



Installare il pacchetto software Tiebreaker

ONTAP MetroCluster

NetApp
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Installare il pacchetto software Tiebreaker

Scegliere la procedura di installazione

La procedura di installazione di Tiebreaker che segue dipende dalla versione di Tiebreaker che si sta installando.

Versione Tiebreaker	Vai a...
Tiebreaker 1,6	"Installare il Tiebreaker 1,6"
Tiebreaker 1,5	"Installare il Tiebreaker 1,5"
Tiebreaker 1,4	"Installare il Tiebreaker 1,4"

Installare il Tiebreaker 1,6

Eseguire una nuova installazione o un aggiornamento a tiebreaker 1,6 sul sistema operativo Linux host per monitorare le configurazioni MetroCluster.

A proposito di questa attività

- Il sistema storage deve eseguire ONTAP 9.12.1 o versione successiva.
- È possibile installare MetroCluster Tiebreaker come utente non root con privilegi amministrativi sufficienti per eseguire l'installazione di tiebreaker, creare tabelle e utenti e impostare la password utente.

Fasi

1. Scaricare il software MetroCluster Tiebreaker 1,6.

["MetroCluster Tiebreaker \(Download\) - Sito di supporto NetApp"](#)

2. Accedere all'host come utente root.
3. Se si sta eseguendo un aggiornamento, verificare la versione di tiebreaker in esecuzione:

L'esempio seguente mostra il tiebreaker 1,5.

```
[root@mcctb ~] # netapp-metrocluster-tiebreaker-software-cli
NetApp MetroCluster Tiebreaker :> version show
NetApp MetroCluster Tiebreaker 1.5: Sun Mar 13 09:59:02 IST 2022
NetApp MetroCluster Tiebreaker :> exit
```

4. Installare o aggiornare il software Tiebreaker.

Installare il Tiebreaker 1,6

Per una nuova installazione di Tiebreaker 1,6, procedere come segue.

Fasi

- Eseguire il seguente comando nella [root@mcctb ~] # prompt per iniziare l'installazione:

```
sh MetroClusterTiebreakerInstall-1.6
```

Il sistema visualizza i seguenti output per una corretta installazione:

```
Extracting the MetroCluster Tiebreaker installation/upgrade
archive
Install digest hash is Ok
Performing the MetroCluster Tiebreaker code signature check
Install code signature is Ok
Enter unix user account to use for the installation:
mcctbadminuser
Unix user account "mcctbadminuser" doesn't exist. Do you wish to
create "mcctbadminuser" user account? [Y/N]: y
useradd: warning: the home directory already exists.
Not copying any file from skel directory into it.
Creating mailbox file: File exists
Unix account "mcctbadminuser" created.
Changing password for user mcctbadminuser.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
MetroCluster Tiebreaker requires unix user account
"mcctbadminuser" to be added to the group "mcctbgrp" for admin
access.
Do you wish to add ? [Y/N]: y
Unix user account "mcctbadminuser" added to "mcctbgrp".
Do you wish to generate your own public-private key pair for
encrypting audit log? [Y/N]: y
Generating public-private key pair...
Configuring Vault...
Starting vault server...
==> Vault server configuration:

      Api Address: <api_address>
      Cgo: disabled
      Cluster Address: <cluster_address>
      Environment Variables: BASH_FUNC_which%%,
      DBUS_SESSION_BUS_ADDRESS, GODEBUG, HISTCONTROL, HISTSIZE, HOME,
```

```
HOSTNAME, HOST_ACCOUNT, LANG, LESSOPEN, LOGNAME, LS_COLORS, MAIL,
PATH, PWD, SHELL, SHLVL, SSH_CLIENT, SSH_CONNECTION, SSH_TTY,
STAF_TEMP_DIR, TERM, USER, VAULT_ADDR, VAULT_TOKEN,
XDG_RUNTIME_DIR, XDG_SESSION_ID, _, vault_Addr, which_declare
    Go Version: go1.20.5
    Listener 1: tcp (addr: "0.0.0.0:8200", cluster
address: "0.0.0.0:8201", max_request_duration: "1m30s",
max_request_size: "33554432", tls: "enabled")
    Log Level:
        Mlock: supported: true, enabled: true
    Recovery Mode: false
    Storage: file
    Version: Vault v1.14.0, built 2023-06-
19T11:40:23Z
    Version Sha:
13a649f860186dffe3f3a4459814d87191efc321
```

==> Vault server started! Log data will stream in below:

```
2023-11-23T15:14:28.532+0530 [INFO] proxy environment:
http_proxy="" https_proxy="" no_proxy=""
2023-11-23T15:14:28.577+0530 [INFO] core: Initializing version
history cache for core
2023-11-23T15:14:38.552+0530 [INFO] core: security barrier not
initialized
2023-11-23T15:14:38.552+0530 [INFO] core: seal configuration
missing, not initialized
2023-11-23T15:14:38.554+0530 [INFO] core: security barrier not
initialized
2023-11-23T15:14:38.555+0530 [INFO] core: security barrier
initialized: stored=1 shares=5 threshold=3
2023-11-23T15:14:38.556+0530 [INFO] core: post-unseal setup
starting
2023-11-23T15:14:38.577+0530 [INFO] core: loaded wrapping token
key
2023-11-23T15:14:38.577+0530 [INFO] core: successfully setup
plugin catalog: plugin-directory=""
2023-11-23T15:14:38.577+0530 [INFO] core: no mounts; adding
default mount table
2023-11-23T15:14:38.578+0530 [INFO] core: successfully mounted:
type=cubbyhole version="v1.14.0+builtin.vault" path=cubbyhole/
namespace="ID: root. Path: "
2023-11-23T15:14:38.578+0530 [INFO] core: successfully mounted:
type=system version="v1.14.0+builtin.vault" path=sys/
namespace="ID: root. Path: "
2023-11-23T15:14:38.578+0530 [INFO] core: successfully mounted:
```

```

type=identity version="v1.14.0+builtin.vault" path=identity/
namespace="ID: root. Path: "
2023-11-23T15:14:38.581+0530 [INFO] core: successfully mounted:
type=token version="v1.14.0+builtin.vault" path=token/
namespace="ID: root. Path: "
2023-11-23T15:14:38.581+0530 [INFO] rollback: starting rollback
manager
2023-11-23T15:14:38.581+0530 [INFO] core: restoring leases
2023-11-23T15:14:38.582+0530 [INFO] expiration: lease restore
complete
2023-11-23T15:14:38.582+0530 [INFO] identity: entities restored
2023-11-23T15:14:38.582+0530 [INFO] identity: groups restored
2023-11-23T15:14:38.583+0530 [INFO] core: Recorded vault
version: vault version=1.14.0 upgrade time="2023-11-23
09:44:38.582881162 +0000 UTC" build date=2023-06-19T11:40:23Z
2023-11-23T15:14:38.583+0530 [INFO] core: usage gauge collection
is disabled
2023-11-23T15:14:38.998+0530 [INFO] core: post-unseal setup
complete
2023-11-23T15:14:38.999+0530 [INFO] core: root token generated
2023-11-23T15:14:38.999+0530 [INFO] core: pre-seal teardown
starting
2023-11-23T15:14:38.999+0530 [INFO] rollback: stopping rollback
manager
2023-11-23T15:14:38.999+0530 [INFO] core: pre-seal teardown
complete
2023-11-23T15:14:39.311+0530 [INFO] core.cluster-listener.tcp:
starting listener: listener_address=0.0.0.0:8201
2023-11-23T15:14:39.311+0530 [INFO] core.cluster-listener:
serving cluster requests: cluster_listen_address=[:]:8201
2023-11-23T15:14:39.312+0530 [INFO] core: post-unseal setup
starting
2023-11-23T15:14:39.312+0530 [INFO] core: loaded wrapping token
key
2023-11-23T15:14:39.312+0530 [INFO] core: successfully setup
plugin catalog: plugin-directory=""
2023-11-23T15:14:39.313+0530 [INFO] core: successfully mounted:
type=system version="v1.14.0+builtin.vault" path=sys/
namespace="ID: root. Path: "
2023-11-23T15:14:39.313+0530 [INFO] core: successfully mounted:
type=identity version="v1.14.0+builtin.vault" path=identity/
namespace="ID: root. Path: "
2023-11-23T15:14:39.313+0530 [INFO] core: successfully mounted:
type=cubbyhole version="v1.14.0+builtin.vault" path=cubbyhole/
namespace="ID: root. Path: "
2023-11-23T15:14:39.314+0530 [INFO] core: successfully mounted:

```

```

type=token version="v1.14.0+builtin.vault" path=token/
namespace="ID: root. Path: "
2023-11-23T15:14:39.314+0530 [INFO] rollback: starting rollback
manager
2023-11-23T15:14:39.314+0530 [INFO] core: restoring leases
2023-11-23T15:14:39.314+0530 [INFO] identity: entities restored
2023-11-23T15:14:39.314+0530 [INFO] expiration: lease restore
complete
2023-11-23T15:14:39.314+0530 [INFO] identity: groups restored
2023-11-23T15:14:39.315+0530 [INFO] core: usage gauge collection
is disabled
2023-11-23T15:14:39.316+0530 [INFO] core: post-unseal setup
complete
2023-11-23T15:14:39.316+0530 [INFO] core: vault is unsealed
Success! Uploaded policy: mcctb-policy
2023-11-23T15:14:39.795+0530 [INFO] core: enabled credential
backend: path=appprole/ type=appprole version=""
Success! Enabled approle auth method at: approle/
2023-11-23T15:14:39.885+0530 [INFO] core: successful mount:
namespace="" path=mcctb/ type=kv version=""
Success! Enabled the kv secrets engine at: mcctb/
Success! Data written to: auth/appprole/role/mcctb-app
Installing the NetApp-MetroCluster-Tiebreaker-Software-1.6-
1.x86_64.rpm
Preparing... #
##### # [100%]

Updating / installing...

1:NetApp-MetroCluster-Tiebreaker-So#
##### # [100%]
Performing file integrity check
etc/cron.weekly/metrocluster-tiebreaker-support is Ok
etc/cron.weekly/metrocluster-tiebreaker-support-cov is Ok
etc/init.d/netapp-metrocluster-tiebreaker-software is Ok
etc/init.d/netapp-metrocluster-tiebreaker-software-cov is Ok
etc/logrotate.d/mcctb is Ok
opt/netapp/mcctb/lib/common/activation-1.1.1.jar is Ok
opt/netapp/mcctb/lib/common/aopalliance.jar is Ok
opt/netapp/mcctb/lib/common/args4j.jar is Ok
opt/netapp/mcctb/lib/common/aspectjrt.jar is Ok
opt/netapp/mcctb/lib/common/aspectjweaver.jar is Ok
opt/netapp/mcctb/lib/common/asup.jar is Ok
opt/netapp/mcctb/lib/common/bcpkix-jdk15on.jar is Ok
opt/netapp/mcctb/lib/common/bcprov-jdk15on.jar is Ok
opt/netapp/mcctb/lib/common/bcprov-jdk18on.jar is Ok

