





[Portal](#) > [Knowledgebase](#) > [Databases](#) > [MySQL](#) > Complete Guide to Install and Configure Percona XtraDB Cluster with ScaleArc

Complete Guide to Install and Configure Percona XtraDB Cluster with ScaleArc

Dobroslav Tyrkas - 2017-07-28 - 0 Comments - in MySQL

How To Install Percona XtraDB Cluster and Configure It To Work With ScaleArc

Release	Classification	Level	DB Platform	Category
---------	----------------	-------	-------------	----------

ID#	Item No.		M/C/L	Inventory Configuration
				
				

QUESTION

How to install Percona XtraDB ?

How to create Percona cluster and verify replication ?

How to configure and add Percona cluster to ScaleArc ?

ANSWER

The goal of the KB article is to guide the user through the whole process of installing,

configuring and adding Percona XtraDB cluster to ScaleArc.

This manual is divided into the following sections: Prerequisites, Installing and Configuring

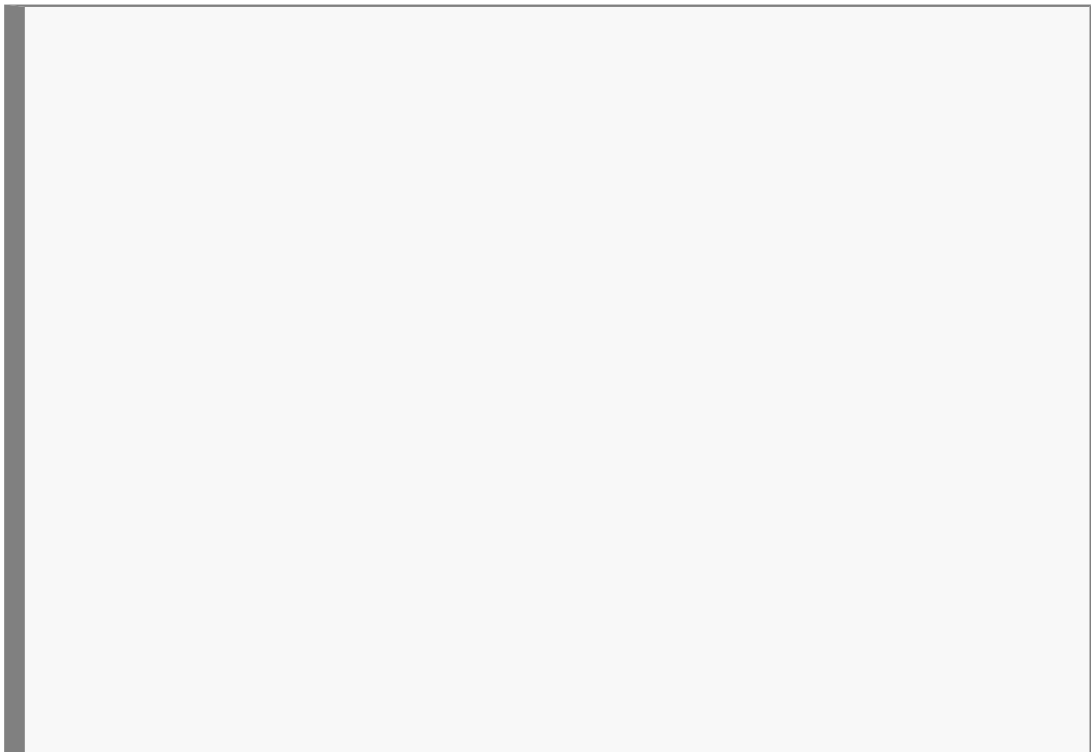
Percona XtraDB Cluster, Adding Percona to ScaleArc.

*PREREQUISITES:

1. Get Linux CentOS 7 minimal installed first:

Use ISO image [CentOS-7-x86_64-Minimal-1611.iso](#) to install operating system.

2. Get your IP plan ready, for example:

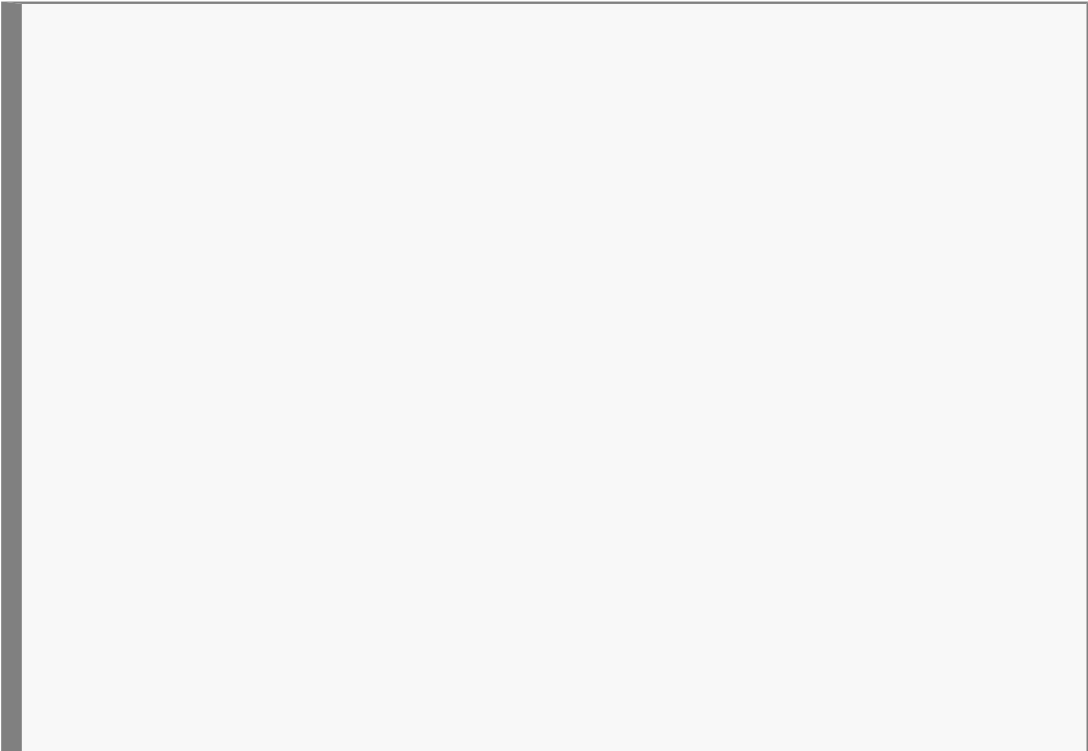


Hostname	IP address
-----	-----
percona1	192.168.1.222
percona2	192.168.1.223
percona3	192.168.1.224
scalearc1	192.168.1.209
scalearc2	192.168.1.210
scale-vip	192.168.1.211

Where percona1, percona2, percona3 are Percona XtraDB nodes, scalearc1 and scalearc2 are ScaleArc HA nodes, scale-vip is virtual IP address used by Percona cluster, defined in

ScaleArc.

3. Choose a cluster name, e.g:

A large, empty rectangular box with a thin black border, intended for the user to enter a cluster name. The box is positioned in the lower half of the page.

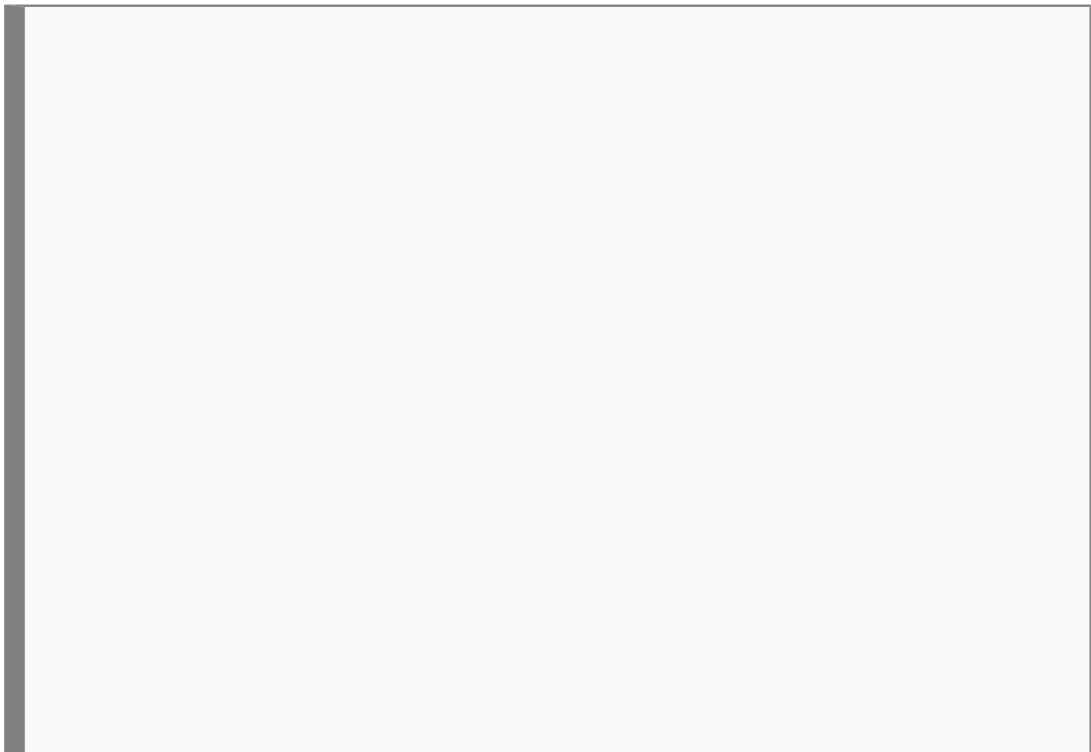
pxc-cluster

*INSTALL AND CONFIGURE PERCONA CLUSTER

After installing CentOS 7 minimal, configure the following on all three future Percona cluster

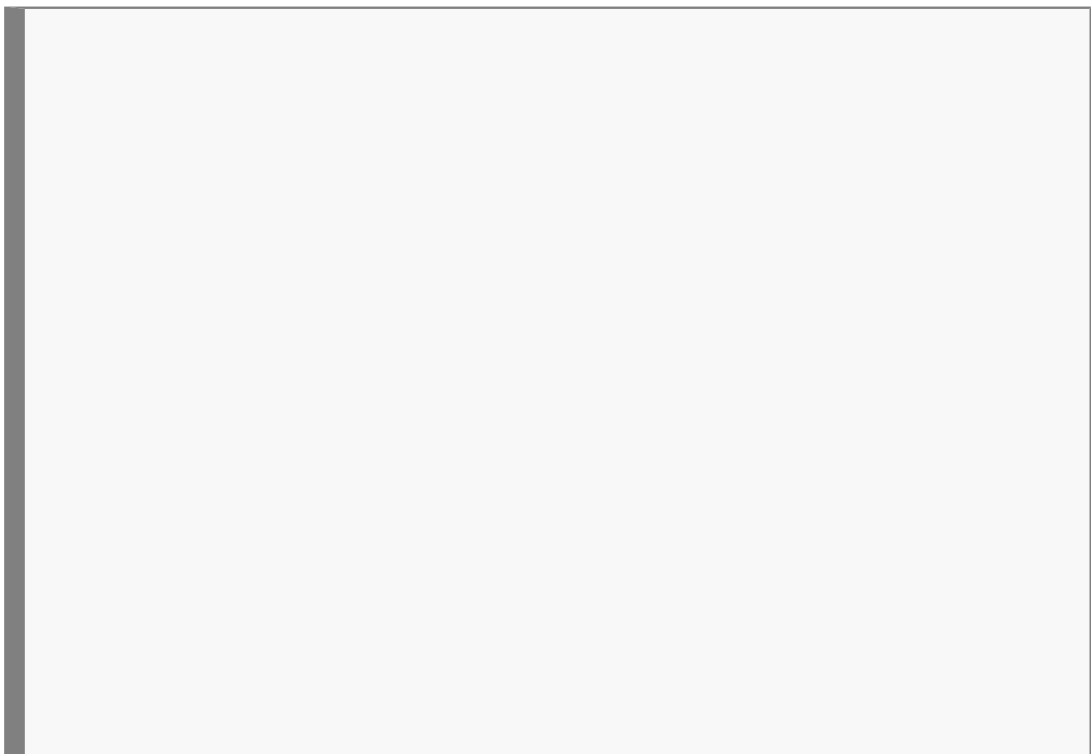
nodes:

