**[Interview Questions on Linux Networking with Answers](http://www.golinuxhub.com/2014/01/interview-questions-on-linux-networking.html)**

POSTED BY DEEPAK PRASAD SATURDAY, JANUARY 25, 2014 [10 COMMENTS](http://www.golinuxhub.com/2014/01/interview-questions-on-linux-networking.html#comment-form)

**1. How do you perform NIC teaming?**

**Ans:**Follow the below link  
[NIC Bonding in Red Hat Linux](http://www.golinuxhub.com/2014/01/how-to-do-ethernetnic-bondingteaming-in.html)

### [How to do Ethernet/NIC bonding/teaming in Red Hat Linux](http://www.golinuxhub.com/2014/01/how-to-do-ethernetnic-bondingteaming-in.html)

POSTED BY DEEPAK PRASAD SATURDAY, JANUARY 04, 2014 [2 COMMENTS](http://www.golinuxhub.com/2014/01/how-to-do-ethernetnic-bondingteaming-in.html#comment-form)

NICteaming/bonding is used mostly in scenarios where you cannot afford to loose connectivity due to ethernet failover issues and also it has many other advantages like to distribute bandwidth, fault tolerance etc  
  
**Let us start with the configuration steps**  
Make sure you have two(at least) physical Ethernet cards in your Linux machine.  
  
Edit the configuration files of both the Ethernet cards with the options as shown below  
# less /etc/sysconfig/network-scripts/ifcfg-eth0  
DEVICE=eth0  
MASTER=bond0  
USERCTL=no  
SLAVE=yes  
BOOTPROTO=none  
TYPE=Ethernet  
ONBOOT=yes  
# less /etc/sysconfig/network-scripts/ifcfg-eth1  
DEVICE=eth1  
TYPE=Ethernet  
ONBOOT=yes  
BOOTPROTO=none  
MASTER=bond0  
SLAVE=yes  
USERCTL=no  
Create a new file inside /etc/sysconfig/network-scripts/ifcfg-bond0 with the parameters as shown below  
# less /etc/sysconfig/network-scripts/ifcfg-bond0  
DEVICE=bond0  
IPADDR=192.168.0.100  
GATEWAY=192.168.0.1  
NETMASK=255.255.255.0  
USERCTL=no  
BOOTPROTO=none  
ONBOOT=yes  
PEERDNS=yes

**In RED HAT 5**  
Append/make these following changes in below mentioned file as shown

# vi /etc/modprobe.conf  
alias bond0 bonding  
options bond0 mode=1 miimon=100  
**In RED HAT 6**

You will not find modprobe.conf file so you need to define bonding option inside your ifcfg-bond0configuration file as shown below

# less /etc/sysconfig/network-scripts/ifcfg-bond0  
DEVICE=bond0  
IPADDR=192.168.0.100  
GATEWAY=192.168.0.1  
NETMASK=255.255.255.0  
DNS1=8.8.8.8  
BONDING\_OPTS="miimon=100 mode=1"  
USERCTL=no  
PEERDNS=yes  
BOOTPROTO=none  
ONBOOT=yes

Here, you can use different values for mode and miimon

### What are the different types of mode available for NIC bonding?

You can configure NIC Teaming for various purposes. So while configuration you will have to specify the purpose for which you want to utilize NIC Teaming.

Here are the list of available options

**balance-rr or 0 :** Sets a round-robin policy for fault tolerance and load balancing. Transmissions are received and sent out sequentially on each bonded slave interface beginning with the first one available.  
 **active-backup or 1:**Sets an active-backup policy for fault tolerance. Transmissions are received and sent out via the first available bonded slave interface. Another bonded slave interface is only used if the active bonded slave interface fails.  
  
**balance-xor or 2:** Sets an XOR(exclusive-or) policy for fault tolerance and load balancing. Using this method the interface matches up the incoming request's MAC Address with the MAC Address for one of the slave NICs. Once the link is established, transmissions are sent out sequentially beginning with the first available interface.  
 **broadcast or 3:** Sets a broadcast policy for fault tolerance. All transmissions are sent on all slave interfaces.  
 **802.3ad or 4:** Sets an IEEE802.3ad dynamic link aggregation policy. Creates aggregation groups that share the same speed and duplex settings. Transmits and receives on all slave in the active aggregator. Requires a switch that is 802.3ad compliant

**balance-tlb or 5:** Sets a Transmit Load Balancing (TLB) policy for fault tolerance and load balancing. The outgoing traffic is distributed according to the current load on each slave interface. Incoming traffic is received by the current slave. If the receiving slave fails, another slave takes over the MAC address of the failed slave.  
 **balance-alb or 6:** Sets and Active Load balancing (ALB) policy for fault tolerance and load balancing. Includes transmit and receive and load balancing for IPV4 traffic. Receive load balancing is achieved thorugh ARP negotiation

### What is miimon in NICTeaming?

Specifies (in milliseconds) how often MII link monitoring occurs. This is useful if high availability is required because MII is used to verify that the NIC is active. To verify that the driver for a particular NIC supports the MII tool, type the following command as root:  
# ethtool <interface\_name> | grep "Link detected:"

# ethtool eth0 | grep "Link detected:"  
        Link detected: yes  
  
# ethtool eth1 | grep "Link detected:"  
        Link detected: yes  
So for our demo purpose we will use mode 1 make NIC bonding for Fault Tolerance  
  
Now time to load the bonding module  
# modprobe bonding  
Restart the network interface to make the changes affect  
# service network restart  
Verify if your configuration has worked properly using below command  
# cat /proc/net/bonding/bond0  
Ethernet Channel Bonding Driver: v3.4.0-1 (October 7, 2008)  
  