```

opt/netapp/mcctb/lib/common/bctls-fips-1.0.13.jar is Ok
opt/netapp/mcctb/lib/common/bctls-jdk18on.jar is Ok
opt/netapp/mcctb/lib/common/bcutil-jdk18on.jar is Ok
opt/netapp/mcctb/lib/common/cglib.jar is Ok
opt/netapp/mcctb/lib/common/commons-codec.jar is Ok
opt/netapp/mcctb/lib/common/commons-collections4.jar is Ok
opt/netapp/mcctb/lib/common/commons-compress.jar is Ok
opt/netapp/mcctb/lib/common/commons-daemon.jar is Ok
opt/netapp/mcctb/lib/common/commons-daemon.src.jar is Ok
opt/netapp/mcctb/lib/common/commons-dbcp2.jar is Ok
opt/netapp/mcctb/lib/common/commons-io.jar is Ok
opt/netapp/mcctb/lib/common/commons-lang3.jar is Ok
opt/netapp/mcctb/lib/common/commons-logging.jar is Ok
opt/netapp/mcctb/lib/common/commons-pool2.jar is Ok
opt/netapp/mcctb/lib/common/guava.jar is Ok
opt/netapp/mcctb/lib/common/httpclient.jar is Ok
opt/netapp/mcctb/lib/common/httpcore.jar is Ok
opt/netapp/mcctb/lib/common/jakarta.activation.jar is Ok
opt/netapp/mcctb/lib/common/jakarta.xml.bind-api.jar is Ok
opt/netapp/mcctb/lib/common/java-xmlbuilder.jar is Ok
opt/netapp/mcctb/lib/common/javax.inject.jar is Ok
opt/netapp/mcctb/lib/common/jaxb-api-2.3.1.jar is Ok
opt/netapp/mcctb/lib/common/jaxb-core.jar is Ok
opt/netapp/mcctb/lib/common/jaxb-impl.jar is Ok
opt/netapp/mcctb/lib/common/jline.jar is Ok
opt/netapp/mcctb/lib/common/jna.jar is Ok
opt/netapp/mcctb/lib/common/joda-time.jar is Ok
opt/netapp/mcctb/lib/common/jsch.jar is Ok
opt/netapp/mcctb/lib/common/json.jar is Ok
opt/netapp/mcctb/lib/common/jsvc.zip is Ok
opt/netapp/mcctb/lib/common/junixsocket-common.jar is Ok
opt/netapp/mcctb/lib/common/junixsocket-native-common.jar is Ok
opt/netapp/mcctb/lib/common/logback-classic.jar is Ok
opt/netapp/mcctb/lib/common/logback-core.jar is Ok
opt/netapp/mcctb/lib/common/mail-1.6.2.jar is Ok
opt/netapp/mcctb/lib/common/mariadb-java-client.jar is Ok
opt/netapp/mcctb/lib/common/mcctb-mib.jar is Ok
opt/netapp/mcctb/lib/common/mcctb.jar is Ok
opt/netapp/mcctb/lib/common/mockito-core.jar is Ok
opt/netapp/mcctb/lib/common/slf4j-api.jar is Ok
opt/netapp/mcctb/lib/common/snmp4j.jar is Ok
opt/netapp/mcctb/lib/common/spring-aop.jar is Ok
opt/netapp/mcctb/lib/common/spring-beans.jar is Ok
opt/netapp/mcctb/lib/common/spring-context-support.jar is Ok
opt/netapp/mcctb/lib/common/spring-context.jar is Ok
opt/netapp/mcctb/lib/common/spring-core.jar is Ok


```
opt/netapp/mcctb/lib/common/spring-expression.jar is Ok
opt/netapp/mcctb/lib/common/spring-web.jar is Ok
opt/netapp/mcctb/lib/common/vault-java-driver.jar is Ok
opt/netapp/mcctb/lib/common/xz.jar is Ok
opt/netapp/mcctb/lib/org.jacoco.agent-0.8.8-runtime.jar is Ok
opt/netapp/mcctb/bin/mcctb-asup-invoke is Ok
opt/netapp/mcctb/bin/mcctb_postrotate is Ok
opt/netapp/mcctb/bin/netapp-metrocluster-tiebreaker-software-cli
is Ok
/
```

```
Synchronizing state of netapp-metrocluster-tiebreaker-
software.service with SysV service script with
/usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable netapp-
metrocluster-tiebreaker-software
Created symlink /etc/systemd/system/multi-
user.target.wants/netapp-metrocluster-tiebreaker-software.service
→ /etc/systemd/system/netapp-metrocluster-tiebreaker-
software.service.
```

```
Attempting to start NetApp MetroCluster Tiebreaker software
services
Started NetApp MetroCluster Tiebreaker software services
Successfully installed NetApp MetroCluster Tiebreaker software
version 1.6.
```

Aggiornamento da tiebreaker 1,5 a 1,6

Per aggiornare la versione software di Tiebreaker 1,5 a Tiebreaker 1,6, procedere come segue.

Fasi

- Eseguire il seguente comando nella [root@mcctb ~] # richiesta di aggiornamento del software:

```
sh MetroClusterTiebreakerInstall-1.6
```

Il sistema visualizza il seguente output per un aggiornamento riuscito:

```
Extracting the MetroCluster Tiebreaker installation/upgrade
archive
Install digest hash is Ok
Performing the MetroCluster Tiebreaker code signature check
Install code signature is Ok
```

```

Enter database user name : root

Please enter database password for root
Enter password:

Password updated successfully in the database.

Do you wish to generate your own public-private key pair for
encrypting audit log? [Y/N]: y
Generating public-private key pair...
Configuring Vault...
==> Vault shutdown triggered
2023-07-21T00:30:22.335+0530 [INFO]   core: marked as sealed
2023-07-21T00:30:22.335+0530 [INFO]   core: pre-seal teardown
starting
2023-07-21T00:30:22.335+0530 [INFO]   rollback: stopping rollback
manager
2023-07-21T00:30:22.335+0530 [INFO]   core: pre-seal teardown
complete
2023-07-21T00:30:22.335+0530 [INFO]   core: stopping cluster
listeners
2023-07-21T00:30:22.335+0530 [INFO]   core.cluster-listener:
forwarding rpc listeners stopped
2023-07-21T00:30:22.375+0530 [INFO]   core.cluster-listener: rpc
listeners successfully shut down
2023-07-21T00:30:22.375+0530 [INFO]   core: cluster listeners
successfully shut down
2023-07-21T00:30:22.376+0530 [INFO]   core: vault is sealed
Starting vault server...
==> Vault server configuration:

      Api Address: <api_address>
      Cgo: disabled
      Cluster Address: <cluster_address>
      Environment Variables: BASH_FUNC_which%%,
DBUS_SESSION_BUS_ADDRESS, GODEBUG, HISTCONTROL, HISTSIZE, HOME,
HOSTNAME, HOST_ACCOUNT, LANG, LESSOPEN, LOGNAME, LS_COLORS, MAIL,
PATH, PWD, SHELL, SHLVL, SSH_CLIENT, SSH_CONNECTION, SSH_TTY,
STAF_TEMP_DIR, TERM, USER, VAULT_ADDR, VAULT_TOKEN,
XDG_RUNTIME_DIR, XDG_SESSION_ID, _, vault_Addr, which_declare
      Go Version: go1.20.5
      Listener 1: tcp (addr: "0.0.0.0:8200", cluster
address: "0.0.0.0:8201", max_request_duration: "1m30s",
max_request_size: "33554432", tls: "enabled")
      Log Level:
      Mlock: supported: true, enabled: true

```

```
Recovery Mode: false
Storage: file
Version: Vault v1.14.0, built 2023-06-
19T11:40:23Z
Version Sha:
13a649f860186dffe3f3a4459814d87191efc321

==> Vault server started! Log data will stream in below:

2023-07-21T00:30:33.065+0530 [INFO] proxy environment:
http_proxy="" https_proxy="" no_proxy=""
2023-07-21T00:30:33.098+0530 [INFO] core: Initializing version
history cache for core
2023-07-21T00:30:43.092+0530 [INFO] core: security barrier not
initialized
2023-07-21T00:30:43.092+0530 [INFO] core: seal configuration
missing, not initialized
2023-07-21T00:30:43.094+0530 [INFO] core: security barrier not
initialized
2023-07-21T00:30:43.096+0530 [INFO] core: security barrier
initialized: stored=1 shares=5 threshold=3
2023-07-21T00:30:43.098+0530 [INFO] core: post-unseal setup
starting
2023-07-21T00:30:43.124+0530 [INFO] core: loaded wrapping token
key
2023-07-21T00:30:43.124+0530 [INFO] core: successfully setup
plugin catalog: plugin-directory=""
2023-07-21T00:30:43.124+0530 [INFO] core: no mounts; adding
default mount table
2023-07-21T00:30:43.125+0530 [INFO] core: successfully mounted:
type=cubbyhole version="v1.14.0+builtin.vault" path=cubbyhole/
namespace="ID: root. Path: "
2023-07-21T00:30:43.126+0530 [INFO] core: successfully mounted:
type=system version="v1.14.0+builtin.vault" path=sys/
namespace="ID: root. Path: "
2023-07-21T00:30:43.126+0530 [INFO] core: successfully mounted:
type=identity version="v1.14.0+builtin.vault" path=identity/
namespace="ID: root. Path: "
2023-07-21T00:30:43.129+0530 [INFO] core: successfully mounted:
type=token version="v1.14.0+builtin.vault" path=token/
namespace="ID: root. Path: "
2023-07-21T00:30:43.130+0530 [INFO] rollback: starting rollback
manager
2023-07-21T00:30:43.130+0530 [INFO] core: restoring leases
2023-07-21T00:30:43.130+0530 [INFO] identity: entities restored
2023-07-21T00:30:43.130+0530 [INFO] identity: groups restored
```

```

2023-07-21T00:30:43.131+0530 [INFO] core: usage gauge collection
is disabled
2023-07-21T00:30:43.131+0530 [INFO] expiration: lease restore
complete
2023-07-21T00:30:43.131+0530 [INFO] core: Recorded vault
version: vault version=1.14.0 upgrade time="2023-07-20
19:00:43.131158543 +0000 UTC" build date=2023-06-19T11:40:23Z
2023-07-21T00:30:43.371+0530 [INFO] core: post-unseal setup
complete
2023-07-21T00:30:43.371+0530 [INFO] core: root token generated
2023-07-21T00:30:43.371+0530 [INFO] core: pre-seal teardown
starting
2023-07-21T00:30:43.371+0530 [INFO] rollback: stopping rollback
manager
2023-07-21T00:30:43.372+0530 [INFO] core: pre-seal teardown
complete
2023-07-21T00:30:43.694+0530 [INFO] core.cluster-listener.tcp:
starting listener: listener_address=0.0.0.0:8201
2023-07-21T00:30:43.695+0530 [INFO] core.cluster-listener:
serving cluster requests: cluster_listen_address=[::]:8201
2023-07-21T00:30:43.695+0530 [INFO] core: post-unseal setup
starting
2023-07-21T00:30:43.696+0530 [INFO] core: loaded wrapping token
key
2023-07-21T00:30:43.696+0530 [INFO] core: successfully setup
plugin catalog: plugin-directory=""
2023-07-21T00:30:43.697+0530 [INFO] core: successfully mounted:
type=system version="v1.14.0+builtin.vault" path=sys/
namespace="ID: root. Path: "
2023-07-21T00:30:43.698+0530 [INFO] core: successfully mounted:
type=identity version="v1.14.0+builtin.vault" path=identity/
namespace="ID: root. Path: "
2023-07-21T00:30:43.698+0530 [INFO] core: successfully mounted:
type=cubbyhole version="v1.14.0+builtin.vault" path=cubbyhole/
namespace="ID: root. Path: "
2023-07-21T00:30:43.701+0530 [INFO] core: successfully mounted:
type=token version="v1.14.0+builtin.vault" path=token/
namespace="ID: root. Path: "
2023-07-21T00:30:43.701+0530 [INFO] rollback: starting rollback
manager
2023-07-21T00:30:43.702+0530 [INFO] core: restoring leases
2023-07-21T00:30:43.702+0530 [INFO] identity: entities restored
2023-07-21T00:30:43.702+0530 [INFO] expiration: lease restore
complete
2023-07-21T00:30:43.702+0530 [INFO] identity: groups restored
2023-07-21T00:30:43.702+0530 [INFO] core: usage gauge collection

```

```

is disabled
2023-07-21T00:30:43.703+0530 [INFO]   core: post-unseal setup
complete
2023-07-21T00:30:43.703+0530 [INFO]   core: vault is unsealed
Success! Uploaded policy: mcctb-policy
2023-07-21T00:30:44.226+0530 [INFO]   core: enabled credential
backend: path=approle/ type=approle version=""
Success! Enabled approle auth method at: approle/
2023-07-21T00:30:44.315+0530 [INFO]   core: successful mount:
namespace="" path=mcctb/ type=kv version=""
Success! Enabled the kv secrets engine at: mcctb/
Success! Data written to: auth/approle/role/mcctb-app
Upgrading to NetApp-MetroCluster-Tiebreaker-Software-1.6-
1.x86_64.rpm
Preparing...
##### [100%]
Updating / installing...
   1:NetApp-MetroCluster-Tiebreaker-
So##### [ 50%]
Performing file integrity check
etc/cron.weekly/metrocluster-tiebreaker-support is Ok
etc/cron.weekly/metrocluster-tiebreaker-support-cov is Ok
etc/init.d/netapp-metrocluster-tiebreaker-software is Ok
etc/init.d/netapp-metrocluster-tiebreaker-software-cov is Ok
etc/logrotate.d/mcctb is Ok
opt/netapp/mcctb/lib/common/activation-1.1.1.jar is Ok
opt/netapp/mcctb/lib/common/aopalliance.jar is Ok
opt/netapp/mcctb/lib/common/args4j.jar is Ok
opt/netapp/mcctb/lib/common/aspectjrt.jar is Ok
opt/netapp/mcctb/lib/common/aspectjweaver.jar is Ok
opt/netapp/mcctb/lib/common/asup.jar is Ok
opt/netapp/mcctb/lib/common/bcpkix-jdk15on.jar is Ok
opt/netapp/mcctb/lib/common/bcprov-jdk15on.jar is Ok
opt/netapp/mcctb/lib/common/bcprov-jdk18on.jar is Ok
opt/netapp/mcctb/lib/common/bctls-fips-1.0.13.jar is Ok
opt/netapp/mcctb/lib/common/bctls-jdk18on.jar is Ok
opt/netapp/mcctb/lib/common/bcutil-jdk18on.jar is Ok
opt/netapp/mcctb/lib/common/cglib.jar is Ok
opt/netapp/mcctb/lib/common/commons-codec.jar is Ok
opt/netapp/mcctb/lib/common/commons-collections4.jar is Ok
opt/netapp/mcctb/lib/common/commons-compress.jar is Ok
opt/netapp/mcctb/lib/common/commons-daemon.jar is Ok
opt/netapp/mcctb/lib/common/commons-daemon.src.jar is Ok
opt/netapp/mcctb/lib/common/commons-dbcp2.jar is Ok
opt/netapp/mcctb/lib/common/commons-io.jar is Ok
opt/netapp/mcctb/lib/common/commons-lang3.jar is Ok