1. Configure networking using nmtui tool:



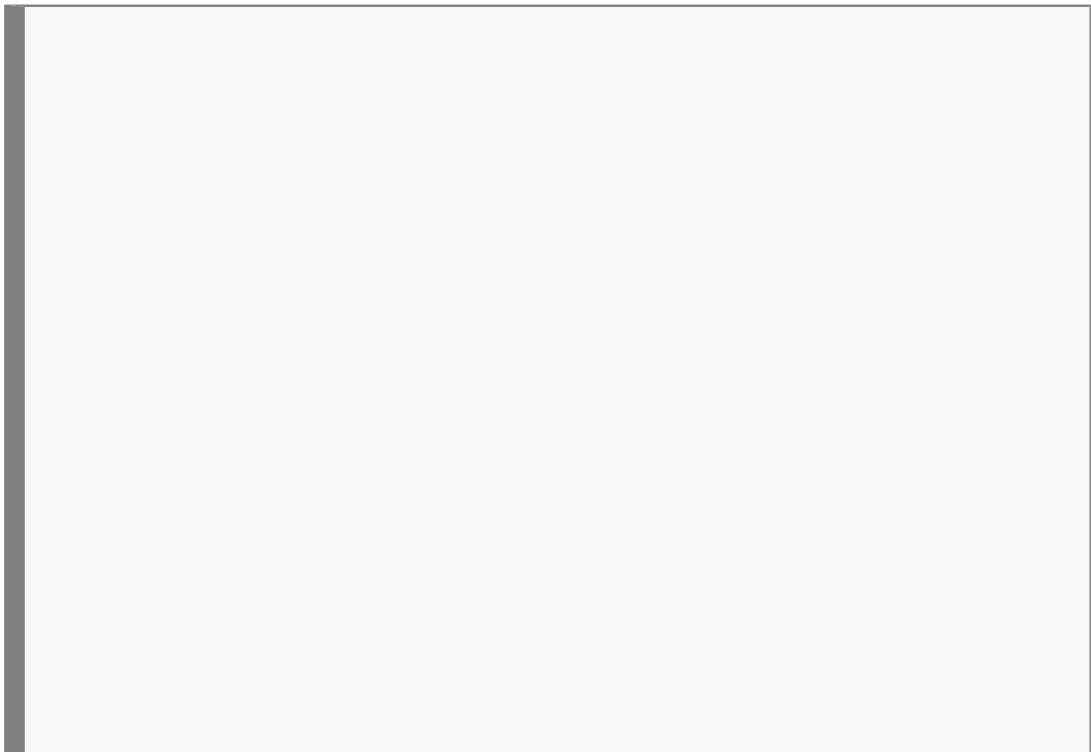

```
[root@localhost ~]# nmtui
```


2. Change the hostname to percona1, percona2, percona3 respectively:



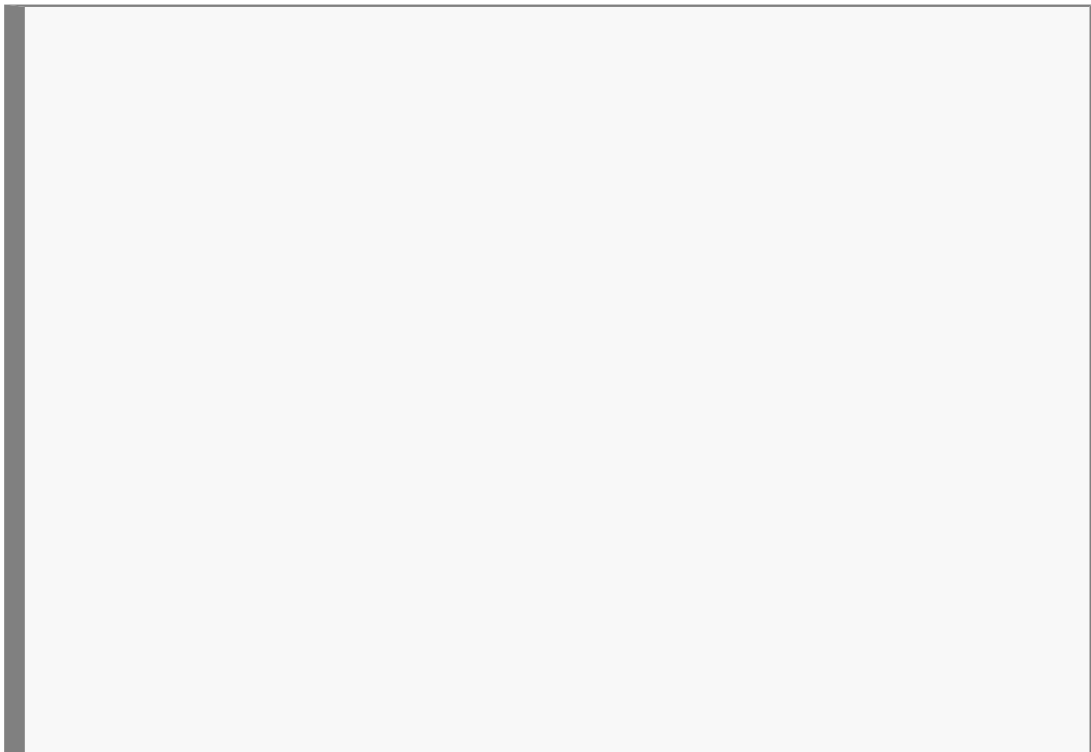
```
[root@localhost ~]# vi /etc/hostname
```


3. Disable the firewall daemon:



```
[root@perconal ~]# systemctl disable firewalld  
[root@perconal ~]# systemctl stop firewalld
```

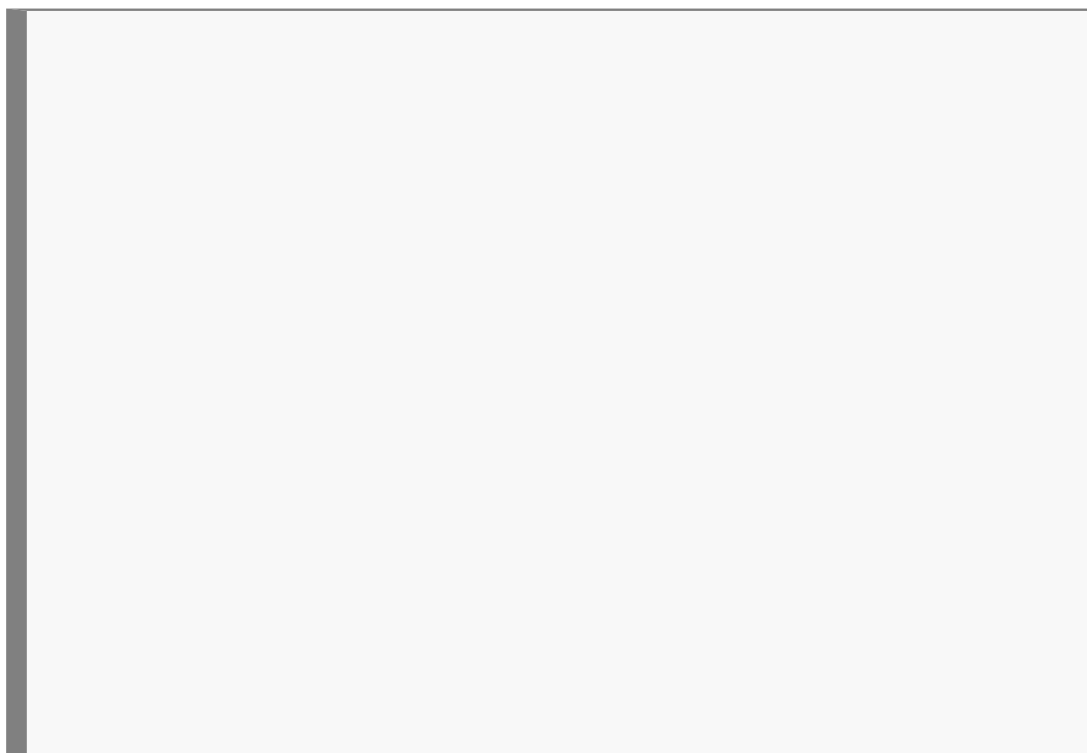

4. Disable SELinux:



```
[root@percona1 ~]# setenforce 0
```

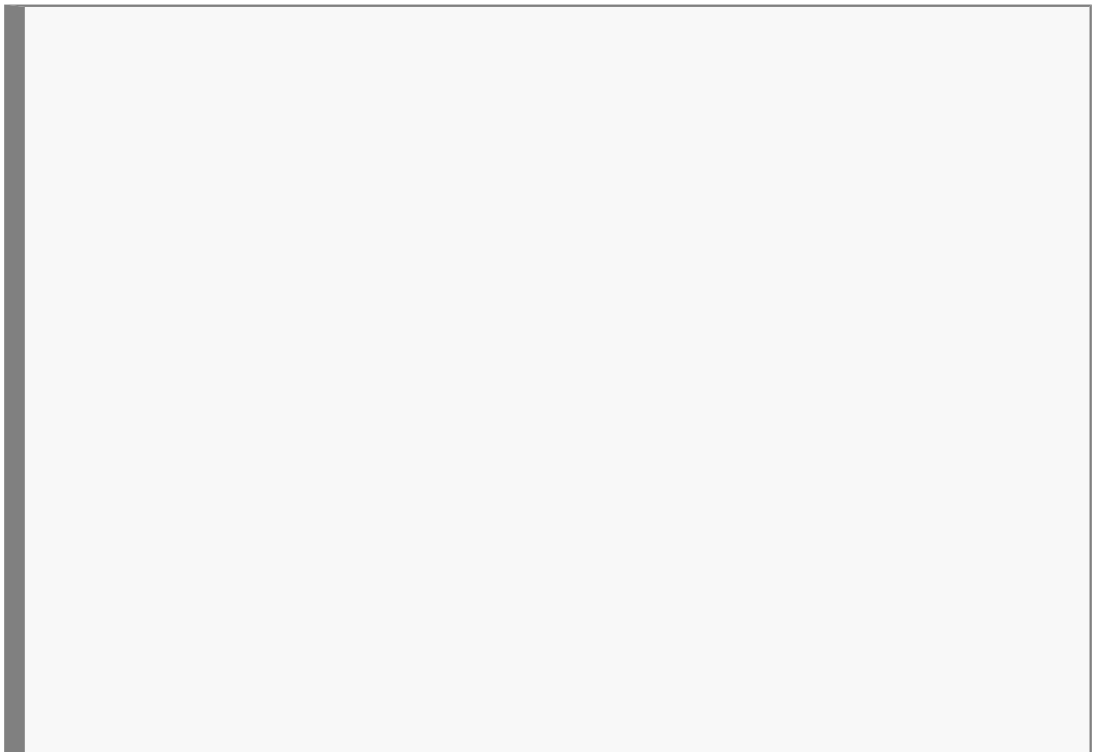

Change SELINUX parameter in `/etc/selinux/config` to 'disabled' for changes to take effect

permanently.



