

# MCCO IP Alias Switchover

## Overview

MCCO is the first Data Guard configuration at SLAC that implements automatic failover using Oracle Data Guard Broker Fast-Start Failover (FSF).

The following three components participate in the MCCO FSF configuration:

- Solaris x86 database server *mccora1* running the MCCO instance with the *MCCO1* database unique name
- Solaris x86 database server *mccora2* running the MCCO instance with the *MCCO2* database unique name
- RHEL5 server *mcc-observer01* hosting an Oracle Administrator instance providing Data Guard Broker. The Fast-Start Failover Observer (FSFO) runs on this server as a background process.

The Observer process must run at all times in order to perform automatic failover as required.

An IP alias (aka virtual sub-interface) is used in the MCCO data guard configuration to facilitate transparent client connections to the primary database after an automatic failover is performed by the Observer. As such, the client applications do not know about *mccora1* and *mccora2*, but instead only know about *mcco*, which is the name attached to the IP alias address. Client applications use *mcco* as the value of the *HOST* parameter in the Oracle connection string.

```
root@mccoral # host mcco
mcco.slac.stanford.edu has address 134.79.151.38
```

The reason why an IP alias is being used is that currently the MCCO client applications do not have the capability to use Oracle Connect-Time Failover, Transparent Application Failover (TAF), or Fast Application Notification (FAN).

The IP alias must be attached at all times to the primary interface of the primary server as a virtual sub-interface, for the clients to be able to connect to the MCCO database. Therefore, after a failover is performed, the IP alias must be detached from the primary interface of the failed server, and attached to the primary interface of the server hosting the new primary database, i.e., the newly promoted standby database. This process is currently manual, but will be automated in the near future.

The IP alias must never be simultaneously up on both servers.

**NOTE:** *The IP alias will not be automatically reinstated when a server is rebooted, but must instead be manually created.*

## IP Alias

The manual process to switch over the IP alias after an automatic (or manual) failover is as follows:

1. On the failed server, e.g., mccora1, if the IP alias is up, bring it down by running the following script as user *root*:

```
/ul/ip-alias/rm-alias
```

2. On the new primary server, e.g., mccora2, if the IP alias is down, bring it up by running the following script as user *root*:

```
/ul/ip-alias/add-alias
```

You can verify that the IP alias is up on a server as follows:

```
root@mccoral # ifconfig -a
lo0: flags=2001000849 mtu 8232 index 1
inet 127.0.0.1 netmask ff000000
igb0: flags=1000843 mtu 1500 index 2
inet 134.79.151.42 netmask ffffffff broadcast 134.79.151.255
ether 0:14:4f:e7:6d:e6
igb0:1: flags=1000843 mtu 1500 index 2
inet 134.79.151.38 netmask ffffffff broadcast 134.79.151.255
igb1: flags=1000843 mtu 1500 index 3
inet 192.168.1.1 netmask ffffffff broadcast 192.168.1.255
ether 0:14:4f:e7:6d:e7
root@mccoral #
```

The above shows the sub-interface igb0:1 being up with the 134.79.151.38 IP address.

The scripts for adding and removing the IP alias shown above are as follows:

```
root@mccoral # cat rm-alias
#!/bin/sh

ifconfig igb0:1 down
ifconfig igb0:1 unplumb

root@mccoral #
root@mccoral # cat add-alias
#!/bin/sh

ifconfig igb0:1 plumb
ifconfig igb0:1 134.79.151.38 netmask 255.255.255.0 broadcast 134.79.151.255 up

root@mccoral #
```