```

```
opt/netapp/mcctb/lib/common/commons-logging.jar is Ok
opt/netapp/mcctb/lib/common/commons-pool2.jar is Ok
opt/netapp/mcctb/lib/common/guava.jar is Ok
opt/netapp/mcctb/lib/common/httpclient.jar is Ok
opt/netapp/mcctb/lib/common/httpcore.jar is Ok
opt/netapp/mcctb/lib/common/jakarta.activation.jar is Ok
opt/netapp/mcctb/lib/common/jakarta.xml.bind-api.jar is Ok
opt/netapp/mcctb/lib/common/java-xmlbuilder.jar is Ok
opt/netapp/mcctb/lib/common/javax.inject.jar is Ok
opt/netapp/mcctb/lib/common/jaxb-api-2.3.1.jar is Ok
opt/netapp/mcctb/lib/common/jaxb-core.jar is Ok
opt/netapp/mcctb/lib/common/jaxb-impl.jar is Ok
opt/netapp/mcctb/lib/common/jline.jar is Ok
opt/netapp/mcctb/lib/common/jna.jar is Ok
opt/netapp/mcctb/lib/common/joda-time.jar is Ok
opt/netapp/mcctb/lib/common/jsch.jar is Ok
opt/netapp/mcctb/lib/common/json.jar is Ok
opt/netapp/mcctb/lib/common/jsvc.zip is Ok
opt/netapp/mcctb/lib/common/junixsocket-common.jar is Ok
opt/netapp/mcctb/lib/common/junixsocket-native-common.jar is Ok
opt/netapp/mcctb/lib/common/logback-classic.jar is Ok
opt/netapp/mcctb/lib/common/logback-core.jar is Ok
opt/netapp/mcctb/lib/common/mail-1.6.2.jar is Ok
opt/netapp/mcctb/lib/common/mariadb-java-client.jar is Ok
opt/netapp/mcctb/lib/common/mcctb-mib.jar is Ok
opt/netapp/mcctb/lib/common/mcctb.jar is Ok
opt/netapp/mcctb/lib/common/mockito-core.jar is Ok
opt/netapp/mcctb/lib/common/slf4j-api.jar is Ok
opt/netapp/mcctb/lib/common/snmp4j.jar is Ok
opt/netapp/mcctb/lib/common/spring-aop.jar is Ok
opt/netapp/mcctb/lib/common/spring-beans.jar is Ok
opt/netapp/mcctb/lib/common/spring-context-support.jar is Ok
opt/netapp/mcctb/lib/common/spring-context.jar is Ok
opt/netapp/mcctb/lib/common/spring-core.jar is Ok
opt/netapp/mcctb/lib/common/spring-expression.jar is Ok
opt/netapp/mcctb/lib/common/spring-web.jar is Ok
opt/netapp/mcctb/lib/common/vault-java-driver.jar is Ok
opt/netapp/mcctb/lib/common/xz.jar is Ok
opt/netapp/mcctb/bin/mcctb_postrotate is Ok
opt/netapp/mcctb/bin/netapp-metrocluster-tiebreaker-software-cli
is Ok
/
```

```
Synchronizing state of netapp-metrocluster-tiebreaker-
software.service with SysV service script with
/usr/lib/systemd/systemd-sysv-install.
```

```
Executing: /usr/lib/systemd/systemd-sysv-install enable netapp-  
metrocluster-tiebreaker-software
```

```
Attempting to start NetApp MetroCluster Tiebreaker software  
services
```

```
Started NetApp MetroCluster Tiebreaker software services
```

```
Successfully upgraded NetApp MetroCluster Tiebreaker software to  
version 1.6.
```

```
Cleaning up / removing...
```

```
2:NetApp-MetroCluster-Tiebreaker-
```

```
So##### [100%]
```

Aggiornamento da tiebreaker 1,4 a 1,6

Per aggiornare la versione software di Tiebreaker 1,4 a Tiebreaker 1,6, procedere come segue.

Fasi

- Eseguire il seguente comando nella [root@mcctb ~] # richiesta di aggiornamento del software:

```
sh MetroClusterTiebreakerInstall-1.6
```

Il sistema visualizza il seguente output per un aggiornamento riuscito:

```
Extracting the MetroCluster Tiebreaker installation/upgrade  
archive  
Install digest hash is Ok  
Performing the MetroCluster Tiebreaker code signature check  
Install code signature is Ok  
Enter unix user account to use for the installation:  
mcctbuseradmin1  
Unix user account "mcctbuseradmin1" doesn't exist. Do you wish to  
create "mcctbuseradmin1" user account? [Y/N]: y  
Unix account "mcctbuseradmin1" created.  
Changing password for user mcctbuseradmin1.  
New password:  
Retype new password:  
passwd: all authentication tokens updated successfully.  
  
Enter database user name : root  
  
Please enter database password for root  
Enter password:  
  
Password updated successfully in the database.
```

```

MetroCluster Tiebreaker requires unix user account
"mcctbuseradmin1" to be added to the group "mcctbgrp" for admin
access.
Do you wish to add ? [Y/N]: y
Unix user account "mcctbuseradmin1" added to "mcctbgrp".
Do you wish to generate your own public-private key pair for
encrypting audit log? [Y/N]: y
Generating public-private key pair...
Configuring Vault...
Starting vault server...
==> Vault server configuration:

      Api Address: <api_address>
      Cgo: disabled
      Cluster Address: <cluster_address>
      Environment Variables: BASH_FUNC_which%%,
DBUS_SESSION_BUS_ADDRESS, GODEBUG, HISTCONTROL, HISTSIZE, HOME,
HOSTNAME, HOST_ACCOUNT, LANG, LESSOPEN, LOGNAME, LS_COLORS, MAIL,
PATH, PWD, SHELL, SHLVL, SSH_CLIENT, SSH_CONNECTION, SSH_TTY,
STAF_TEMP_DIR, TERM, USER, VAULT_ADDR, VAULT_TOKEN,
XDG_RUNTIME_DIR, XDG_SESSION_ID, _, vault_Addr, which_declare
      Go Version: go1.20.5
      Listener 1: tcp (addr: "0.0.0.0:8200", cluster
address: "0.0.0.0:8201", max_request_duration: "1m30s",
max_request_size: "33554432", tls: "enabled")
      Log Level:
      Mlock: supported: true, enabled: true
      Recovery Mode: false
      Storage: file
      Version: Vault v1.14.0, built 2023-06-
19T11:40:23Z
      Version Sha:
13a649f860186dffe3f3a4459814d87191efc321

==> Vault server started! Log data will stream in below:

2023-11-23T15:58:10.400+0530 [INFO] proxy environment:
http_proxy="" https_proxy="" no_proxy=""
2023-11-23T15:58:10.432+0530 [INFO] core: Initializing version
history cache for core
2023-11-23T15:58:20.422+0530 [INFO] core: security barrier not
initialized
2023-11-23T15:58:20.422+0530 [INFO] core: seal configuration
missing, not initialized
2023-11-23T15:58:20.424+0530 [INFO] core: security barrier not
initialized

```



```

2023-11-23T15:58:20.425+0530 [INFO] core: security barrier
initialized: stored=1 shares=5 threshold=3
2023-11-23T15:58:20.427+0530 [INFO] core: post-unseal setup
starting
2023-11-23T15:58:20.448+0530 [INFO] core: loaded wrapping token
key
2023-11-23T15:58:20.448+0530 [INFO] core: successfully setup
plugin catalog: plugin-directory=""
2023-11-23T15:58:20.448+0530 [INFO] core: no mounts; adding
default mount table
2023-11-23T15:58:20.449+0530 [INFO] core: successfully mounted:
type=cubbyhole version="v1.14.0+builtin.vault" path=cubbyhole/
namespace="ID: root. Path: "
2023-11-23T15:58:20.449+0530 [INFO] core: successfully mounted:
type=system version="v1.14.0+builtin.vault" path=sys/
namespace="ID: root. Path: "
2023-11-23T15:58:20.449+0530 [INFO] core: successfully mounted:
type=identity version="v1.14.0+builtin.vault" path=identity/
namespace="ID: root. Path: "
2023-11-23T15:58:20.451+0530 [INFO] core: successfully mounted:
type=token version="v1.14.0+builtin.vault" path=token/
namespace="ID: root. Path: "
2023-11-23T15:58:20.452+0530 [INFO] rollback: starting rollback
manager
2023-11-23T15:58:20.452+0530 [INFO] core: restoring leases
2023-11-23T15:58:20.453+0530 [INFO] identity: entities restored
2023-11-23T15:58:20.453+0530 [INFO] identity: groups restored
2023-11-23T15:58:20.453+0530 [INFO] expiration: lease restore
complete
2023-11-23T15:58:20.453+0530 [INFO] core: usage gauge collection
is disabled
2023-11-23T15:58:20.453+0530 [INFO] core: Recorded vault
version: vault version=1.14.0 upgrade time="2023-11-23
10:28:20.453481904 +0000 UTC" build date=2023-06-19T11:40:23Z
2023-11-23T15:58:20.818+0530 [INFO] core: post-unseal setup
complete
2023-11-23T15:58:20.819+0530 [INFO] core: root token generated
2023-11-23T15:58:20.819+0530 [INFO] core: pre-seal teardown
starting
2023-11-23T15:58:20.819+0530 [INFO] rollback: stopping rollback
manager
2023-11-23T15:58:20.819+0530 [INFO] core: pre-seal teardown
complete
2023-11-23T15:58:21.116+0530 [INFO] core.cluster-listener.tcp:
starting listener: listener_address=0.0.0.0:8201
2023-11-23T15:58:21.116+0530 [INFO] core.cluster-listener:

```

```

serving cluster requests: cluster_listen_address=[::]:8201
2023-11-23T15:58:21.117+0530 [INFO]   core: post-unseal setup
starting
2023-11-23T15:58:21.117+0530 [INFO]   core: loaded wrapping token
key
2023-11-23T15:58:21.117+0530 [INFO]   core: successfully setup
plugin catalog: plugin-directory=""
2023-11-23T15:58:21.119+0530 [INFO]   core: successfully mounted:
type=system version="v1.14.0+builtin.vault" path=sys/
namespace="ID: root. Path: "
2023-11-23T15:58:21.120+0530 [INFO]   core: successfully mounted:
type=identity version="v1.14.0+builtin.vault" path=identity/
namespace="ID: root. Path: "
2023-11-23T15:58:21.120+0530 [INFO]   core: successfully mounted:
type=cubbyhole version="v1.14.0+builtin.vault" path=cubbyhole/
namespace="ID: root. Path: "
2023-11-23T15:58:21.123+0530 [INFO]   core: successfully mounted:
type=token version="v1.14.0+builtin.vault" path=token/
namespace="ID: root. Path: "
2023-11-23T15:58:21.123+0530 [INFO]   rollback: starting rollback
manager
2023-11-23T15:58:21.124+0530 [INFO]   core: restoring leases
2023-11-23T15:58:21.124+0530 [INFO]   identity: entities restored
2023-11-23T15:58:21.124+0530 [INFO]   identity: groups restored
2023-11-23T15:58:21.124+0530 [INFO]   expiration: lease restore
complete
2023-11-23T15:58:21.125+0530 [INFO]   core: usage gauge collection
is disabled
2023-11-23T15:58:21.125+0530 [INFO]   core: post-unseal setup
complete
2023-11-23T15:58:21.125+0530 [INFO]   core: vault is unsealed
Success! Uploaded policy: mcctb-policy
2023-11-23T15:58:21.600+0530 [INFO]   core: enabled credential
backend: path=appprole/ type=appprole version=""
Success! Enabled approle auth method at: approle/
2023-11-23T15:58:21.690+0530 [INFO]   core: successful mount:
namespace="" path=mcctb/ type=kv version=""
Success! Enabled the kv secrets engine at: mcctb/
Success! Data written to: auth/appprole/role/mcctb-app
Upgrading to NetApp-MetroCluster-Tiebreaker-Software-1.6-
1.x86_64.rpm
Preparing...
##### [100%]
Updating / installing...
  1:NetApp-MetroCluster-Tiebreaker-
So##### [ 50%]