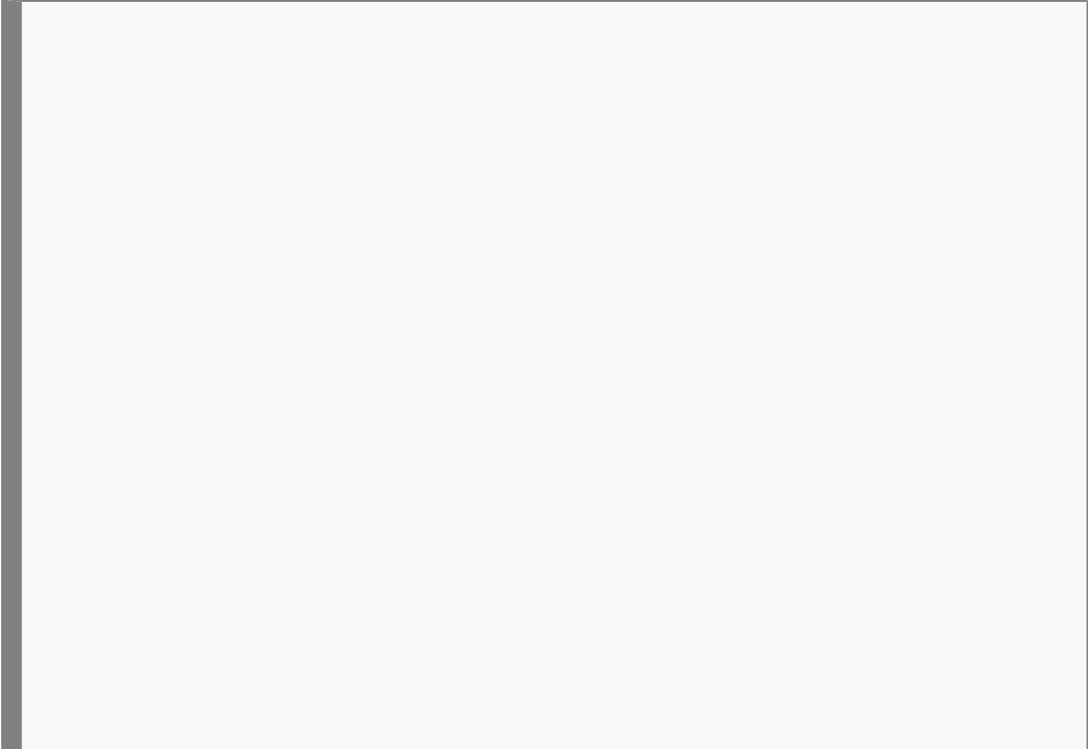
```
# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
#     enforcing - SELinux security policy is enforced.
#     permissive - SELinux prints warnings instead of enforcing.
#     disabled - No SELinux policy is loaded.
SELINUX=disabled
# SELINUXTYPE= can take one of three two values:
#     targeted - Targeted processes are protected,
#     minimum - Modification of targeted policy. Only selected
processes are protected.
#     mls - Multi Level Security protection.
SELINUXTYPE=targeted
```


5. Install Percona repository:



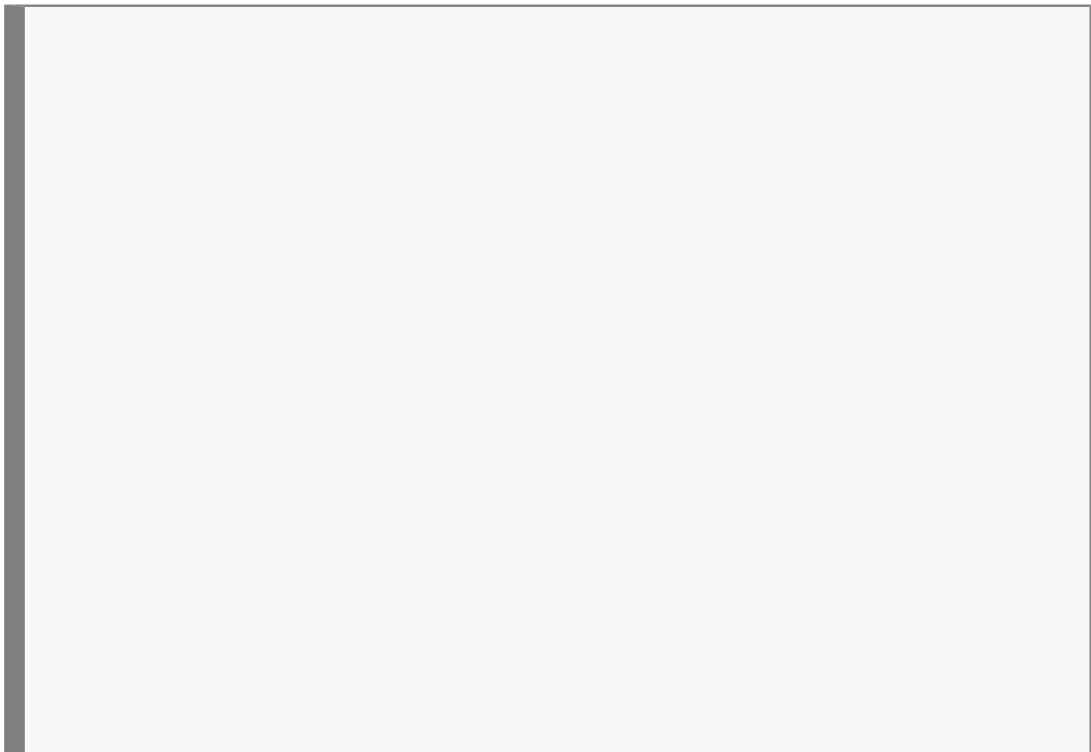
```
[root@percona1 ~]# sudo yum install  
http://www.percona.com/downloads/percona-release/redhat/0.1-4/per  
cona-release-0.1-4.noarch.rpm
```


6. Install Percona XtraDB cluster:



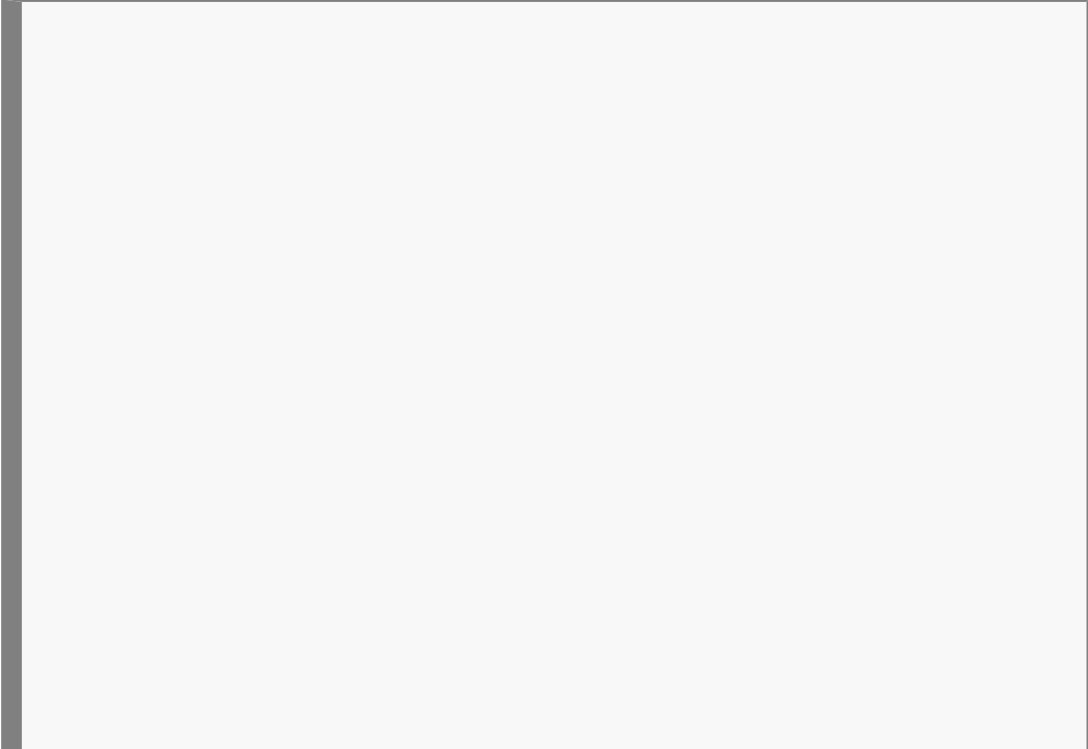
```
[root@percona1 ~]# sudo yum install Percona-XtraDB-Cluster-57
```


7. Start mysql service:



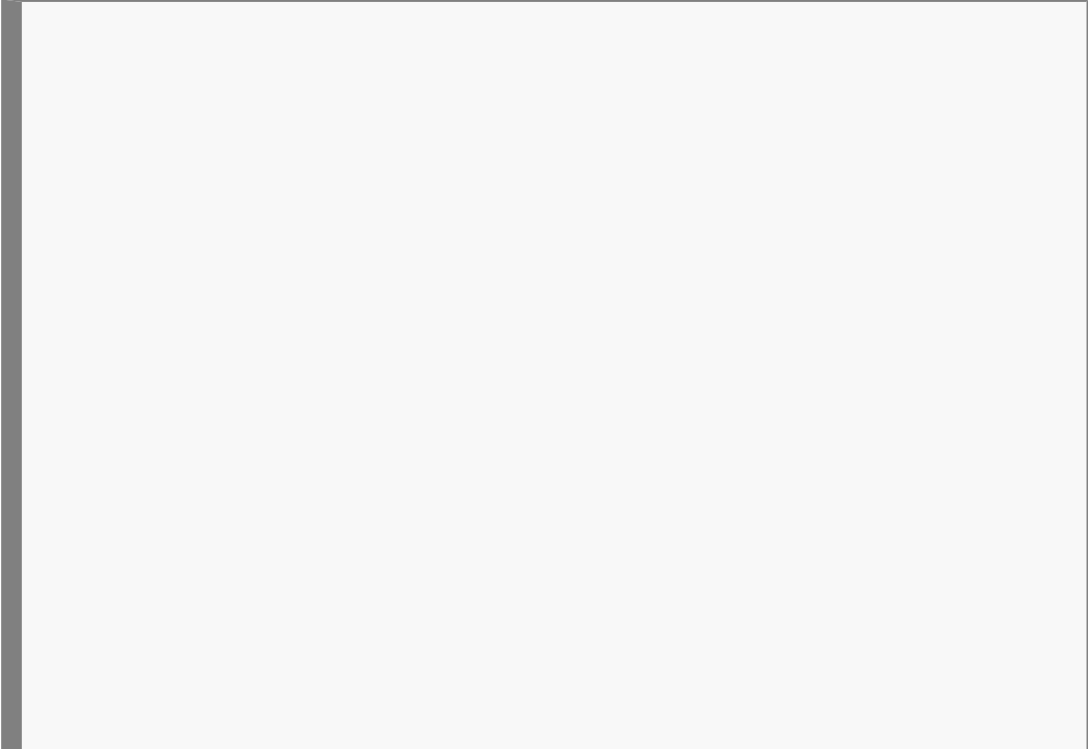
```
[root@perconal ~]# sudo service mysql start
```


