

NIC Bonding Configuration Guide

Umair Shakil <umair.shakil@dancom.net.pk>

The concept of NIC Bonding (or NIC Teaming) is that you have two NICs bonded together to appear as if they are the same physical device. They will both present the same Hardware (MAC) address. This is accomplished through the ifenslave utility, which enables the kernel to see/use only one device.

In order to get correct going the kernel must have support for bonding devices. Here the CentOS 4.3 is used because It doesn't create any bonding issues.

Modes:

They specify one of the bonding policies. Possibilities are:

- 1.balance-rr (round robin) or 0
- 2.active-backup or 1
- 3.balance-xor or 2
- 4.broadcast or 3
- 5.802.3ad or 4
- 6.balance-tlb or 5
- 7.balance-alb or 6

Here I have used Active-Backup or 1 mode, which defines, only one slave in the bond is active, Other slave will become active if and only if other is down. Only one MAC will be externally visible on port to avoid confusing switch.

There are many variations for the configuration files but, This is what I have used for Bond0. Things worked fine for me:

```
#vi /etc/sysconfig/network-scripts/ifcfg-bond0
```

Enter these lines:

```
DEVICE=bond0
MASTER=yes
BOOTPROTO=none
ONBOOT=yes
IPADDR=172.16.40.66
NETWORK=172.16.40.0
GATEWAY=172.16.40.254
:wq
```

```
#vi /etc/sysconfig/network-scripts/ifcfg-eth0
```

Enter these lines:

```
DEVICE=eth0
SLAVE=yes
BOOTPROTO=none
ONBOOT=yes
MASTER=bond0
```

```
:wq
```

```
#vi /etc/sysconfig/network-scripts/ifcfg-eth1
```

Enter these lines:

```
DEVICE=eth1  
SLAVE=yes  
BOOTPROTO=none  
ONBOOT=yes  
MASTER=bond0  
:wq
```

```
#vi /etc/modprobe.conf
```

Append these lines:

```
alias bond0 bonding  
options bonding miimon=100 mode=1  
:wq
```

Now, all you should need to do is load the 'bonding' module and stop/start networking.

```
#modprobe bonding  
#service network restart
```

Bond0 will now be the interface that the kernel works with. running an 'ifconfig' will show all three interface (bond0,eth0,eth1), all with the same MAC and IP addresses.

For monitoring of failure interfaces use this:

```
#mii-tool  
or  
#less /proc/net/bonding/bond0
```