```

```
Performing file integrity check
etc/cron.weekly/metrocluster-tiebreaker-support is Ok
etc/cron.weekly/metrocluster-tiebreaker-support-cov is Ok
etc/init.d/netapp-metrocluster-tiebreaker-software is Ok
etc/init.d/netapp-metrocluster-tiebreaker-software-cov is Ok
etc/logrotate.d/mcctb is Ok
opt/netapp/mcctb/lib/common/activation-1.1.1.jar is Ok
opt/netapp/mcctb/lib/common/aopalliance.jar is Ok
opt/netapp/mcctb/lib/common/args4j.jar is Ok
opt/netapp/mcctb/lib/common/aspectjrt.jar is Ok
opt/netapp/mcctb/lib/common/aspectjweaver.jar is Ok
opt/netapp/mcctb/lib/common/asup.jar is Ok
opt/netapp/mcctb/lib/common/bcpkix-jdk15on.jar is Ok
opt/netapp/mcctb/lib/common/bcprov-jdk15on.jar is Ok
opt/netapp/mcctb/lib/common/bcprov-jdk18on.jar is Ok
opt/netapp/mcctb/lib/common/bctls-fips-1.0.13.jar is Ok
opt/netapp/mcctb/lib/common/bctls-jdk18on.jar is Ok
opt/netapp/mcctb/lib/common/bcutil-jdk18on.jar is Ok
opt/netapp/mcctb/lib/common/cglib.jar is Ok
opt/netapp/mcctb/lib/common/commons-codec.jar is Ok
opt/netapp/mcctb/lib/common/commons-collections4.jar is Ok
opt/netapp/mcctb/lib/common/commons-compress.jar is Ok
opt/netapp/mcctb/lib/common/commons-daemon.jar is Ok
opt/netapp/mcctb/lib/common/commons-daemon.src.jar is Ok
opt/netapp/mcctb/lib/common/commons-dbcp2.jar is Ok
opt/netapp/mcctb/lib/common/commons-io.jar is Ok
opt/netapp/mcctb/lib/common/commons-lang3.jar is Ok
opt/netapp/mcctb/lib/common/commons-logging.jar is Ok
opt/netapp/mcctb/lib/common/commons-pool2.jar is Ok
opt/netapp/mcctb/lib/common/guava.jar is Ok
opt/netapp/mcctb/lib/common/httpclient.jar is Ok
opt/netapp/mcctb/lib/common/httpcore.jar is Ok
opt/netapp/mcctb/lib/common/jakarta.activation.jar is Ok
opt/netapp/mcctb/lib/common/jakarta.xml.bind-api.jar is Ok
opt/netapp/mcctb/lib/common/java-xmlbuilder.jar is Ok
opt/netapp/mcctb/lib/common/javax.inject.jar is Ok
opt/netapp/mcctb/lib/common/jaxb-api-2.3.1.jar is Ok
opt/netapp/mcctb/lib/common/jaxb-core.jar is Ok
opt/netapp/mcctb/lib/common/jaxb-impl.jar is Ok
opt/netapp/mcctb/lib/common/jline.jar is Ok
opt/netapp/mcctb/lib/common/jna.jar is Ok
opt/netapp/mcctb/lib/common/joda-time.jar is Ok
opt/netapp/mcctb/lib/common/jsch.jar is Ok
opt/netapp/mcctb/lib/common/json.jar is Ok
opt/netapp/mcctb/lib/common/jsvc.zip is Ok
opt/netapp/mcctb/lib/common/junixsocket-common.jar is Ok
```

```

opt/netapp/mcctb/lib/common/junixsocket-native-common.jar is Ok
opt/netapp/mcctb/lib/common/logback-classic.jar is Ok
opt/netapp/mcctb/lib/common/logback-core.jar is Ok
opt/netapp/mcctb/lib/common/mail-1.6.2.jar is Ok
opt/netapp/mcctb/lib/common/mariadb-java-client.jar is Ok
opt/netapp/mcctb/lib/common/mcctb-mib.jar is Ok
opt/netapp/mcctb/lib/common/mcctb.jar is Ok
opt/netapp/mcctb/lib/common/mockito-core.jar is Ok
opt/netapp/mcctb/lib/common/slf4j-api.jar is Ok
opt/netapp/mcctb/lib/common/snmp4j.jar is Ok
opt/netapp/mcctb/lib/common/spring-aop.jar is Ok
opt/netapp/mcctb/lib/common/spring-beans.jar is Ok
opt/netapp/mcctb/lib/common/spring-context-support.jar is Ok
opt/netapp/mcctb/lib/common/spring-context.jar is Ok
opt/netapp/mcctb/lib/common/spring-core.jar is Ok
opt/netapp/mcctb/lib/common/spring-expression.jar is Ok
opt/netapp/mcctb/lib/common/spring-web.jar is Ok
opt/netapp/mcctb/lib/common/vault-java-driver.jar is Ok
opt/netapp/mcctb/lib/common/xz.jar is Ok
opt/netapp/mcctb/lib/org.jacoco.agent-0.8.8-runtime.jar is Ok
opt/netapp/mcctb/bin/mcctb-asup-invoke is Ok
opt/netapp/mcctb/bin/mcctb_postrotate is Ok
opt/netapp/mcctb/bin/netapp-metrocluster-tiebreaker-software-cli
is Ok
/

```

```

Synchronizing state of netapp-metrocluster-tiebreaker-
software.service with SysV service script with
/usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable netapp-
metrocluster-tiebreaker-software

```

```

Attempting to start NetApp MetroCluster Tiebreaker software
services
Started NetApp MetroCluster Tiebreaker software services
Successfully upgraded NetApp MetroCluster Tiebreaker software to
version 1.6.
Cleaning up / removing...
  2:NetApp-MetroCluster-Tiebreaker-
So##### [100%]

```

Installare il Tiebreaker 1,5

Configurare l'accesso amministratore all'API e all'SSH ONTAP

È possibile configurare l'accesso admin alle API e SSH ONTAP.

Fasi

1. Creare un utente amministratore con accesso API ONTAP: `security login create -user-or-group-name mcctb -application ontapi -authentication-method password`
2. Creare un utente amministratore con accesso SSH: `security login create -user-or-group-name mcctb -application ssh -authentication-method password`
3. Verificare che siano stati creati i nuovi utenti admin: `security login show`
4. Ripetere questi passaggi sul cluster partner.



"Autenticazione amministratore e RBAC" è implementato.

Installare le dipendenze di MetroCluster tiebreaker 1,5

A seconda del sistema operativo Linux host, è necessario installare un server MySQL o MariaDB prima di installare o aggiornare il software tiebreaker.

Fasi

1. [Installare JDK](#)
2. [Installare e configurare il vault](#)
3. Installare il server MySQL o MariaDB:

Se l'host Linux è	Quindi...
Red Hat Enterprise Linux 7/CentOS 7	Installare MySQL Server 5.5.30 o versioni successive e 5,6.x su Red Hat Enterprise Linux 7 o CentOS 7
Red Hat Enterprise Linux 8	Installare il server MariaDB su Red Hat Enterprise Linux 8

Installare JDK

È necessario installare JDK sul sistema host prima di installare o aggiornare il software tiebreaker. Tiebreaker 1,5 e versioni successive supporta OpenJDK 17, 18 o 19.

Fasi

1. Accedere come utente "root" o come utente sudo che può passare alla modalità avanzata dei privilegi.

```
login as: root
root@mcctb's password:
Last login: Fri Jan  8 21:33:00 2017 from host.domain.com
```

2. Controllare le versioni JDK disponibili:

```
yum search openjdk
```

3. Installare JDK 17,18 o 19.

Il seguente comando installa JDK 17:

```
yum install java-17-openjdk
```

4. Verificare l'installazione:

```
java -version
```

Una corretta installazione visualizza il seguente output:

```
openjdk version "17.0.2" 2022-01-18 LTS
OpenJDK Runtime Environment 21.9 (build 17.0.2+8-LTS)
OpenJDK 64-Bit Server VM 21.9 (build 17.0.2+8-LTS, mixed mode, sharing)
```

Installare e configurare il vault

Se non si dispone o si desidera utilizzare il server del vault locale, è necessario installare Vault. Si può fare riferimento a questa procedura standard per l'installazione del vault o fare riferimento alle istruzioni di installazione di Hashicorp per linee guida alternative.



Se si dispone di un server vault nella rete, è possibile configurare l'host MetroCluster Tiebreaker per l'utilizzo dell'installazione del vault. In questo caso, non è necessario installare Vault sull'host.

Fasi

1. Passare a. /bin directory:

```
[root@mcctb] cd /bin
```

2. Scaricare il file zip del vault.

```
[root@mcctb /bin]# curl -sO
https://releases.hashicorp.com/vault/1.12.2/vault_1.12.2_linux_amd64.zip
```

3. Decomprimere il file del vault.

```
[root@mcctb /bin]# unzip vault_1.12.2_linux_amd64.zip
Archive:  vault_1.12.2_linux_amd64.zip
  inflating: vault
```

4. Verificare l'installazione.

```
[root@mcctb /bin]# vault -version
Vault v1.12.2 (415e1fe3118eebd5df6cb60d13defdc01aa17b03), built 2022-11-23T12:53:46Z
```

5. Passare a. /root directory:

```
[root@mcctb /bin] cd /root
```

6. Creare un file di configurazione del vault in /root directory.

Su [root@mcctb ~] prompt, copiare ed eseguire il comando seguente per creare config.hcl file:

```
# cat > config.hcl << EOF
storage "file" {
  address = "127.0.0.1:8500"
  path    = "/mcctb_vdata/data"
}
listener "tcp" {
  address      = "127.0.0.1:8200"
  tls_disable = 1
}
EOF
```

7. Avviare il server del vault:

```
[root@mcctb ~] vault server -config config.hcl &
```

8. Esportare l'indirizzo del vault.

```
[root@mcctb ~]# export VAULT_ADDR="http://127.0.0.1:8200"
```

9. Inizializzare il vault.

```
[root@mcctb ~]# vault operator init
2022-12-15T14:57:22.113+0530 [INFO]   core: security barrier not
initialized
2022-12-15T14:57:22.113+0530 [INFO]   core: seal configuration missing,
not initialized
2022-12-15T14:57:22.114+0530 [INFO]   core: security barrier not
initialized
2022-12-15T14:57:22.116+0530 [INFO]   core: security barrier initialized:
```

```

stored=1 shares=5 threshold=3
2022-12-15T14:57:22.118+0530 [INFO] core: post-unseal setup starting
2022-12-15T14:57:22.137+0530 [INFO] core: loaded wrapping token key
2022-12-15T14:57:22.137+0530 [INFO] core: Recorded vault version: vault
version=1.12.2 upgrade time="2022-12-15 09:27:22.137200412 +0000 UTC"
build date=2022-11-23T12:53:46Z
2022-12-15T14:57:22.137+0530 [INFO] core: successfully setup plugin
catalog: plugin-directory=""
2022-12-15T14:57:22.137+0530 [INFO] core: no mounts; adding default
mount table
2022-12-15T14:57:22.143+0530 [INFO] core: successfully mounted backend:
type=cubbyhole version="" path=cubbyhole/
2022-12-15T14:57:22.144+0530 [INFO] core: successfully mounted backend:
type=system version="" path=sys/
2022-12-15T14:57:22.144+0530 [INFO] core: successfully mounted backend:
type=identity version="" path=identity/
2022-12-15T14:57:22.148+0530 [INFO] core: successfully enabled
credential backend: type=token version="" path=token/ namespace="ID:
root. Path: "
2022-12-15T14:57:22.149+0530 [INFO] rollback: starting rollback manager
2022-12-15T14:57:22.149+0530 [INFO] core: restoring leases
2022-12-15T14:57:22.150+0530 [INFO] expiration: lease restore complete
2022-12-15T14:57:22.150+0530 [INFO] identity: entities restored
2022-12-15T14:57:22.150+0530 [INFO] identity: groups restored
2022-12-15T14:57:22.151+0530 [INFO] core: usage gauge collection is
disabled
2022-12-15T14:57:23.385+0530 [INFO] core: post-unseal setup complete
2022-12-15T14:57:23.387+0530 [INFO] core: root token generated
2022-12-15T14:57:23.387+0530 [INFO] core: pre-seal teardown starting
2022-12-15T14:57:23.387+0530 [INFO] rollback: stopping rollback manager
2022-12-15T14:57:23.387+0530 [INFO] core: pre-seal teardown complete
Unseal Key 1: <unseal_key_1_id>
Unseal Key 2: <unseal_key_2_id>
Unseal Key 3: <unseal_key_3_id>
Unseal Key 4: <unseal_key_4_id>
Unseal Key 5: <unseal_key_5_id>

Initial Root Token: <initial_root_token_id>

```

Vault initialized with 5 key shares and a key threshold of 3. Please securely distribute the key shares printed above. When the Vault is re-sealed, restarted, or stopped, you must supply at least 3 of these keys to unseal it before it can start servicing requests.

Vault does not store the generated root key. Without at least 3 keys to reconstruct the root key, Vault will remain permanently sealed!