8. Display temporary root password, generated during the installation:

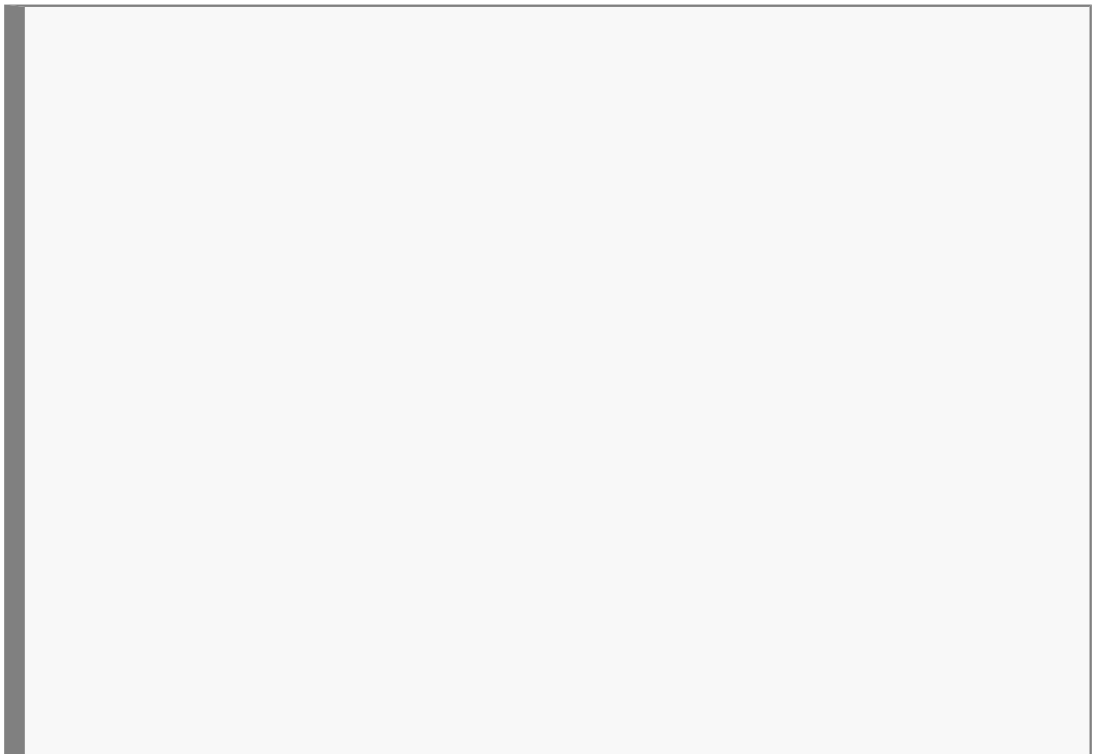



```
[root@percona1 ~]# sudo grep 'temporary password'  
/var/log/mysqlld.log
```


9. Change mysql root password:



```
[root@percona1 ~]# sudo grep 'temporary password'  
/var/log/mysqlld.log
```

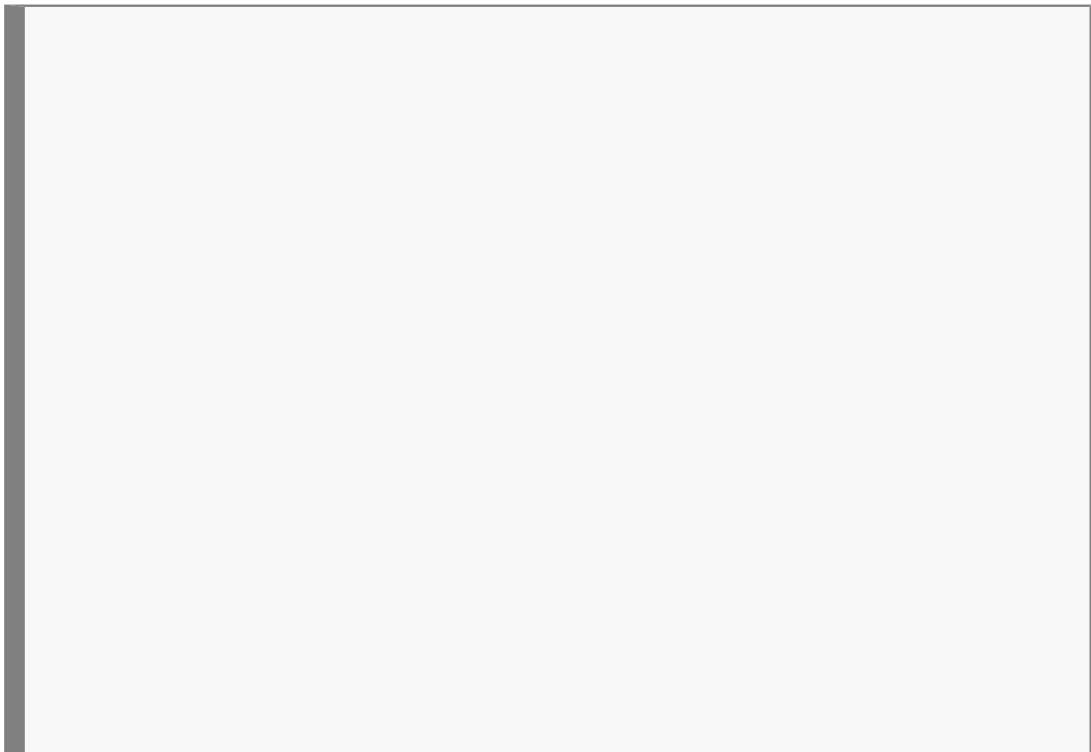

```
mysql> ALTER USER 'root'@'localhost' IDENTIFIED BY 'rootPass';
```

```
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> exit
```

```
Bye
```

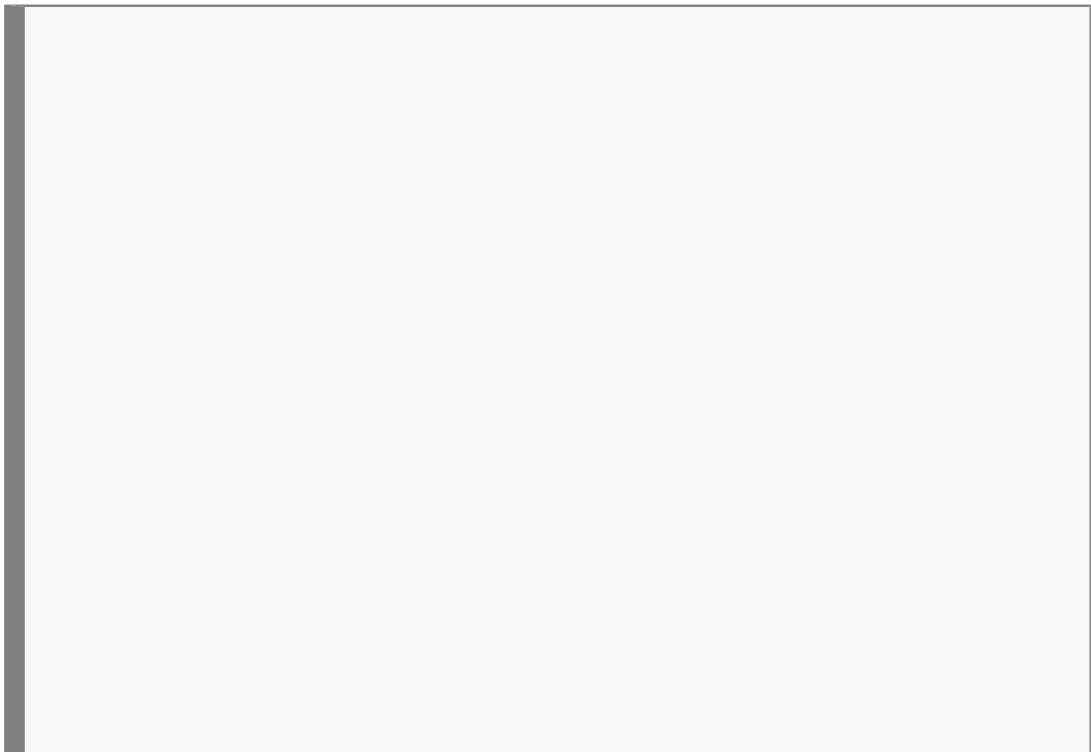

10. Stop mysql service:



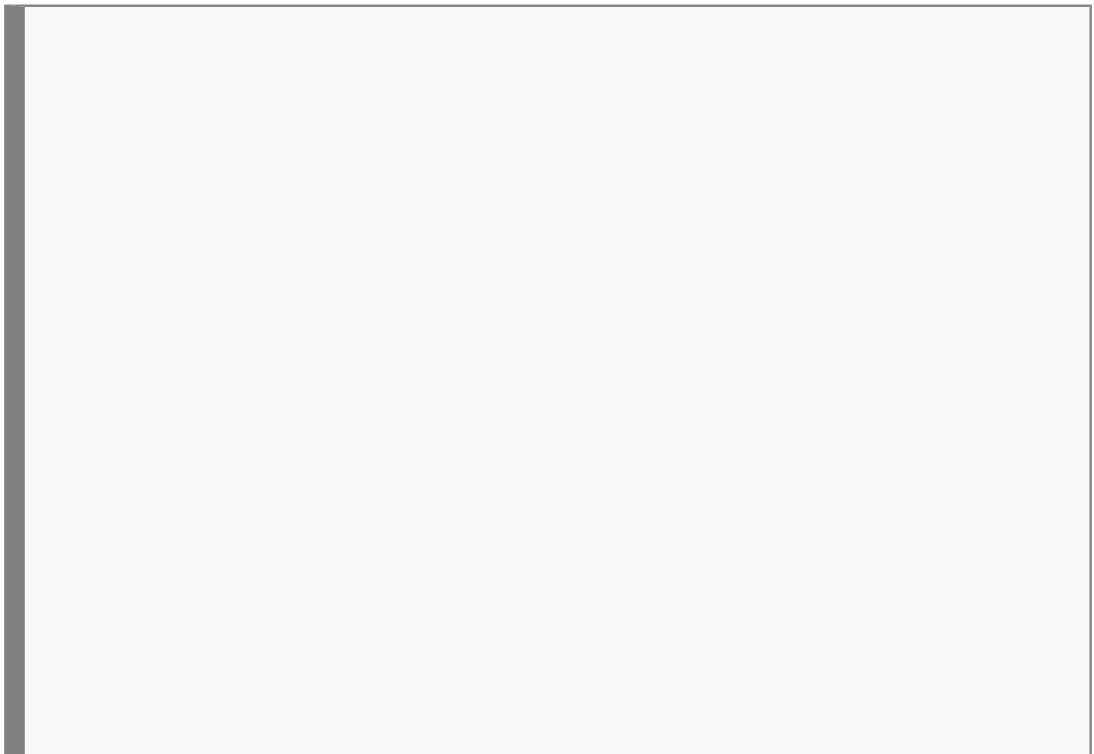
```
[root@perconal ~]# sudo service mysql stop
```


