GaleraCluster[ ] [ ] [ ] [ ]
servers=server1,server2,server3
user=maxscale #maxscale[ ] db[ ] [ ] [ ]
password=maxscale #maxscale[ ] db[ ] [ ] [ ]
monitor_interval=2000
# Service definitions
#
# Service Definition for a read-only service and
# a read/write splitting service.
#
# ReadConnRoute documentation:
# https://mariadb.com/kb/en/mariadb-maxscale-25-readconnroute/
[Read-Only-Service]
type=service
router=readconnroute
servers=server1
user=myuser
password=mypwd
router_options=slave
# ReadWriteSplit documentation:
# https://mariadb.com/kb/en/mariadb-maxscale-25-readwritessplit/
[Read-Write-Service]
type=service
router=readwritessplit
servers=server1,server2 #read / write [ ] [ ] [ ]
user=maxscale #maxscale[ ] db[ ] [ ] [ ]
password=maxscale #maxscale[ ] db[ ] [ ] [ ]
# Listener definitions for the services
#
# These listeners represent the ports the

```

```
# services will listen on.
#
[Read-Only-Listener]
type=listener
service=Read-Only-Service
protocol=MariaDBClient
port=4008
[Read-Write-Listener]
type=listener
service=Read-Write-Service
protocol=MariaDBClient
port=4006
```

#### 4. Mariadb `[[[[]]]`

##### 1. `[[[]]]` `[[[[]]]]`

```
$> wget https://downloads.mariadb.org/interstitial/mariadb-10.5.11/bintar-linux-
x86_64/mariadb-10.5.11-linux-x86_64.tar.gz -O mariadb-10.5.11-linux-x86_64.tar.gz
```

##### 2. DB`[[[]]]` `[]` galera clutser `[[[]]]`

```
$> tar -zxvf mariadb-10.5.11-linux-x86_64.tar.gz -C /usr/local/
...
$> vi /etc/my.cnf
[galera]
# Mandatory settings
wsrep_on=ON
wsrep_provider=/usr/local/mariadb/lib/galera-4/libgalera_smm.so
wsrep_cluster_address=gcomm:~/~/192.168.0.102,192.168.0.103,192.168.0.101
binlog_format=row
default_storage_engine=InnoDB
innodb_autoinc_lock_mode=2
wsrep_node_address=192.168.0.101
#
# Allow server to accept connections on all interfaces.
#
bind-address=0.0.0.0
#
```

```
# Optional setting
#wsrep_slave_threads=1
#innodb_flush_log_at_trx_commit=0
```

5. `galera cluster master` (mariadb `galera` )

```
$>> galera_new_cluster
```

6. `mariadb`

```
$>> ./mariabdb-safe
```

7. DB

```
MariaDB [(none)]> grant select on mysql.* to maxscale@'%' identified by 'maxscale' with grant option
;
```



1. `maxscale`

```
$>> systemctl start maxscale
```

2. `maxscale` `list servers`

```
$>> maxctrl list servers
```

Server	Address	Port	Connections	State	GTID
server1	192.168.0.102	3306	2	Slave, Synced, Running	
server2	192.168.0.103	3306	0	Slave, Synced, Running	
server3	192.168.0.101	3306	0	Master, Synced, Running	

3. `maxscale` `list services`

```
$>> maxctrl list services
```

Service	Router	Connections	Total Connections	Servers
Read-Write-Service	readwritesplit	2	4	server1
Read-Only-Service	readconnrout	0	0	server1



1. DB 1 1

1. DB 1 1 1 1 1 "grastate.dat 1 1

```
$>> cat grastate.dat
# GALERA saved state
version: 2.1
uuid: 7d985eca-de63-11eb-87c6-0ad28b9e1f30
seqno: -1
safe_to_bootstrap: 0
```

2. safe\_to\_bootstrap 1 1 1 1 galera\_new\_cluster 1  
safe\_to\_bootstrap 1 1 1 down master 1 node

Revision #6

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