It is possible to generate new unseal keys, provided you have a quorum of existing unseal keys shares. See "vault operator rekey" for more information.



È necessario registrare e memorizzare gli ID della chiave e il token principale iniziale in una posizione sicura per poterli utilizzare successivamente nella procedura.

10. Esportare il token root del vault.

```
[root@mcctb ~]# export VAULT_TOKEN="<initial_root_token_id>"
```

11. Rimuovere il sigillo del vault usando tre delle cinque chiavi create.

È necessario eseguire `vault operator unseal` comando per ciascuna delle tre chiavi:

a. Rimuovere il sigillo del vault usando la prima chiave:

```
[root@mcctb ~]# vault operator unseal
Unseal Key (will be hidden):
Key                Value
---              -
Seal Type          shamir
Initialized        true
Sealed             true
Total Shares       5
Threshold          3
Unseal Progress    1/3
Unseal Nonce       <unseal_key_1_id>
Version            1.12.2
Build Date         2022-11-23T12:53:46Z
Storage Type       file
HA Enabled         false
```

b. Rimuovere il sigillo del vault usando la seconda chiave:

```
[root@mcctb ~]# vault operator unseal
Unseal Key (will be hidden):
Key                               Value
---                               -
Seal Type                         shamir
Initialized                       true
Sealed                           true
Total Shares                      5
Threshold                        3
Unseal Progress                   2/3
Unseal Nonce                      <unseal_key_2_id>
Version                          1.12.2
Build Date                       2022-11-23T12:53:46Z
Storage Type                      file
HA Enabled                       false
```

c. Rimuovere il sigillo del vault usando la terza chiave:

```

[root@mcctb ~]# vault operator unseal
Unseal Key (will be hidden):
2022-12-15T15:15:00.980+0530 [INFO] core.cluster-listener.tcp:
starting listener: listener_address=127.0.0.1:8201
2022-12-15T15:15:00.980+0530 [INFO] core.cluster-listener: serving
cluster requests: cluster_listen_address=127.0.0.1:8201
2022-12-15T15:15:00.981+0530 [INFO] core: post-unseal setup starting
2022-12-15T15:15:00.981+0530 [INFO] core: loaded wrapping token key
2022-12-15T15:15:00.982+0530 [INFO] core: successfully setup plugin
catalog: plugin-directory=""
2022-12-15T15:15:00.983+0530 [INFO] core: successfully mounted
backend: type=system version="" path=sys/
2022-12-15T15:15:00.984+0530 [INFO] core: successfully mounted
backend: type=identity version="" path=identity/
2022-12-15T15:15:00.984+0530 [INFO] core: successfully mounted
backend: type=cubbyhole version="" path=cubbyhole/
2022-12-15T15:15:00.986+0530 [INFO] core: successfully enabled
credential backend: type=token version="" path=token/ namespace="ID:
root. Path: "
2022-12-15T15:15:00.986+0530 [INFO] rollback: starting rollback
manager
2022-12-15T15:15:00.987+0530 [INFO] core: restoring leases
2022-12-15T15:15:00.987+0530 [INFO] expiration: lease restore
complete
2022-12-15T15:15:00.987+0530 [INFO] identity: entities restored
2022-12-15T15:15:00.987+0530 [INFO] identity: groups restored
2022-12-15T15:15:00.988+0530 [INFO] core: usage gauge collection is
disabled
2022-12-15T15:15:00.989+0530 [INFO] core: post-unseal setup complete
2022-12-15T15:15:00.989+0530 [INFO] core: vault is unsealed
Key          Value
---          -
Seal Type    shamir
Initialized  true
Sealed       false
Total Shares 5
Threshold    3
Version      1.12.2
Build Date   2022-11-23T12:53:46Z
Storage Type  file
Cluster Name  vault-cluster
Cluster ID    <cluster_id>
HA Enabled    false

```

12. Verificare che lo stato del Vault Sealed sia falso.

```
[root@mcctb ~]# vault status
Key          Value
---          -
Seal Type    shamir
Initialized  true
Sealed       false
Total Shares 5
Threshold    3
Version      1.12.2
Build Date   2022-11-23T12:53:46Z
Storage Type  file
Cluster Name  vault-cluster
Cluster ID    <cluster_id>
HA Enabled    false
```

13. Configurare il servizio Vault per avviarlo all'avvio.

- a. Eseguire il seguente comando: `cd /etc/systemd/system`

```
[root@mcctb ~]# cd /etc/systemd/system
```

- b. Su `[root@mcctb system]` Richiedere, copiare ed eseguire il comando seguente per creare il file di servizio del vault.

```
# cat > vault.service << EOF
[Unit]
Description=Vault Service
After=mariadb.service

[Service]
Type=forking
ExecStart=/usr/bin/vault server -config /root/config.hcl &
Restart=on-failure

[Install]
WantedBy=multi-user.target
EOF
```

- c. Eseguire il seguente comando: `systemctl daemon-reload`

```
[root@mcctb system]# systemctl daemon-reload
```

- d. Eseguire il seguente comando: `systemctl enable vault.service`

```
[root@mcctb system]# systemctl enable vault.service
Created symlink /etc/systemd/system/multi-
user.target.wants/vault.service → /etc/systemd/system/vault.service.
```



Viene richiesto di utilizzare questa funzione durante l'installazione di MetroCluster Tiebreaker. Se si desidera modificare il metodo per dissigillare il vault, è necessario disinstallare e reinstallare il software MetroCluster Tiebreaker.

Installare MySQL Server 5.5.30 o versioni successive e 5.6.x su Red Hat Enterprise Linux 7 o CentOS 7

È necessario installare MySQL Server 5.5.30 o versione successiva e la versione 5.6.x sul sistema host prima di installare o aggiornare il software Tiebreaker. Per Red Hat Enterprise Linux 8, [Installare il server MariaDB](#).

Fasi

1. Accedere come utente root o sudo che può passare alla modalità avanzata dei privilegi.

```
login as: root
root@mcctb's password:
Last login: Fri Jan  8 21:33:00 2016 from host.domain.com
```

2. Aggiungi il repository MySQL al tuo sistema host:

```
[root@mcctb ~]# yum localinstall https://dev.mysql.com/get/mysql57-community-
release-el6-11.noarch.rpm
```

```

Loaded plugins: product-id, refresh-packagekit, security, subscription-
manager
Setting up Local Package Process
Examining /var/tmp/yum-root-LLUw0r/mysql-community-release-el6-
5.noarch.rpm: mysql-community-release-el6-5.noarch
Marking /var/tmp/yum-root-LLUw0r/mysql-community-release-el6-
5.noarch.rpm to be installed
Resolving Dependencies
--> Running transaction check
---> Package mysql-community-release.noarch 0:el6-5 will be installed
--> Finished Dependency Resolution
Dependencies Resolved

=====
=====
Package                Arch    Version
                               Repository
Size
=====
=====
Installing:
mysql-community-release
                               noarch el6-5 /mysql-community-release-el6-
5.noarch 4.3 k
Transaction Summary
=====
=====
Install      1 Package(s)
Total size: 4.3 k
Installed size: 4.3 k
Is this ok [y/N]: y
Downloading Packages:
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
   Installing : mysql-community-release-el6-5.noarch
1/1
   Verifying   : mysql-community-release-el6-5.noarch
1/1
Installed:
   mysql-community-release.noarch 0:el6-5
Complete!

```

3. Disattivare il repository MySQL 57:

```
[root@mcctb ~]# yum-config-manager --disable mysql57-community
```

4. Abilitare il repository MySQL 56:

```
[root@mcctb ~]# yum-config-manager --enable mysql56-community
```

5. Abilitare il repository:

```
[root@mcctb ~]# yum repolist enabled | grep "mysql.-community."
```

```
mysql-connectors-community      MySQL Connectors Community
21
mysql-tools-community          MySQL Tools Community
35
mysql56-community              MySQL 5.6 Community Server
231
```

6. Installare il server della community MySQL:

```
[root@mcctb ~]# yum install mysql-community-server
```

```
Loaded plugins: product-id, refresh-packagekit, security, subscription-
manager
This system is not registered to Red Hat Subscription Management. You
can use subscription-manager
to register.
Setting up Install Process
Resolving Dependencies
--> Running transaction check
.....Output truncated.....
---> Package mysql-community-libs-compat.x86_64 0:5.6.29-2.el6 will be
obsoleting
--> Finished Dependency Resolution
Dependencies Resolved

=====
=====
Package                               Arch    Version              Repository
Size
=====
=====
Installing:
mysql-community-client                x86_64  5.6.29-2.el6         mysql56-community
18 M
    replacing mysql.x86_64 5.1.71-1.el6
mysql-community-libs                  x86_64  5.6.29-2.el6         mysql56-community
1.9 M
```

```

replacing mysql-libs.x86_64 5.1.71-1.el6
mysql-community-libs-compat      x86_64  5.6.29-2.el6  mysql56-community
1.6 M
replacing mysql-libs.x86_64 5.1.71-1.el6
mysql-community-server           x86_64  5.6.29-2.el6  mysql56-community
53 M
replacing mysql-server.x86_64 5.1.71-1.el6
Installing for dependencies:
mysql-community-common           x86_64  5.6.29-2.el6  mysql56-community
308 k

Transaction Summary
=====
=====
Install          5 Package(s)
Total download size: 74 M
Is this ok [y/N]: y
Downloading Packages:
(1/5): mysql-community-client-5.6.29-2.el6.x86_64.rpm      | 18 MB
00:28
(2/5): mysql-community-common-5.6.29-2.el6.x86_64.rpm      | 308 kB
00:01
(3/5): mysql-community-libs-5.6.29-2.el6.x86_64.rpm       | 1.9 MB
00:05
(4/5): mysql-community-libs-compat-5.6.29-2.el6.x86_64.rpm | 1.6 MB
00:05
(5/5): mysql-community-server-5.6.29-2.el6.x86_64.rpm     | 53 MB
03:42
-----
-----
Total                                                    289 kB/s | 74 MB
04:24
warning: rpmts_HdrFromFdno: Header V3 DSA/SHA1 Signature, key ID
<key_id> NOKEY
Retrieving key from file:/etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
Importing GPG key 0x5072E1F5:
  Userid : MySQL Release Engineering <mysql-build@oss.oracle.com>
Package: mysql-community-release-el6-5.noarch
        (@/mysql-community-release-el6-5.noarch)
From    : file:/etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
Is this ok [y/N]: y
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
  Installing : mysql-community-common-5.6.29-2.el6.x86_64

```


....Output truncated....

1.el6.x86_64

7/8

Verifying : mysql-5.1.71-1.el6.x86_64

8/8

Installed:

mysql-community-client.x86_64 0:5.6.29-2.el6

mysql-community-libs.x86_64 0:5.6.29-2.el6

mysql-community-libs-compat.x86_64 0:5.6.29-2.el6

mysql-community-server.x86_64 0:5.6.29-2.el6

Dependency Installed:

mysql-community-common.x86_64 0:5.6.29-2.el6

Replaced:

mysql.x86_64 0:5.1.71-1.el6 mysql-libs.x86_64 0:5.1.71-1.el6

mysql-server.x86_64 0:5.1.71-1.el6

Complete!

7. Avviare il server MySQL:

```
[root@mcctb ~]# service mysqld start
```

```

Initializing MySQL database: 2016-04-05 19:44:38 0 [Warning] TIMESTAMP
with implicit DEFAULT value is deprecated. Please use
--explicit_defaults_for_timestamp server option (see documentation
for more details).
2016-04-05 19:44:38 0 [Note] /usr/sbin/mysqld (mysqld 5.6.29)
      starting as process 2487 ...
2016-04-05 19:44:38 2487 [Note] InnoDB: Using atomics to ref count
      buffer pool pages
2016-04-05 19:44:38 2487 [Note] InnoDB: The InnoDB memory heap is
disabled
....Output truncated....
2016-04-05 19:44:42 2509 [Note] InnoDB: Shutdown completed; log sequence
      number 1625987

```

PLEASE REMEMBER TO SET A PASSWORD FOR THE MySQL root USER!
To do so, start the server, then issue the following commands:

```

/usr/bin/mysqladmin -u root password 'new-password'
/usr/bin/mysqladmin -u root -h mcctb password 'new-password'

```

Alternatively, you can run:

```

/usr/bin/mysql_secure_installation

```

which will also give you the option of removing the test
databases and anonymous user created by default. This is
strongly recommended for production servers.

.....Output truncated.....

WARNING: Default config file /etc/my.cnf exists on the system
This file will be read by default by the MySQL server
If you do not want to use this, either remove it, or use the
--defaults-file argument to mysqld_safe when starting the server

```

Starting mysqld: [ OK ]

```

8. Verificare che MySQL Server sia in esecuzione:

```

[root@mcctb ~]# service mysqld status

```

```

mysqld (pid 2739) is running...

```

9. Configurare le impostazioni di sicurezza e password:

```

[root@mcctb ~]# mysql_secure_installation

```

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MySQL
SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!