11. Configure all three Percona nodes like in the example files below, found under

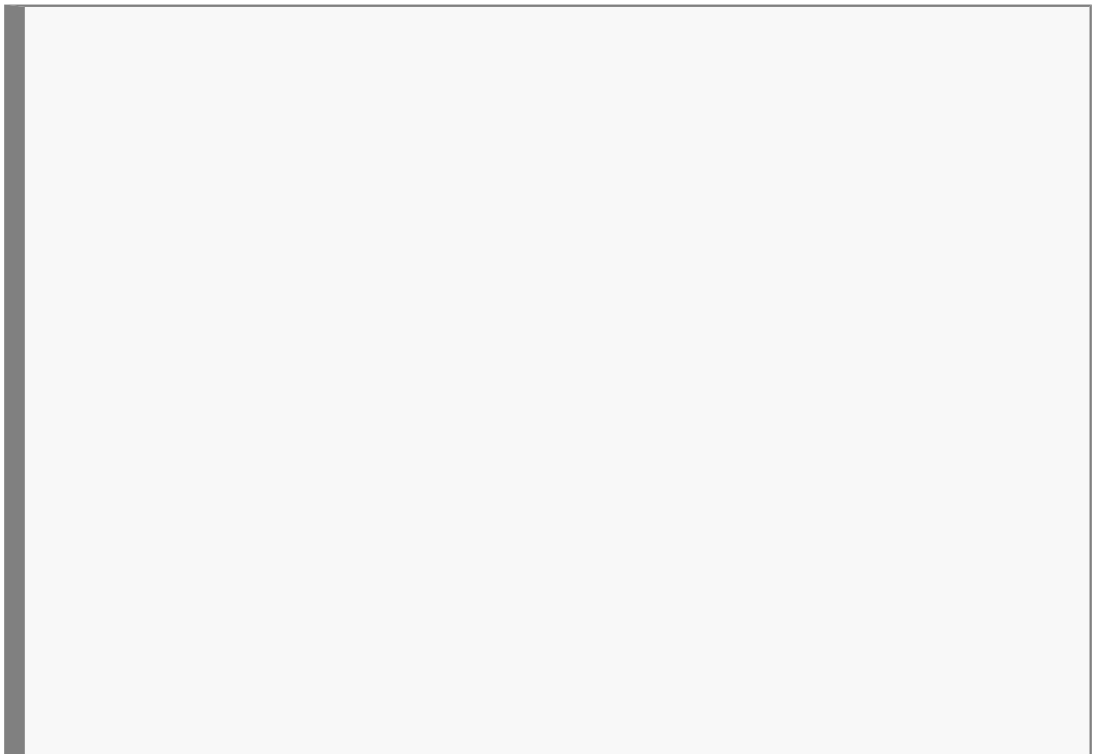
'/etc/percona-xtradb-cluster.conf.d/wsrep.cnf':



```
1 [root@percona ~]# cat /etc/percona-xtradb-cluster.conf.d/wsrep.cnf
2 [mysqld]
3 # Path to Galera library
4 wsrep_provider=/usr/lib64/galera3/libgalera_smm.so
5
6 # Cluster connection URL contains IPs of nodes
7 # If no IP is found, this implies that a new cluster needs to be
8 # created,
9 # In order to do that you need to bootstrap this node
10 wsrep_cluster_address=gcomm://192.168.1.222,192.168.1.223,192.168.1.224
11
12 # In order for Galera to work correctly binlog format should be ROW
13 binlog_format=ROW
14
15 # MyISAM storage engine has only experimental support
16 default_storage_engine=InnoDB
17
18 # Slave thread to use
19 wsrep_slave_threads= 8
20
21 wsrep_log_conflicts
22
23 # This changes how InnoDB autoincrement locks are managed and is a
24 # requirement for Galera
25 innodb_autoinc_lock_mode=2
26
27 # Node IP address
28 wsrep_node_address=192.168.1.222
29
30 # Cluster name
31 wsrep_cluster_name=pxc-cluster
32
33 # If wsrep_node_name is not specified, then system hostname will be
34 # used
35 wsrep_node_name=percona1
36
37 # pxc_strict_mode allowed values: DISABLED, PERMISSIVE, ENFORCING, MASTER
38 pxc_strict_mode=ENFORCING
39
40 # SST method
41 wsrep_sst_method=xtrabackup-v2
42
43 # Authentication for SST method
44 wsrep_sst_auth=sstuser:passwd
45
46 max_connections=9999999
47 max_connect_errors=9999999
```

```
1 [root@percona2 ~]# cat /etc/percona-xtradb-cluster.conf.d/wsrep.cnf
2 [mysqld]
3 # Path to Galera library
4 wsrep_provider=/usr/lib64/galera3/libgalera_smm.so
5
6 # Cluster connection URL contains IPs of nodes
7 # If no IP is found, this implies that a new cluster needs to be
8 # created,
9 # In order to do that you need to bootstrap this node
10 wsrep_cluster_address=gcomm://192.168.1.222,192.168.1.223,192.168.1.224
11
12 # In order for Galera to work correctly binlog format should be ROW
13 binlog_format=ROW
14
15 # MyISAM storage engine has only experimental support
16 default_storage_engine=InnoDB
17
18 # Slave thread to use
19 wsrep_slave_threads= 8
20
21 wsrep_log_conflicts
22
23 # This changes how InnoDB autoincrement locks are managed and is a
24 # requirement for Galera
25 innodb_autoinc_lock_mode=2
26
27 # Node IP address
28 wsrep_node_address=192.168.1.223
29
30 # Cluster name
31 wsrep_cluster_name=pxc-cluster
32
33 # If wsrep_node_name is not specified, then system hostname will be
34 # used
35 wsrep_node_name=percona2
36
37 # pxc_strict_mode allowed values: DISABLED, PERMISSIVE, ENFORCING, MASTER
38 pxc_strict_mode=ENFORCING
39
40 # SST method
41 wsrep_sst_method=xtrabackup-v2
42
43 # Authentication for SST method
44 wsrep_sst_auth=sstuser:passwd
45
46 max_connections=999999
47 max_connect_errors=999999
```

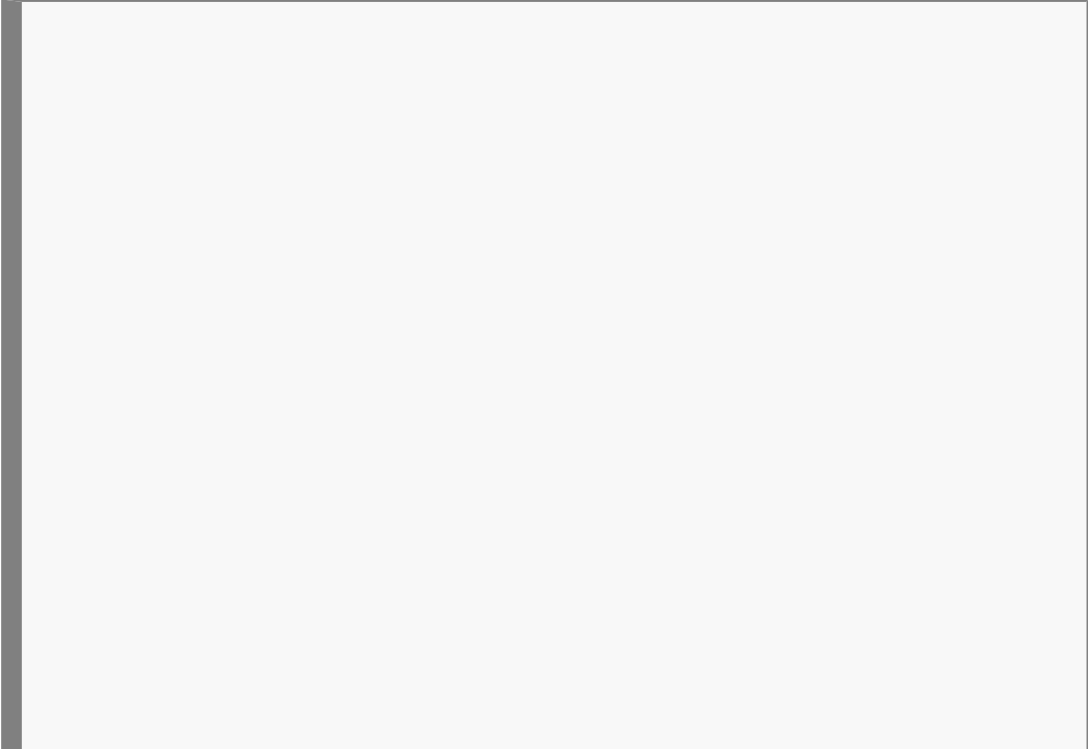




```
1 [root@percona3 ~]# cat /etc/percona-xtradb-cluster.conf.d/wsrep.cnf
2 [mysqld]
3 # Path to Galera library
4 wsrep_provider=/usr/lib64/galera3/libgalera_smm.so
5
6 # Cluster connection URL contains IPs of nodes
7 # If no IP is found, this implies that a new cluster needs to be
8 # created,
9 # In order to do that you need to bootstrap this node
10 wsrep_cluster_address=gcomm://192.168.1.222,192.168.1.223,192.168.1.224
11
12 # In order for Galera to work correctly binlog format should be ROW
13 binlog_format=ROW
14
15 # MyISAM storage engine has only experimental support
16 default_storage_engine=InnoDB
17
18 # Slave thread to use
19 wsrep_slave_threads= 8
20
21 wsrep_log_conflicts
22
23 # This changes how InnoDB autoincrement locks are managed and is a
24 # requirement for Galera
25 innodb_autoinc_lock_mode=2
26
27 # Node IP address
28 wsrep_node_address=192.168.1.224
29
30 # Cluster name
31 wsrep_cluster_name=pxc-cluster
32
33 # If wsrep_node_name is not specified, then system hostname will be
34 # used
35 wsrep_node_name=percona3
36
37 # pxc_strict_mode allowed values: DISABLED, PERMISSIVE, ENFORCING, MASTER
38 pxc_strict_mode=ENFORCING
39
40 # SST method
41 wsrep_sst_method=xtrabackup-v2
42
43 # Authentication for SST method
44 wsrep_sst_auth=sstuser:passwd
45
46 max_connections=999999
47 max_connect_errors=999999
```


Please note parameters `max_connections` and `max_connect_errors` added to the end of each

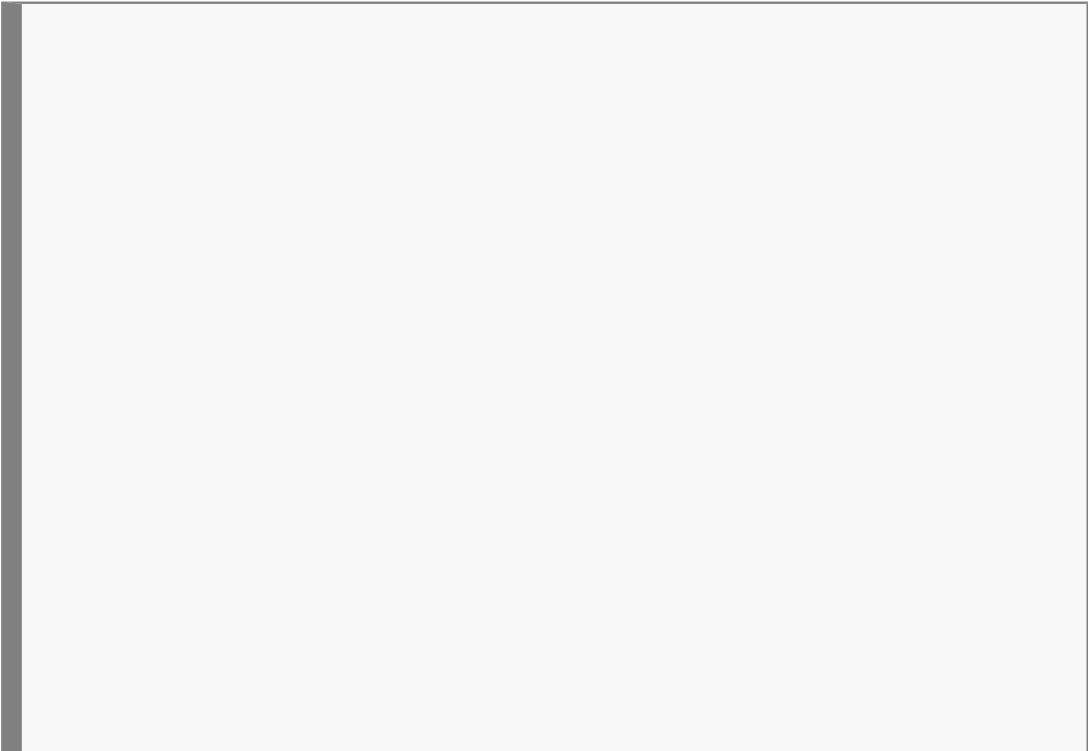
wsrep.cnf configuration file. This configuration is required by ScaleArc.

12. Bootstrap the first node, percona1:



```
[root@perconal ~]# systemctl start mysql@bootstrap.service
```

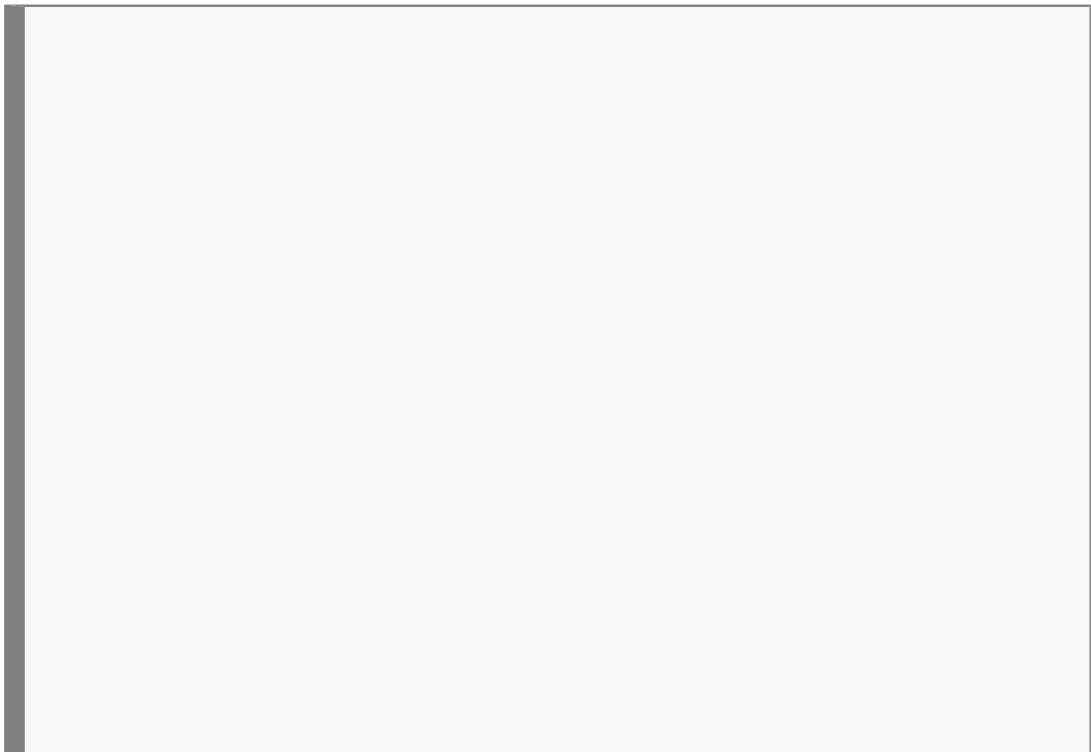

13. Check the cluster initialization status:



```
root@perconal> mysql -u root -p
mysql> show status like 'wsrep%';
```

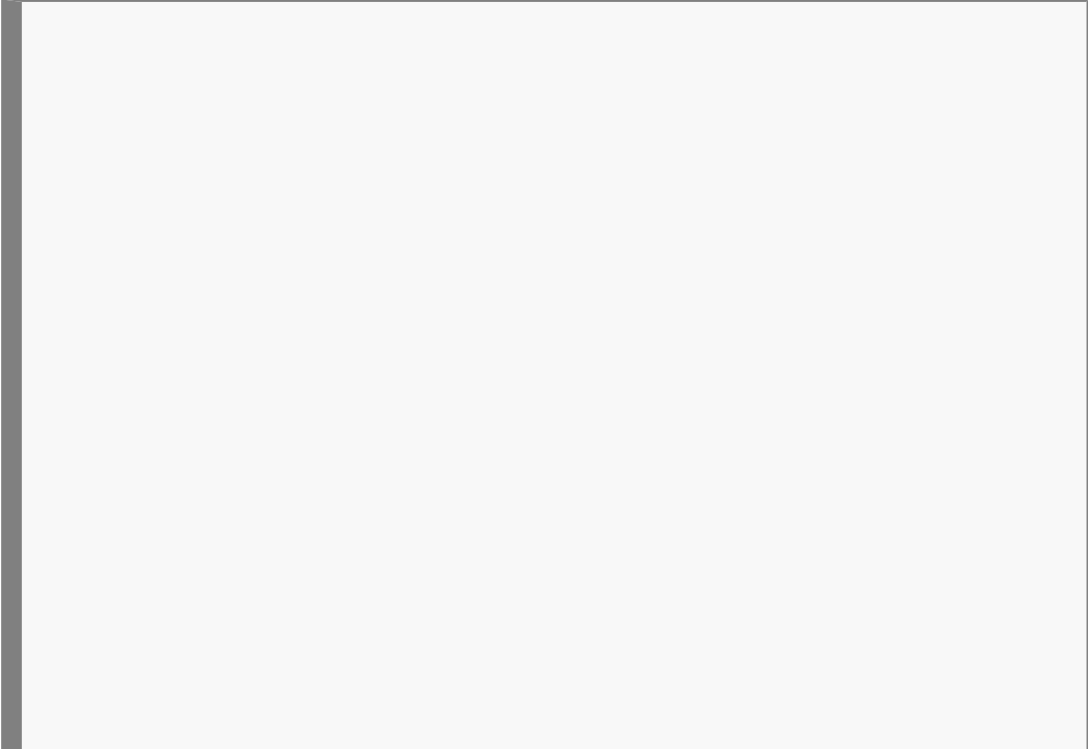
```
+-----+-----+
---+
| Variable_name          | Value
|
+-----+-----+
---+
| wsrep_local_state_uuid |
c2883338-834d-11e2-0800-03c9c68e41ec |
| ...                    | ...
| wsrep_local_state      | 4
| wsrep_local_state_comment | Synced
| ...                    | ...
| wsrep_cluster_size     | 1
| wsrep_cluster_status   | Primary
| wsrep_connected        | ON
| ...                    | ...
| wsrep_ready            | ON
|
+-----+-----+
---+
40 rows in set (0.01 sec)
```


14. Create replication user 'sstuser' :



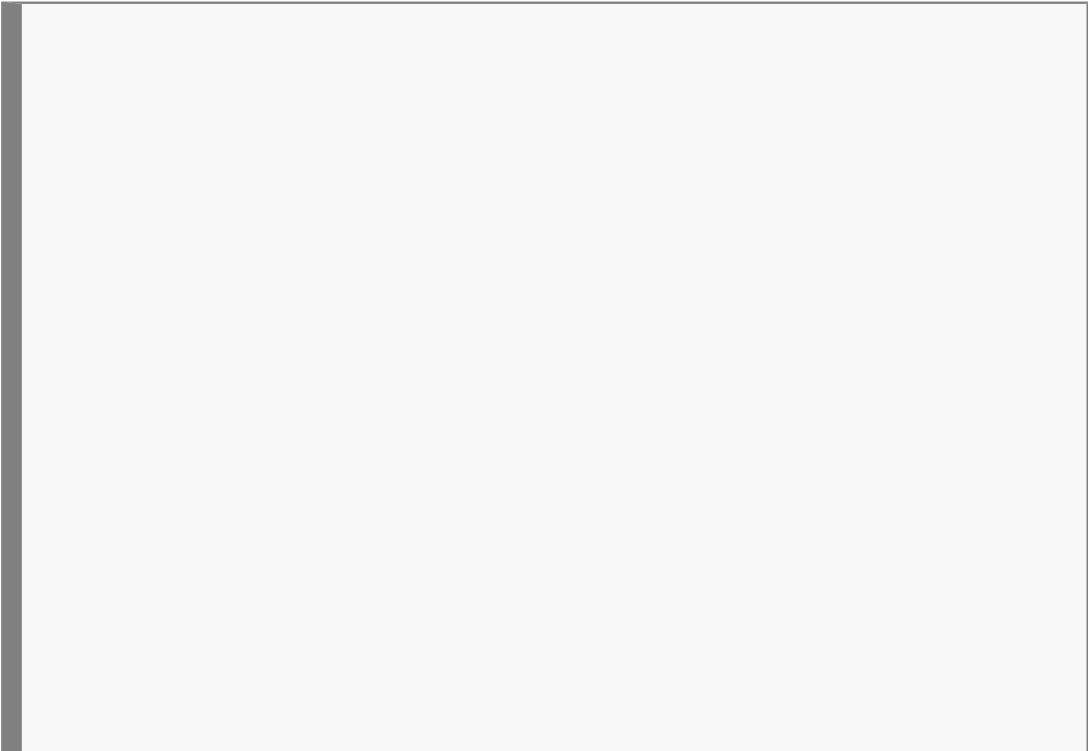
```
mysql> CREATE USER 'sstuser'@'localhost' IDENTIFIED BY  
'password';  
mysql> GRANT RELOAD, LOCK TABLES, PROCESS, REPLICATION CLIENT ON  
*.* TO 'sstuser'@'localhost';  
mysql> FLUSH PRIVILEGES;
```


15. Add second percona node to the cluster, using configuration as per point 11:



```
[root@percona2 ~]# sudo service mysql start
```


16. Check that node joined cluster:



```
[root@percona2 ~]# mysql -u root -p
mysql> show status like 'wsrep%';
```

```
+-----+-----+
---+
| Variable_name          | Value
|
+-----+-----+
---+
| wsrep_local_state_uuid |
c2883338-834d-11e2-0800-03c9c68e41ec |
| ...                    | ...
| wsrep_local_state      | 4
| wsrep_local_state_comment | Synced
| ...                    | ...
| wsrep_cluster_size     | 2
| wsrep_cluster_status   | Primary
| wsrep_connected        | ON
| ...                    | ...
| wsrep_ready            | ON
|
+-----+-----+
---+
40 rows in set (0.01 sec)
```

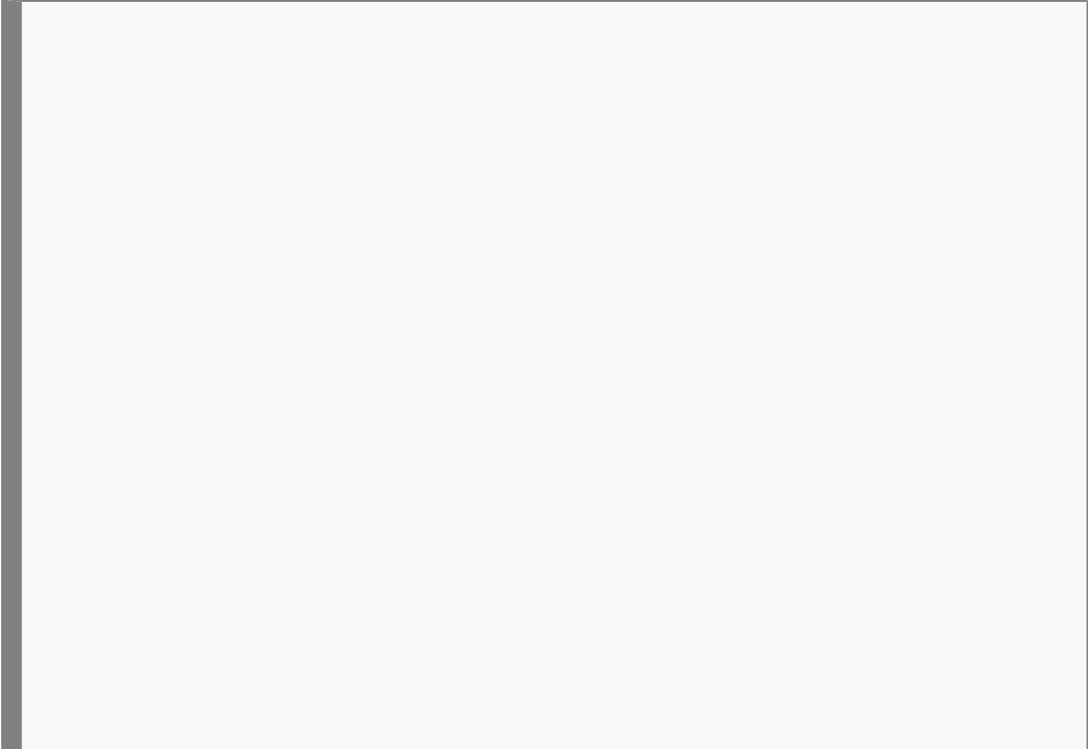

`wsrep_cluster_size` parameter increases by 1 upon node successfully joining the cluster.

17. Add third node to the Percona cluster repeating steps 15 and 16 on percona3:

wsrep_cluster_size parameter increases again by 1 upon node successfully joining cluster.