In order to log into MySQL to secure it, we'll need the current password for the root user. If you've just installed MySQL, and you haven't set the root password yet, the password will be blank, so you should just press enter here.

Enter current password for root (enter for none): <== on default
install

hit enter here

OK, successfully used password, moving on...

Setting the root password ensures that nobody can log into the MySQL root user without the proper authorization.

Set root password? [Y/n] y

New password:

Re-enter new password:

Password updated successfully!

Reloading privilege tables..

... Success!

By default, a MySQL installation has an anonymous user, allowing anyone to log into MySQL without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment.

Remove anonymous users? [Y/n] y

... Success!

Normally, root should only be allowed to connect from 'localhost'.
This

ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] y

... Success!

By default, MySQL comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment.

Remove test database and access to it? [Y/n] y

- Dropping test database...

ERROR 1008 (HY000) at line 1: Can't drop database 'test';

```
database doesn't exist
... Failed! Not critical, keep moving...
- Removing privileges on test database...
... Success!
```

Reloading the privilege tables will ensure that all changes made so far will take effect immediately.

```
Reload privilege tables now? [Y/n] y
... Success!
```

All done! If you've completed all of the above steps, your MySQL installation should now be secure.

Thanks for using MySQL!

Cleaning up...

10. Verificare che l'accesso MySQL funzioni:

```
[root@mcctb ~]# mysql -u root -p
```

```
Enter password: <configured_password>
```

```
Welcome to the MySQL monitor. Commands end with ; or \g.
```

```
Your MySQL connection id is 17
```

```
Server version: 5.6.29 MySQL Community Server (GPL)
```

```
Copyright (c) 2000, 2016, Oracle and/or its affiliates. All rights reserved.
```

```
Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.
```

```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
mysql>
```

Se il login MySQL funziona, l'output terminerà con `mysql>` prompt.

Abilitare l'impostazione di avvio automatico di MySQL

Verificare che la funzionalità di autostart sia attivata per il daemon MySQL. L'attivazione del daemon MySQL riavvia automaticamente MySQL se il sistema su cui risiede il software MetroCluster Tiebreaker si riavvia. Se il daemon MySQL non è in esecuzione, il software Tiebreaker continua a funzionare, ma non può essere riavviato e non è possibile apportare modifiche alla configurazione.

Fase

1. Verificare che MySQL sia abilitato all'avvio automatico all'avvio:

```
[root@mcctb ~]# systemctl list-unit-files mysqld.service
```

UNIT FILE	State
-----	-----
mysqld.service	enabled

Se MySQL non è abilitato all'avvio automatico all'avvio, consultare la documentazione di MySQL per abilitare la funzione di avvio automatico per l'installazione.

Installare il server MariaDB su Red Hat Enterprise Linux 8

È necessario installare il server MariaDB sul sistema host prima di installare o aggiornare il software Tiebreaker. Per Red Hat Enterprise Linux 7 o CentOS 7, [Installare MySQL Server](#).

Prima di iniziare

Il sistema host deve essere in esecuzione su Red Hat Enterprise Linux (RHEL) 8.

Fasi

1. Accedere come a. root utente o utente che può passare alla modalità avanzata dei privilegi.

```
login as: root
root@mcctb's password:
Last login: Fri Jan  8 21:33:00 2017 from host.domain.com
```

2. Installare il server MariaDB:

```
[root@mcctb ~]# yum install mariadb-server.x86_64
```

```
[root@mcctb ~]# yum install mariadb-server.x86_64
Loaded plugins: fastestmirror, langpacks
...
...

=====
===
Package                                Arch    Version                               Repository
Size
=====
===
Installing:
mariadb-server                        x86_64  1:5.5.56-2.el7                       base
11 M
```

```
Installing for dependencies:
```

```
Transaction Summary
```

```
=====
===
```

```
Install 1 Package (+8 Dependent packages)
```

```
Upgrade ( 1 Dependent package)
```

```
Total download size: 22 M
```

```
Is this ok [y/d/N]: y
```

```
Downloading packages:
```

```
No Presto metadata available for base warning:
```

```
/var/cache/yum/x86_64/7/base/packages/mariadb-libs-5.5.56-2.el7.x86_64.rpm:
```

```
Header V3 RSA/SHA256 Signature,
```

```
key ID f4a80eb5: NOKEY] 1.4 MB/s | 3.3 MB 00:00:13 ETA
```

```
Public key for mariadb-libs-5.5.56-2.el7.x86_64.rpm is not installed
```

```
(1/10): mariadb-libs-5.5.56-2.el7.x86_64.rpm | 757 kB 00:00:01
```

```
..
```

```
..
```

```
(10/10): perl-Net-Daemon-0.48-5.el7.noarch.rpm | 51 kB 00:00:01
```

```
-----
-----
```

```
Installed:
```

```
  mariadb-server.x86_64 1:5.5.56-2.el7
```

```
Dependency Installed:
```

```
  mariadb.x86_64 1:5.5.56-2.el7
```

```
  perl-Compress-Raw-Bzip2.x86_64 0:2.061-3.el7
```

```
  perl-Compress-Raw-Zlib.x86_64 1:2.061-4.el7
```

```
  perl-DBD-MySQL.x86_64 0:4.023-5.el7
```

```
  perl-DBI.x86_64 0:1.627-4.el7
```

```
  perl-IO-Compress.noarch 0:2.061-2.el7
```

```
  perl-Net-Daemon.noarch 0:0.48-5.el7
```

```
  perl-PlRPC.noarch 0:0.2020-14.el7
```

```
Dependency Updated:
```

```
  mariadb-libs.x86_64 1:5.5.56-2.el7
```

```
Complete!
```

3. Avviare il server MariaDB:

```
[root@mcctb ~]# systemctl start mariadb
```

4. Verificare che il server MariaDB sia stato avviato:

```
[root@mcctb ~]# systemctl status mariadb
```

```
[root@mcctb ~]# systemctl status mariadb
mariadb.service - MariaDB database server
...
Nov 08 21:28:59 mcctb systemd[1]: Starting MariaDB database server...
...
Nov 08 21:29:01 mcctb systemd[1]: Started MariaDB database server.
```

5. Configurare le impostazioni di sicurezza e password:



Quando viene richiesta la password di root, lasciarla vuota e premere Invio per continuare a configurare le impostazioni di sicurezza e password.

```
[root@mcctb ~]# mysql_secure_installation
```

```
root@localhost systemd]# mysql_secure_installation
```

```
NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!
```

In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here.

```
Enter current password for root (enter for none):
OK, successfully used password, moving on...
```

Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation.

```
Set root password? [Y/n] y
```

```
New password:
```

```
Re-enter new password:
```

```
Password updated successfully!
Reloading privilege tables..
... Success!
```

By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a

production environment.

Remove anonymous users? [Y/n] y

... Success!

Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] y

... Success!

By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment.

Remove test database and access to it? [Y/n] y

- Dropping test database...

... Success!

- Removing privileges on test database...

... Success!

Reloading the privilege tables will ensure that all changes made so far will take effect immediately.

Reload privilege tables now? [Y/n]

... Success!

Cleaning up...

All done! If you've completed all of the above steps, your MariaDB installation should now be secure.

Thanks for using MariaDB!

Attivare l'impostazione di avvio automatico per il server MariaDB

Verificare che la funzione di avvio automatico sia attivata per il server MariaDB. Se non si attiva la funzione di avvio automatico e il sistema su cui risiede il software MetroCluster Tiebreaker deve essere riavviato, il software Tiebreaker continua a funzionare, ma il servizio MariaDB non può essere riavviato e non è possibile apportare modifiche alla configurazione.

Fasi

1. Attivare il servizio di avvio automatico:

```
[root@mcctb ~]# systemctl enable mariadb.service
```


2. Verificare che MariaDB sia abilitato all'avvio automatico all'avvio:

```
[root@mcctb ~]# systemctl list-unit-files mariadb.service
```

UNIT FILE	State
-----	-----
mariadb.service	enabled

Installare o aggiornare a tiebreaker 1,5

Eseguire una nuova installazione o un aggiornamento a tiebreaker 1,5 sul sistema operativo Linux host per monitorare le configurazioni MetroCluster.

A proposito di questa attività

- Nel tuo sistema storage deve essere in esecuzione una versione supportata di ONTAP. Vedere ["Requisiti software"](#) tabella per ulteriori dettagli.
- OpenJDK deve essere installato utilizzando `yum install java-x.x.x-openjdk` comando. Tiebreaker 1,5 e versioni successive supporta OpenJDK 17, 18 o 19.
- È possibile installare MetroCluster Tiebreaker come utente non root con privilegi amministrativi sufficienti per eseguire l'installazione di tiebreaker, creare tabelle e utenti e impostare la password utente.

Fasi

1. Scaricare il software MetroCluster Tiebreaker e la chiave MetroCluster_tiebreaker_RPM_GPG.



La chiave MetroCluster_tiebreaker_RPM_GPG è disponibile per il download dalla stessa pagina in cui è stato scaricato il pacchetto software per tiebreaker 1,5 sul sito di supporto NetApp.

["MetroCluster Tiebreaker \(Download\) - Sito di supporto NetApp"](#)

2. Accedere all'host come utente root.
3. Creare un utente non root e `mcctbgrp` gruppo.
 - a. Creare un utente non root e impostare la password.

I seguenti comandi di esempio creano un utente non root denominato `mcctbuser1`:

```
[root@mcctb ~]# useradd mcctbuser1
[root@mcctb ~]# passwd mcctbuser1
Changing password for user mcctbuser1.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
```

- b. Creare un gruppo denominato `mcctbgrp`:

```
[root@mcctb ~]# groupadd mcctbgrp
```

- c. Aggiungere l'utente non root creato al mcctbgrp gruppo.

Viene aggiunto il seguente comando mcctbuser1 al mcctbgrp gruppo:

```
[root@mcctb ~]# usermod -a -G mcctbgrp mcctbuser1
```

4. Verificare il file RPM.

Eseguire i seguenti passaggi secondari dalla directory che contiene la chiave RPM.

- a. Scaricare e importare il file della chiave RPM:

```
[root@mcctb ~]# rpm --import MetroCluster_Tiebreaker_RPM_GPG.key
```

- b. Verificare che sia stata importata la chiave corretta controllando l'impronta digitale.

L'esempio seguente mostra un'impronta digitale della chiave corretta:

```
root@mcctb:~/signing/mcctb-rpms# gpg --show-keys --with-fingerprint
MetroCluster_Tiebreaker_RPM_GPG.key
pub   rsa3072 2022-11-17 [SCEA] [expires: 2025-11-16]
       65AC 1562 E28A 1497 7BBD  7251 2855 EB02 3E77 FAE5
uid           MCCTB-RPM (mcctb RPM production signing)
<mcctb-rpm@netapp.com>
```

- a. Verificare la firma: rpm --checksig NetApp-MetroCluster-Tiebreaker-Software-1.5-1.x86_64.rpm

```
NetApp-MetroCluster-Tiebreaker-Software-1.5-1.x86_64.rpm: digests OK
```



È necessario procedere con l'installazione solo dopo aver verificato la firma.

5. Installa o aggiorna il software tiebreaker:



È possibile eseguire l'aggiornamento alla versione 1.5 di Tiebreaker solo quando si esegue l'aggiornamento dalla versione 1.4 di Tiebreaker. L'aggiornamento da versioni precedenti a tiebreaker 1.5 non è supportato.

Selezionare la procedura corretta a seconda che si stia eseguendo una nuova installazione o aggiornando un'installazione esistente.

Eseguire una nuova installazione

- a. Recuperare e registrare il percorso assoluto per Java:

```
[root@mcctb ~]# readlink -f /usr/bin/java  
/usr/lib/jvm/java-19-openjdk-19.0.0.0.36-  
2.rolling.el8.x86_64/bin/java
```

- b. Eseguire il seguente comando: `rpm -ivh NetApp-MetroCluster-Tiebreaker-Software-1.5-1.x86_64.rpm`

Il sistema visualizza i seguenti output per una corretta installazione:



Quando richiesto durante l'installazione, fornire l'utente non root precedentemente creato e assegnato al `mcctbgrp` gruppo.

```

Verifying...
##### [100%]
Preparing...
##### [100%]
Updating / installing...
  1:NetApp-MetroCluster-Tiebreaker-
So##### [100%]
Enter the absolute path for Java : /usr/lib/jvm/java-19-openjdk-
19.0.0.0.36-2.rolling.el8.x86_64/bin/java
Verifying if Java exists...
Found Java. Proceeding with the installation.
Enter host user account to use for the installation:
mcctbuser1
User account mcctbuser1 found. Proceeding with the installation
Enter database user name:
root
Please enter database password for root
Enter password:
Sealed          false
Do you wish to auto unseal vault(y/n)?y
Enter the key1:
Enter the key2:
Enter the key3:
Success! Uploaded policy: mcctb-policy
Error enabling approle auth: Error making API request.
URL: POST http://127.0.0.1:8200/v1/sys/auth/approle
Code: 400. Errors:
* path is already in use at approle/
Success! Enabled the kv secrets engine at: mcctb/
Success! Data written to: auth/approle/role/mcctb-app
Password updated successfully in the vault.
Synchronizing state of netapp-metrocluster-tiebreaker-
software.service with SysV service script with
/usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable netapp-
metrocluster-tiebreaker-software
Created symlink /etc/systemd/system/multi-
user.target.wants/netapp-metrocluster-tiebreaker-software.service
→ /etc/systemd/system/netapp-metrocluster-tiebreaker-
software.service.
Attempting to start NetApp MetroCluster Tiebreaker software
services
Started NetApp MetroCluster Tiebreaker software services
Successfully installed NetApp MetroCluster Tiebreaker software
version 1.5.