18. Verify replication:

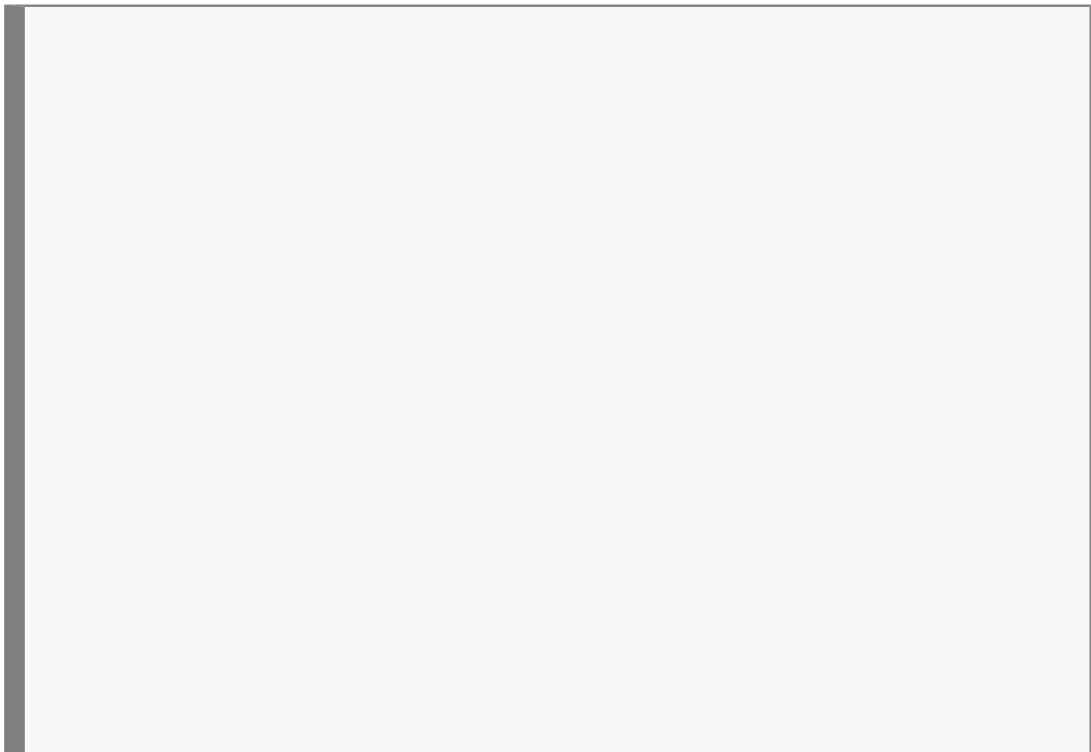
a. Create test database on second node percona2:



```
mysql> CREATE DATABASE percona;
```

```
Query OK, 1 row affected (0.01 sec)
```


b. Create table on third node percona3:



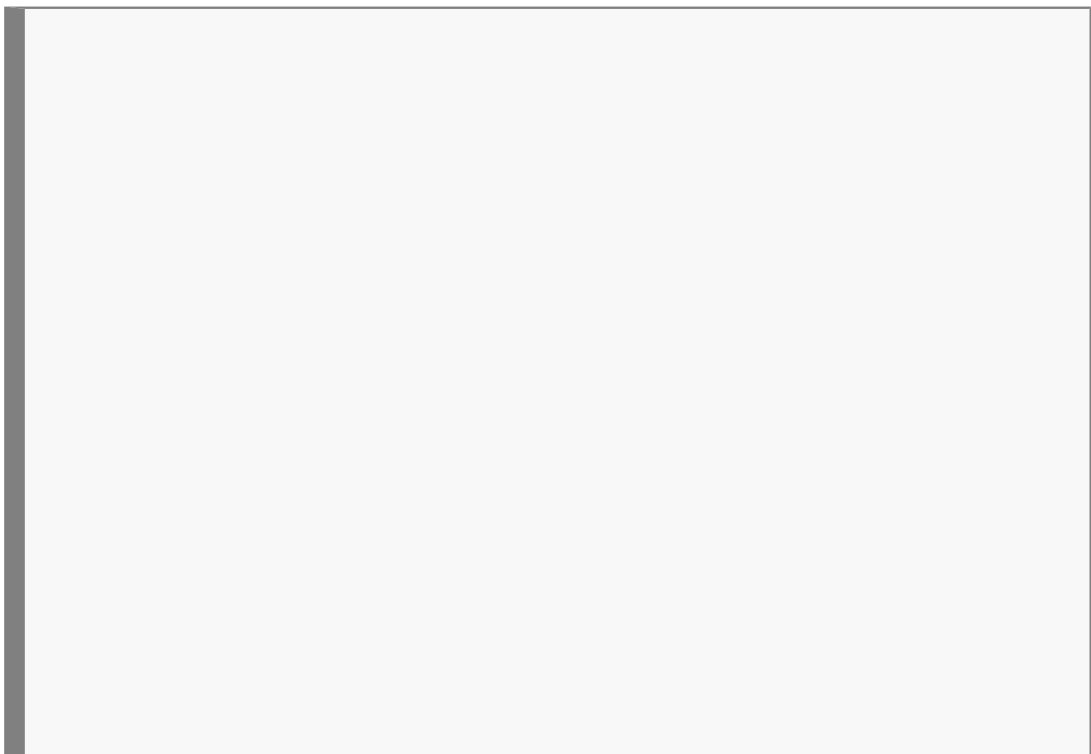
```
mysql> USE percona;
```

```
Database changed
```

```
mysql> CREATE TABLE example (node_id INT PRIMARY KEY, node_name  
VARCHAR(30));
```

```
Query OK, 0 rows affected (0.05 sec)
```

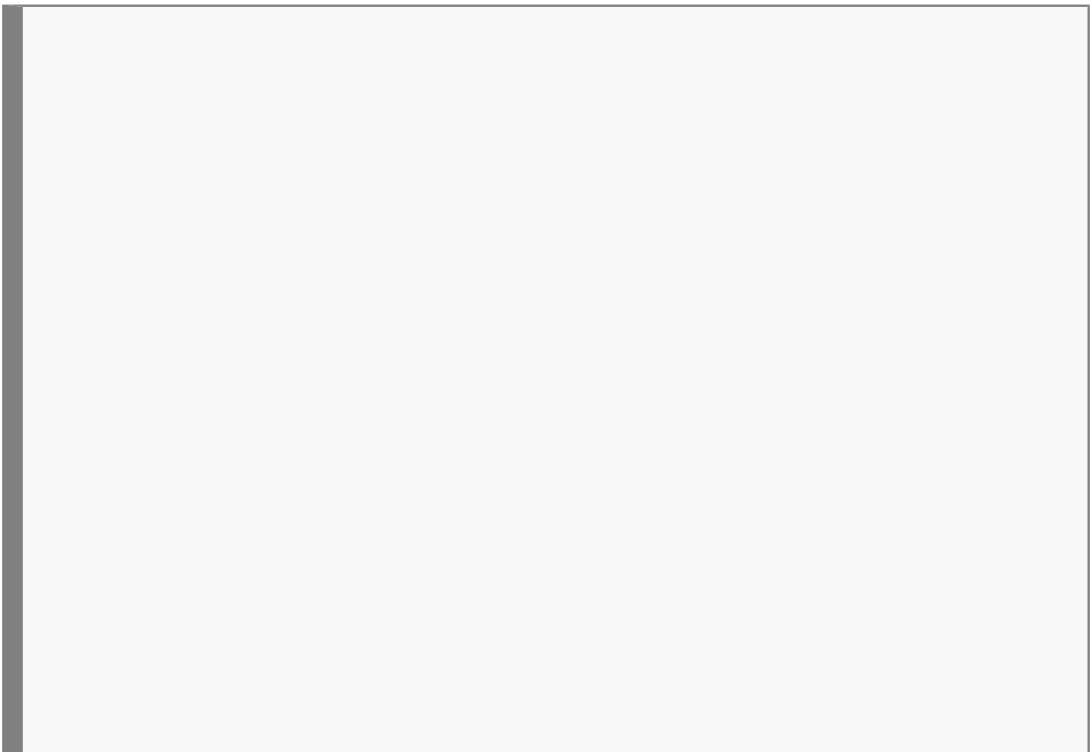

c. Insert records on the first node percona1:




```
mysql> INSERT INTO percona.example VALUES (1, 'percona1');
```

```
Query OK, 1 row affected (0.02 sec)
```


d. Retrieve table content on second node percona2:

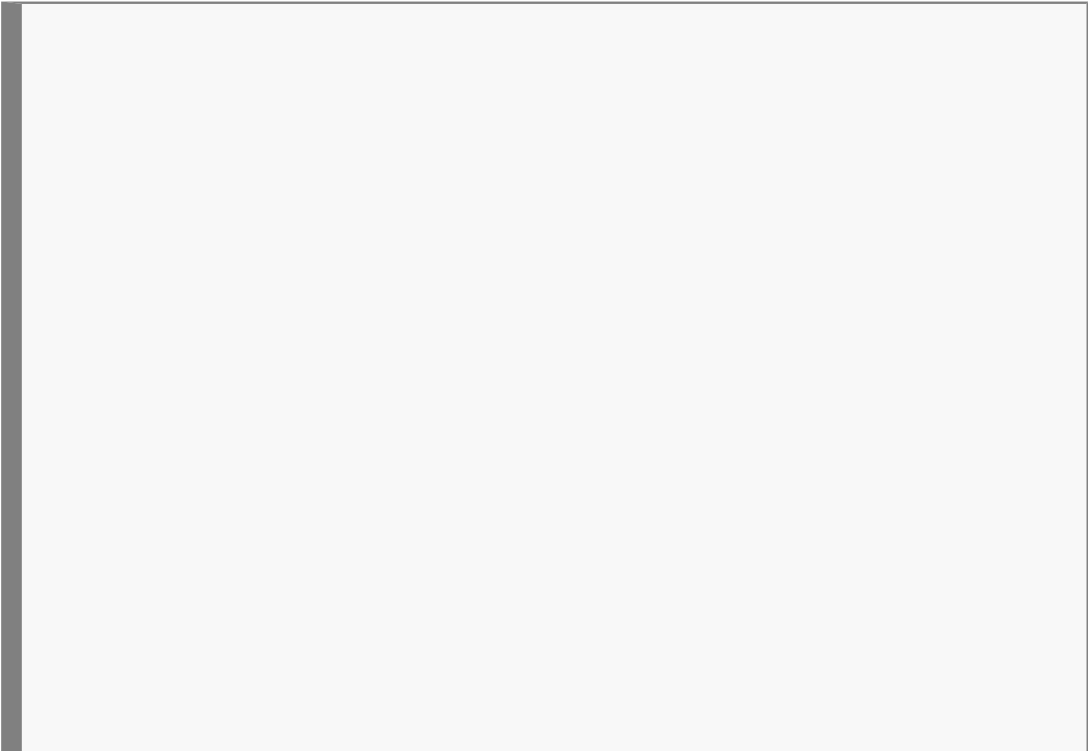


```
mysql> SELECT * FROM percona.example;
```

```
+-----+-----+  
| node_id | node_name |  
+-----+-----+  
|      1 | percona1  |  
+-----+-----+  
1 row in set (0.00 sec)
```


* CONFIGURE PERCONA XtraDB FOR ScaleArc

1. Create DB user before adding Percona cluster to Scalearc:




```
mysql> create user 'scalearc'@'%' identified by 'Test1234$';

mysql> GRANT SELECT, INSERT, UPDATE, CREATE, DROP, RELOAD, SUPER,
REPLICATION SLAVE, REPLICATION CLIENT ON *.* \
TO 'scalearc'@'%' identified by 'Test1234$' WITH GRANT OPTION;

mysql> create user 'scalearc'@'192.168.1.209' identified by
'Test1234$';

mysql> create user 'scalearc'@'192.168.1.210' identified by
'Test1234$';

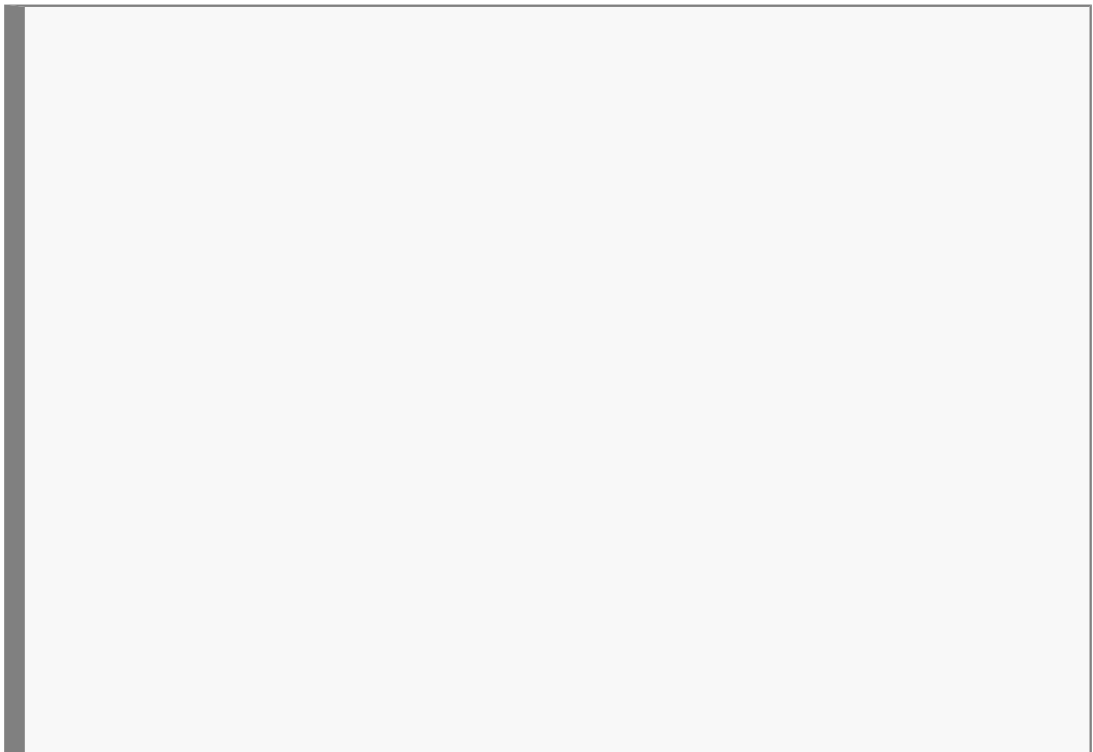
mysql> create user 'scalearc'@'192.168.1.211' identified by
'Test1234$';

mysql> GRANT SELECT, INSERT, UPDATE, CREATE, DROP, RELOAD, SUPER,
REPLICATION SLAVE, REPLICATION CLIENT ON *.* \
TO 'scalearc'@'192.168.1.209' WITH GRANT OPTION;

mysql> GRANT SELECT, INSERT, UPDATE, CREATE, DROP, RELOAD, SUPER,
REPLICATION SLAVE, REPLICATION CLIENT ON *.* \
TO 'scalearc'@'192.168.1.210' WITH GRANT OPTION;

mysql> GRANT SELECT, INSERT, UPDATE, CREATE, DROP, RELOAD, SUPER,
REPLICATION SLAVE, REPLICATION CLIENT ON *.* \
TO 'scalearc'@'192.168.1.211' WITH GRANT OPTION;
```

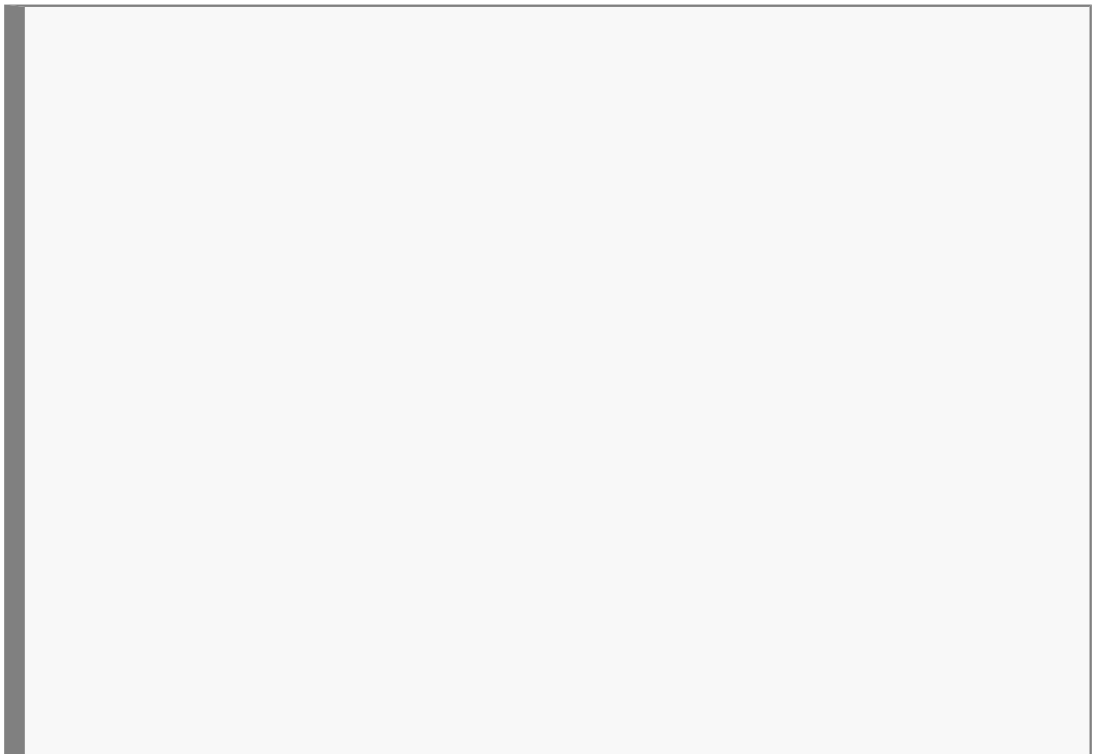

2. Additionally, create ScaleArc user for role change handling:



```
mysql> create user 'scalearc'@'192.168.1.222' identified by 'Test1234$';
```

```
mysql> create user 'scalearc'@'192.168.1.223' identified by 'Test1234$';
```

```
mysql> create user 'scalearc'@'192.168.1.224' identified by 'Test1234$';
```


```
mysql> GRANT SELECT, INSERT, UPDATE, CREATE, DROP, RELOAD, SUPER,  
REPLICATION SLAVE, REPLICATION CLIENT ON *.* \
```

```
TO 'scalearc'@'192.168.1.222' WITH GRANT OPTION;
```

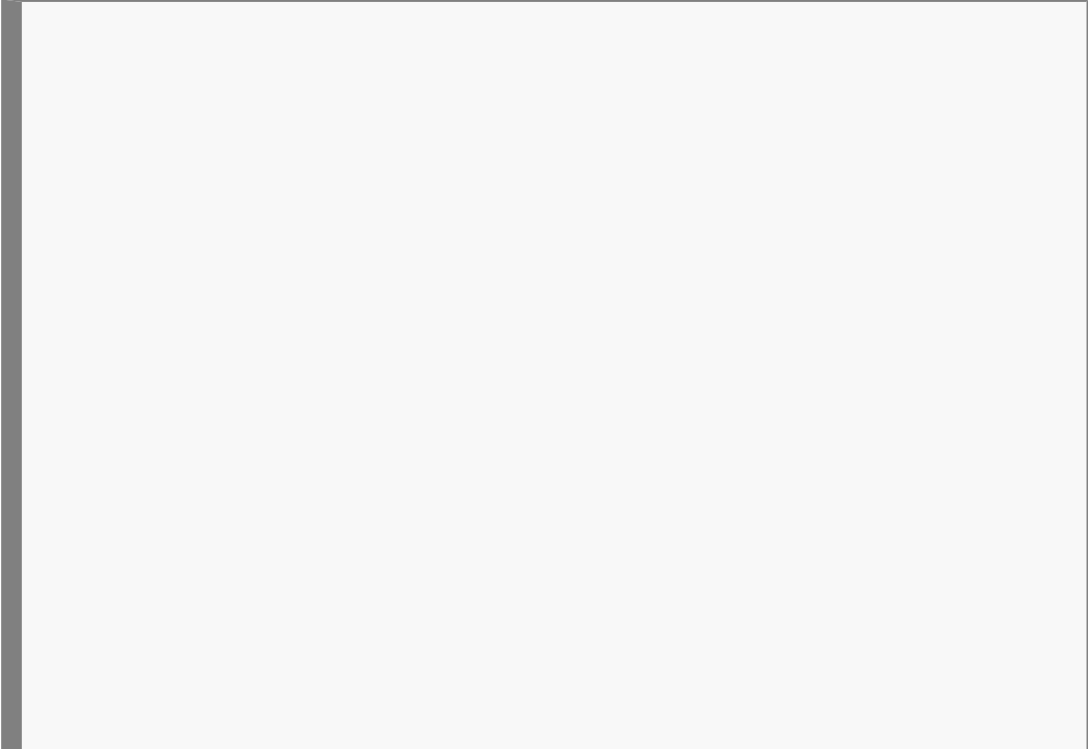
```
mysql> GRANT SELECT, INSERT, UPDATE, CREATE, DROP, RELOAD, SUPER,  
REPLICATION SLAVE, REPLICATION CLIENT ON *.* \
```

```
TO 'scalearc'@'192.168.1.223' WITH GRANT OPTION;
```

```
mysql> GRANT SELECT, INSERT, UPDATE, CREATE, DROP, RELOAD, SUPER,  
REPLICATION SLAVE, REPLICATION CLIENT ON *.* \
```

```
TO 'scalearc'@'192.168.1.224' WITH GRANT OPTION;
```


Output should be looking similar to the one below:



```
mysql> select user,host,Grant_priv from mysql.user;
```

```
+-----+-----+-----+
| user      | host          | Grant_priv |
+-----+-----+-----+
| root      | localhost     | Y          |
| mysql.sys | localhost     | N          |
| sstuser   | localhost     | N          |
| scalearc  | 192.168.1.224 | Y          |
| scalearc  | 192.168.1.223 | Y          |
| scalearc  | 192.168.1.222 | Y          |
| scalearc  | %             | Y          |
| scalearc  | 192.168.1.211 | Y          |
| scalearc  | 192.168.1.210 | Y          |
| scalearc  | 192.168.1.209 | Y          |
+-----+-----+-----+
```

```
10 rows in set (0.00 sec)
```


3. Adding Percona cluster to ScaleArc:

a. In ScaleArc, go to CLUSTERS menu and press '+Add Cluster' button.

b. Add each DB server from the cluster - percona1, percona2 and percona3 IP addresses,

using 'scalearc' user credentials.

c. Use server role 'Read + Write' for 'percona1', 'Standby + Read' for 'percona2' and

'percona3' nodes, for example.



d. And create a cluster by clicking 'Setup Cluster' button.



If you are experiencing issues with ScaleArc or with any of its features, please contact ScaleArc Support. We are available 24x7 by phone at 855 800 7225 or +1 408 412 7315.

For general support inquiries, you can also e-mail us at support@scalearc.com.

Permalink:
<https://support.scalearc.com/kb/articles/4375>

Related Pages



[CentOS 7 equivalents to deprecated networking commands](#)

[Why do i get a Pop up Message while adding Galera Cluster](#)

[AutoFailover - User permissions required on MySQL Database for ScaleArc Version 3.4 and higher](#)

[max_connect_errors=999999' on the MySQL server](#)