```

Aggiornamento di un'installazione esistente

- a. Verificare che sia installata una versione supportata di OpenJDK e che sia la versione corrente di Java presente sull'host.



Per gli aggiornamenti a tiebreaker 1.5, è necessario installare OpenJDK versione 17, 18 o 19.

```
[root@mcctb ~]# readlink -f /usr/bin/java
/usr/lib/jvm/java-19-openjdk-19.0.0.0.36-
2.rolling.el8.x86_64/bin/java
```

- b. Verificare che il servizio Vault sia dissigillato e in esecuzione: `vault status`

```
[root@mcctb ~]# vault status
Key          Value
---          -
Seal Type    shamir
Initialized   true
Sealed       false
Total Shares  5
Threshold    3
Version      1.12.2
Build Date   2022-11-23T12:53:46Z
Storage Type  file
Cluster Name  vault
Cluster ID    <cluster_id>
HA Enabled    false
```

- c. Aggiornare il software Tiebreaker.

```
[root@mcctb ~]# rpm -Uvh NetApp-MetroCluster-Tiebreaker-Software-
1.5-1.x86_64.rpm
```

Il sistema visualizza il seguente output per un aggiornamento riuscito:

```

Verifying...
##### [100%]
Preparing...
##### [100%]
Updating / installing...
    1:NetApp-MetroCluster-Tiebreaker-
So##### [ 50%]

Enter the absolute path for Java : /usr/lib/jvm/java-19-openjdk-
19.0.0.0.36-2.rolling.el8.x86_64/bin/java
Verifying if Java exists...
Found Java. Proceeding with the installation.
Enter host user account to use for the installation:
mcctbuser1
User account mcctbuser1 found. Proceeding with the installation
Sealed          false
Do you wish to auto unseal vault(y/n)?y
Enter the key1:
Enter the key2:
Enter the key3:
Success! Uploaded policy: mcctb-policy
Error enabling approle auth: Error making API request.
URL: POST http://127.0.0.1:8200/v1/sys/auth/approle
Code: 400. Errors:
* path is already in use at approle/
Success! Enabled the kv secrets engine at: mcctb/
Success! Data written to: auth/approle/role/mcctb-app
Enter database user name : root
Please enter database password for root
Enter password:
Password updated successfully in the database.
Password updated successfully in the vault.
Synchronizing state of netapp-metrocluster-tiebreaker-
software.service with SysV service script with
/usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable netapp-
metrocluster-tiebreaker-software
Attempting to start NetApp MetroCluster Tiebreaker software
services
Started NetApp MetroCluster Tiebreaker software services
Successfully upgraded NetApp MetroCluster Tiebreaker software to
version 1.5.
Cleaning up / removing...
    2:NetApp-MetroCluster-Tiebreaker-
So##### [100%]

```



Se si immette la password root MySQL errata, il software Tiebreaker indica che è stato installato correttamente, ma visualizza i messaggi "Access denied" (accesso negato). Per risolvere il problema, è necessario disinstallare il software Tiebreaker utilizzando `rpm -e` e quindi reinstallare il software utilizzando la password root corretta di MySQL.

6. Verificare la connettività di Tiebreaker al software MetroCluster aprendo una connessione SSH dall'host di Tiebreaker a ciascuna delle LIF di gestione dei nodi e delle LIF di gestione dei cluster.

Informazioni correlate

["Supporto NetApp"](#)

Installare il Tiebreaker 1,4

Installare le dipendenze di MetroCluster tiebreaker 1,4

A seconda del sistema operativo Linux host, installare un server MySQL o MariaDB prima di installare o aggiornare il software tiebreaker.

Fasi

1. [Installare JDK](#).
2. Installare il server MySQL o MariaDB:

Se l'host Linux è	Quindi...
Red Hat Enterprise Linux 7/CentOS 7	Installare MySQL Server 5.5.30 o versioni successive e 5,6.x su Red Hat Enterprise Linux 7 o CentOS 7
Red Hat Enterprise Linux 8	Installare il server MariaDB su Red Hat Enterprise Linux 8

Installare JDK

È necessario installare JDK sul sistema host prima di installare o aggiornare il software tiebreaker. Tiebreaker 1,4 e versioni precedenti supporta JDK 1,8.0. (JRE 8).

Fasi

1. Accedere come utente "root".

```
login as: root
root@mcctb's password:
Last login: Fri Jan  8 21:33:00 2017 from host.domain.com
```

2. Installare JDK 1,8.0:

```
yum install java-1.8.0-openjdk.x86_64
```

```
[root@mcctb ~]# yum install java-1.8.0-openjdk.x86_64
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
... shortened....
Dependencies Resolved

=====
Package                        Arch      Version                               Repository      Size
=====
Installing:
  java-1.8.0-openjdk           x86_64    1:1.8.0.144-0.b01.el7_4             updates        238 k
  ..
  ..
Transaction Summary
=====
Install 1 Package (+ 4 Dependent packages)

Total download size: 34 M
Is this ok [y/d/N]: y

Installed:
java-1.8.0-openjdk.x86_64 1:1.8.0.144-0.b01.el7_4
Complete!
```

Installare MySQL Server 5.5.30 o versioni successive e 5.6.x su Red Hat Enterprise Linux 7 o CentOS 7

È necessario installare MySQL Server 5.5.30 o versione successiva e la versione 5.6.x sul sistema host prima di installare o aggiornare il software Tiebreaker. Per Red Hat Enterprise Linux 8, [Installare il server MariaDB](#).

Fasi

1. Accedere come utente root.

```
login as: root
root@mcctb's password:
Last login: Fri Jan  8 21:33:00 2016 from host.domain.com
```

2. Aggiungi il repository MySQL al tuo sistema host:

```
[root@mcctb ~]# yum localinstall https://dev.mysql.com/get/mysql57-community-release-el6-11.noarch.rpm
```



```

Loaded plugins: product-id, refresh-packagekit, security, subscription-
manager
Setting up Local Package Process
Examining /var/tmp/yum-root-LLUw0r/mysql-community-release-el6-
5.noarch.rpm: mysql-community-release-el6-5.noarch
Marking /var/tmp/yum-root-LLUw0r/mysql-community-release-el6-
5.noarch.rpm to be installed
Resolving Dependencies
--> Running transaction check
---> Package mysql-community-release.noarch 0:el6-5 will be installed
--> Finished Dependency Resolution
Dependencies Resolved

=====
=====
Package                Arch    Version
                               Repository
Size
=====
=====
Installing:
mysql-community-release
                               noarch el6-5 /mysql-community-release-el6-
5.noarch 4.3 k
Transaction Summary
=====
=====
Install                1 Package(s)
Total size: 4.3 k
Installed size: 4.3 k
Is this ok [y/N]: y
Downloading Packages:
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
   Installing : mysql-community-release-el6-5.noarch
1/1
   Verifying   : mysql-community-release-el6-5.noarch
1/1
Installed:
   mysql-community-release.noarch 0:el6-5
Complete!

```

3. Disattivare il repository MySQL 57:

```
[root@mcctb ~]# yum-config-manager --disable mysql57-community
```

4. Abilitare il repository MySQL 56:

```
[root@mcctb ~]# yum-config-manager --enable mysql56-community
```

5. Abilitare il repository:

```
[root@mcctb ~]# yum repolist enabled | grep "mysql.-community."
```

```
mysql-connectors-community      MySQL Connectors Community
21
mysql-tools-community          MySQL Tools Community
35
mysql56-community              MySQL 5.6 Community Server
231
```

6. Installare il server della community MySQL:

```
[root@mcctb ~]# yum install mysql-community-server
```

```
Loaded plugins: product-id, refresh-packagekit, security, subscription-
manager
This system is not registered to Red Hat Subscription Management. You
can use subscription-manager
to register.
Setting up Install Process
Resolving Dependencies
--> Running transaction check
.....Output truncated.....
---> Package mysql-community-libs-compat.x86_64 0:5.6.29-2.el6 will be
obsoleting
--> Finished Dependency Resolution
Dependencies Resolved

=====
=====
Package                               Arch    Version      Repository
Size
=====
=====
Installing:
mysql-community-client                x86_64  5.6.29-2.el6  mysql56-community
18 M
    replacing mysql.x86_64 5.1.71-1.el6
mysql-community-libs                  x86_64  5.6.29-2.el6  mysql56-community
1.9 M
```

```

replacing mysql-libs.x86_64 5.1.71-1.el6
mysql-community-libs-compat      x86_64  5.6.29-2.el6  mysql56-community
1.6 M
replacing mysql-libs.x86_64 5.1.71-1.el6
mysql-community-server           x86_64  5.6.29-2.el6  mysql56-community
53 M
replacing mysql-server.x86_64 5.1.71-1.el6
Installing for dependencies:
mysql-community-common           x86_64  5.6.29-2.el6  mysql56-community
308 k

Transaction Summary
=====
=====
Install                5 Package(s)
Total download size: 74 M
Is this ok [y/N]: y
Downloading Packages:
(1/5): mysql-community-client-5.6.29-2.el6.x86_64.rpm      | 18 MB
00:28
(2/5): mysql-community-common-5.6.29-2.el6.x86_64.rpm      | 308 kB
00:01
(3/5): mysql-community-libs-5.6.29-2.el6.x86_64.rpm       | 1.9 MB
00:05
(4/5): mysql-community-libs-compat-5.6.29-2.el6.x86_64.rpm | 1.6 MB
00:05
(5/5): mysql-community-server-5.6.29-2.el6.x86_64.rpm     | 53 MB
03:42
-----
-----
Total                                289 kB/s | 74 MB
04:24
warning: rpmts_HdrFromFdno: Header V3 DSA/SHA1 Signature, key ID
<key_id> NOKEY
Retrieving key from file:/etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
Importing GPG key 0x5072E1F5:
  Userid : MySQL Release Engineering <mysql-build@oss.oracle.com>
Package: mysql-community-release-el6-5.noarch
        (@/mysql-community-release-el6-5.noarch)
From    : file:/etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
Is this ok [y/N]: y
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
  Installing : mysql-community-common-5.6.29-2.el6.x86_64

```

```
....Output truncated....
```

```
1.el6.x86_64
```

```
7/8
```

```
Verifying : mysql-5.1.71-1.el6.x86_64
```

```
8/8
```

```
Installed:
```

```
mysql-community-client.x86_64 0:5.6.29-2.el6
```

```
mysql-community-libs.x86_64 0:5.6.29-2.el6
```

```
mysql-community-libs-compat.x86_64 0:5.6.29-2.el6
```

```
mysql-community-server.x86_64 0:5.6.29-2.el6
```

```
Dependency Installed:
```

```
mysql-community-common.x86_64 0:5.6.29-2.el6
```

```
Replaced:
```

```
mysql.x86_64 0:5.1.71-1.el6 mysql-libs.x86_64 0:5.1.71-1.el6
```

```
mysql-server.x86_64 0:5.1.71-1.el6
```

```
Complete!
```

7. Avviare il server MySQL:

```
[root@mcctb ~]# service mysqld start
```

```
Initializing MySQL database: 2016-04-05 19:44:38 0 [Warning] TIMESTAMP
with implicit DEFAULT value is deprecated. Please use
--explicit_defaults_for_timestamp server option (see documentation
for more details).
2016-04-05 19:44:38 0 [Note] /usr/sbin/mysqld (mysqld 5.6.29)
      starting as process 2487 ...
2016-04-05 19:44:38 2487 [Note] InnoDB: Using atomics to ref count
      buffer pool pages
2016-04-05 19:44:38 2487 [Note] InnoDB: The InnoDB memory heap is
disabled
....Output truncated....
2016-04-05 19:44:42 2509 [Note] InnoDB: Shutdown completed; log sequence
      number 1625987
```

PLEASE REMEMBER TO SET A PASSWORD FOR THE MySQL root USER!
To do so, start the server, then issue the following commands:

```
/usr/bin/mysqladmin -u root password 'new-password'
/usr/bin/mysqladmin -u root -h mcctb password 'new-password'
```

Alternatively, you can run:

```
/usr/bin/mysql_secure_installation
```

which will also give you the option of removing the test
databases and anonymous user created by default. This is
strongly recommended for production servers.

.....Output truncated.....

WARNING: Default config file /etc/my.cnf exists on the system
This file will be read by default by the MySQL server
If you do not want to use this, either remove it, or use the
--defaults-file argument to mysqld_safe when starting the server

```
Starting mysqld: [ OK ]
```

8. Verificare che MySQL Server sia in esecuzione:

```
[root@mcctb ~]# service mysqld status
```

```
mysqld (pid 2739) is running...
```

9. Configurare le impostazioni di sicurezza e password:

```
[root@mcctb ~]# mysql_secure_installation
```

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MySQL
SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!

In order to log into MySQL to secure it, we'll need the current password for the root user. If you've just installed MySQL, and you haven't set the root password yet, the password will be blank, so you should just press enter here.

Enter current password for root (enter for none): <== on default
install

hit enter here

OK, successfully used password, moving on...

Setting the root password ensures that nobody can log into the MySQL root user without the proper authorization.

Set root password? [Y/n] y

New password:

Re-enter new password:

Password updated successfully!

Reloading privilege tables..

... Success!

By default, a MySQL installation has an anonymous user, allowing anyone to log into MySQL without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment.

Remove anonymous users? [Y/n] y

... Success!

Normally, root should only be allowed to connect from 'localhost'.
This

ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] y

... Success!

By default, MySQL comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment.

Remove test database and access to it? [Y/n] y

- Dropping test database...

ERROR 1008 (HY000) at line 1: Can't drop database 'test';

```
database doesn't exist
```

```
... Failed! Not critical, keep moving...  
- Removing privileges on test database...  
... Success!
```

Reloading the privilege tables will ensure that all changes made so far will take effect immediately.

```
Reload privilege tables now? [Y/n] y
```

```
... Success!
```

All done! If you've completed all of the above steps, your MySQL installation should now be secure.

Thanks for using MySQL!

Cleaning up...

10. Verificare che l'accesso MySQL funzioni:

```
[root@mcctb ~]# mysql -u root -p
```

```
Enter password: <configured_password>
```

```
Welcome to the MySQL monitor. Commands end with ; or \g.
```

```
Your MySQL connection id is 17
```

```
Server version: 5.6.29 MySQL Community Server (GPL)
```

```
Copyright (c) 2000, 2016, Oracle and/or its affiliates. All rights reserved.
```

```
Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.
```

```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
mysql>
```

Quando il login MySQL funziona come previsto, l'output termina al `mysql>` prompt.

Abilitare l'impostazione di avvio automatico di MySQL

Verificare che la funzionalità di autostart sia attivata per il daemon MySQL. L'attivazione del daemon MySQL riavvia automaticamente MySQL se il sistema su cui risiede il software MetroCluster Tiebreaker si riavvia. Se il daemon MySQL non è in esecuzione, il software Tiebreaker continua a funzionare, ma non può essere riavviato e non è possibile apportare modifiche alla configurazione.

Fase

1. Verificare che MySQL sia abilitato all'avvio automatico all'avvio:

```
[root@mcctb ~]# systemctl list-unit-files mysqld.service
```

UNIT FILE	State
-----	-----
mysqld.service	enabled

Se MySQL non è abilitato all'avvio automatico all'avvio, consultare la documentazione di MySQL per abilitare la funzione di avvio automatico per l'installazione.

Installare il server MariaDB su Red Hat Enterprise Linux 8

È necessario installare il server MariaDB sul sistema host prima di installare o aggiornare il software Tiebreaker. Per Red Hat Enterprise Linux 7 o CentOS 7, [Installare MySQL Server](#).

Prima di iniziare

Il sistema host deve essere in esecuzione su Red Hat Enterprise Linux (RHEL) 8.

Fasi

1. Accedere come a. root utente.

```
login as: root
root@mcctb's password:
Last login: Fri Jan  8 21:33:00 2017 from host.domain.com
```

2. Installare il server MariaDB:

```
[root@mcctb ~]# yum install mariadb-server.x86_64
```

```
[root@mcctb ~]# yum install mariadb-server.x86_64
Loaded plugins: fastestmirror, langpacks
...
...

=====
===
Package                                Arch    Version              Repository
Size
=====
===
Installing:
mariadb-server                        x86_64  1:5.5.56-2.el7       base
11 M
```



```
Installing for dependencies:
```

```
Transaction Summary
```

```
=====
===
```

```
Install 1 Package (+8 Dependent packages)
```

```
Upgrade ( 1 Dependent package)
```

```
Total download size: 22 M
```

```
Is this ok [y/d/N]: y
```

```
Downloading packages:
```

```
No Presto metadata available for base warning:
```

```
/var/cache/yum/x86_64/7/base/packages/mariadb-libs-5.5.56-2.el7.x86_64.rpm:
```

```
Header V3 RSA/SHA256 Signature,
```

```
key ID f4a80eb5: NOKEY] 1.4 MB/s | 3.3 MB 00:00:13 ETA
```

```
Public key for mariadb-libs-5.5.56-2.el7.x86_64.rpm is not installed
```

```
(1/10): mariadb-libs-5.5.56-2.el7.x86_64.rpm | 757 kB 00:00:01
```

```
..
```

```
..
```

```
(10/10): perl-Net-Daemon-0.48-5.el7.noarch.rpm | 51 kB 00:00:01
```

```
-----
-----
```

```
Installed:
```

```
  mariadb-server.x86_64 1:5.5.56-2.el7
```

```
Dependency Installed:
```

```
  mariadb.x86_64 1:5.5.56-2.el7
```

```
  perl-Compress-Raw-Bzip2.x86_64 0:2.061-3.el7
```

```
  perl-Compress-Raw-Zlib.x86_64 1:2.061-4.el7
```

```
  perl-DBD-MySQL.x86_64 0:4.023-5.el7
```

```
  perl-DBI.x86_64 0:1.627-4.el7
```

```
  perl-IO-Compress.noarch 0:2.061-2.el7
```

```
  perl-Net-Daemon.noarch 0:0.48-5.el7
```

```
  perl-PlRPC.noarch 0:0.2020-14.el7
```

```
Dependency Updated:
```

```
  mariadb-libs.x86_64 1:5.5.56-2.el7
```

```
Complete!
```

3. Avviare il server MariaDB:

```
[root@mcctb ~]# systemctl start mariadb
```

4. Verificare che il server MariaDB sia stato avviato:

```
[root@mcctb ~]# systemctl status mariadb
```

```
[root@mcctb ~]# systemctl status mariadb
mariadb.service - MariaDB database server
...
Nov 08 21:28:59 mcctb systemd[1]: Starting MariaDB database server...
...
Nov 08 21:29:01 mcctb systemd[1]: Started MariaDB database server.
```

5. Configurare le impostazioni di sicurezza e password:



Quando viene richiesta la password di root, lasciarla vuota e premere Invio per continuare a configurare le impostazioni di sicurezza e password.

```
[root@mcctb ~]# mysql_secure_installation
```

```
root@localhost systemd]# mysql_secure_installation
```

```
NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!
```

In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here.

```
Enter current password for root (enter for none):
OK, successfully used password, moving on...
```

Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation.

```
Set root password? [Y/n] y
```

```
New password:
```

```
Re-enter new password:
```

```
Password updated successfully!
Reloading privilege tables..
... Success!
```

By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a

production environment.

Remove anonymous users? [Y/n] y

... Success!

Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] y

... Success!

By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment.

Remove test database and access to it? [Y/n] y

- Dropping test database...

... Success!

- Removing privileges on test database...

... Success!

Reloading the privilege tables will ensure that all changes made so far will take effect immediately.

Reload privilege tables now? [Y/n]

... Success!

Cleaning up...

All done! If you've completed all of the above steps, your MariaDB installation should now be secure.

Thanks for using MariaDB!

Attivare l'impostazione di avvio automatico per il server MariaDB

Verificare che la funzione di avvio automatico sia attivata per il server MariaDB. Se non si attiva la funzione di avvio automatico e il sistema su cui risiede il software MetroCluster Tiebreaker deve essere riavviato, il software Tiebreaker continua a funzionare, ma il servizio MariaDB non può essere riavviato e non è possibile apportare modifiche alla configurazione.

Fasi

1. Attivare il servizio di avvio automatico:

```
[root@mcctb ~]# systemctl enable mariadb.service
```

2. Verificare che MariaDB sia abilitato all'avvio automatico all'avvio:

```
[root@mcctb ~]# systemctl list-unit-files mariadb.service
```

UNIT FILE	State
-----	-----
mariadb.service	enabled

Installare o aggiornare a tiebreaker 1,4

Eseguire una nuova installazione o un aggiornamento a tiebreaker 1,4 sul sistema operativo Linux host per monitorare le configurazioni MetroCluster.

A proposito di questa attività

- Nel tuo sistema storage deve essere in esecuzione una versione supportata di ONTAP. Vedere ["Requisiti software"](#) tabella per ulteriori dettagli.
- OpenJDK deve essere installato utilizzando `yum install java-x.x.x-openjdk` comando. Tiebreaker 1,4 e versioni precedenti supporta JDK 1.8.0 (JRE 8).

Fasi

1. Scaricare il software MetroCluster Tiebreaker.

["MetroCluster Tiebreaker \(Download\) - Sito di supporto NetApp"](#)

2. Accedere all'host come utente root.
3. Installa o aggiorna il software tiebreaker:

Selezionare la procedura corretta a seconda che si stia eseguendo una nuova installazione o aggiornando un'installazione esistente.

Eseguire una nuova installazione

- a. Installare il software Tiebreaker eseguendo :

```
rpm -ivh NetApp-MetroCluster-Tiebreaker-Software-1.4-1.x86_64.rpm
```

Il sistema visualizza i seguenti output per una corretta installazione:

```
Verifying...
##### [100%]
Preparing...
##### [100%]
Updating / installing...
   1:NetApp-MetroCluster-Tiebreaker-
So##### [100%]
Post installation start Fri Apr  5 02:28:09 EDT 2024
Enter MetroCluster Tiebreaker user password:

Please enter mysql root password when prompted
Enter password:
Synchronizing state of netapp-metrocluster-tiebreaker-
software.service with SysV service script with
/usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable netapp-
metrocluster-tiebreaker-software
Created symlink /etc/systemd/system/multi-
user.target.wants/netapp-metrocluster-tiebreaker-software.service
→ /etc/systemd/system/netapp-metrocluster-tiebreaker-
software.service.
Attempting to start NetApp MetroCluster Tiebreaker software
services
Started NetApp MetroCluster Tiebreaker software services
Enabled autostart of NetApp MetroCluster Tiebreaker software
daemon during boot
Created symbolic link for NetApp MetroCluster Tiebreaker software
CLI
Post installation end Fri Apr  5 02:28:22 EDT 2024
Successfully installed NetApp MetroCluster Tiebreaker software
version 1.4.
```

Aggiornare un'installazione esistente

- a. Aggiornare il software Tiebreaker.

```
[root@mcctb ~]# rpm -Uvh NetApp-MetroCluster-Tiebreaker-Software-1.4-1.x86_64.rpm
```

Il sistema visualizza il seguente output per un aggiornamento riuscito:

```
Verifying...
##### [100%]
Preparing...
##### [100%]
Upgrading NetApp MetroCluster Tiebreaker software....
Stopping NetApp MetroCluster Tiebreaker software services before
upgrade.
Updating / installing...
  1:NetApp-MetroCluster-Tiebreaker-
So##### [ 50%]
Post installation start Mon Apr  8 06:29:51 EDT 2024
Synchronizing state of netapp-metrocluster-tiebreaker-
software.service with SysV service script with
/usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable netapp-
metrocluster-tiebreaker-software
Attempting to start NetApp MetroCluster Tiebreaker software
services
Started NetApp MetroCluster Tiebreaker software services
Enabled autostart of NetApp MetroCluster Tiebreaker software
daemon during boot
Created symbolic link for NetApp MetroCluster Tiebreaker software
CLI
Post upgrade end Mon Apr  8 06:29:51 EDT 2024
Successfully upgraded NetApp MetroCluster Tiebreaker software to
version 1.4.
Cleaning up / removing...
  2:NetApp-MetroCluster-Tiebreaker-
So##### [100%]
```



Se si immette la password root MySQL errata, il software Tiebreaker indica che è stato installato correttamente, ma visualizza i messaggi "Access denied" (accesso negato). Per risolvere il problema, è necessario disinstallare il software Tiebreaker utilizzando `rpm -e` e quindi reinstallare il software utilizzando la password root corretta di MySQL.

4. Verificare la connettività di Tiebreaker al software MetroCluster aprendo una connessione SSH dall'host di Tiebreaker a ciascuna delle LIF di gestione dei nodi e delle LIF di gestione dei cluster.

Informazioni correlate

"Supporto NetApp"

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