Bonding Mode: fault-tolerance (active-backup)  
Primary Slave: None  
Currently Active Slave: eth0  
MII Status: up  
MII Polling Interval (ms): 100  
Up Delay (ms): 0  
Down Delay (ms): 0  
  
Slave Interface: eth0  
MII Status: up  
Speed: 1000 Mbps  
Duplex: full  
Link Failure Count: 0  
Permanent HW addr: 5f:5g:56:3v:23:54  
  
Slave Interface: eth1  
MII Status: up  
Speed: 1000 Mbps  
Duplex: full  
Link Failure Count: 0  
Permanent HW addr: 4f:76:23:v4:76:f6

Check your network status

# ifconfig  
bond0     Link encap:Ethernet  HWaddr R5:4G:45:6H:14:54  
          inet addr:192.168.0.100  Bcast:192.168.0.1  Mask:255.255.255.0  
          UP BROADCAST RUNNING MASTER MULTICAST  MTU:1500  Metric:1  
          RX packets:675166546 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:60123345 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:0  
          RX bytes:717558660669 (668.2 GiB)  TX bytes:680121390699 (633.4 GiB)  
  
eth0      Link encap:Ethernet  HWaddr 5F:5G:56:3V:23:54  
          UP BROADCAST RUNNING SLAVE MULTICAST  MTU:1500  Metric:1  
          RX packets:675130834 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:601230970 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:717553120481 (668.2 GiB)  TX bytes:680121390699 (633.4 GiB)  
          Interrupt:169 Memory:96000000-96012800  
  
eth1      Link encap:Ethernet  HWaddr 4F:76:23:V4:76:F6  
          UP BROADCAST RUNNING SLAVE MULTICAST  MTU:1500  Metric:1  
          RX packets:35302 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:5540188 (5.2 MiB)  TX bytes:0 (0.0 b)  
          Interrupt:122 Memory:94000000-94012800

Let me know your success and failures

**2. What is the difference between TCP and UDP protocol?**  
Show/Hide Answer

**Ans:**

* TCP is a connection oriented protocol and contain the information of sender as well as receiver.
* Eg: HTTP.FTP, Telnet
* TCP is slower than UDP due to its error checking mechanism
* UDP protocols are connection less packets have no information to where they are going. These type of ports are generally used for broadcasting.
* For eg: DNS, DHCP
* UDP are faster

**3. What are the benifits of NIC Teaming?**  
Show/Hide Answer

**Ans:**Load balancing  
Fault Tolerance  
Failover

**4. Mention all the network configuration files you would check to configure your ethernet card**  
Show/Hide Answer

**Ans:**/etc/sysconfig/network-scripts/ifcfg-eth\*  
/etc/sysconfig/network  
/etc/resolv.conf  
/etc/nsswitch.conf

**5. What is the the use of /etc/resolv.conf?**  
Show/Hide Answer

**Ans:**It contains the details of nameserver i.e details of your DNS server which helps us connect to Internet

**6. What is the use of /etc/hosts file?**  
Show/Hide Answer

**Ans:**To map any hostname to its relevant IP

**7. What is the command to check all the open ports of your machine?**  
Show/Hide Answer

**Ans:**  
nmap localhost  
Follow the below link for more details  
[How to get a list of open ports in Linux?](http://www.golinuxhub.com/2013/05/how-to-get-list-of-open-ports-in-linux.html)

### [How to get a list of open ports in Linux?](http://www.golinuxhub.com/2013/05/how-to-get-list-of-open-ports-in-linux.html)

POSTED BY DEEPAK PRASAD FRIDAY, MAY 03, 2013 [NO COMMENTS](http://www.golinuxhub.com/2013/05/how-to-get-list-of-open-ports-in-linux.html#comment-form)

So you have set up a very secured server but still don't you want to cross check if the machine is really secured and your server has not been compromised by anyone. If is always better to regularly scan your system with open ports and list of connected machines.  
  
For this blog I will show you the command to get a list of open ports in any machine  
  
nmap command can be used to do the same. You can download in **RedHat** machine using yum  
# yum install nmap  
Once installed verify the package

# rpm -qa | grep nmap  
nmap-5.51-2.el6.i686  
**Syntax**  
# nmap <address>

# nmap localhost  
Starting Nmap 5.51 ( http://nmap.org ) at 2013-09-18 12:04 IST  
Nmap scan report for localhost (127.0.0.1)  
Host is up (0.0000080s latency).  
Other addresses for localhost (not scanned): 127.0.0.1  
Not shown: 995 closed ports  
PORT STATE SERVICE  
22/tcp open ssh  
25/tcp open smtp  
111/tcp open rpcbind  
631/tcp open ipp  
5989/tcp open wbem-https  
Nmap done: 1 IP address (1 host up) scanned in 0.29 seconds

Here as you can see I got a long list of opened ports on my machine.

Go ahead and try the same on your machine.

**8. What is the command to check all the listening ports and services of your machine?**  
Show/Hide Answer

**Ans:**netstat -ntlp

**9. How can you make a service run automatically after boot?**  
Show/Hide Answer

**Ans:**using chkconfig command

**10. What are the 6 run levels of linux? And how can you configure your script to run only when the system boots into GUI and not to any other runlevel**  
Show/Hide Answer

**Ans:**0 power off  
1 single user  
2 multi user without network  
3 multiuser with network  
4 development purpose  
5 GUI  
6 Restart  
  
chkconfig --level 5 service\_name on  
chkconfig --level 1234 service\_name off

**11. What is a 3 way handshake protocol? Give an example of it**  
Show/Hide Answer

**Ans:**SYN - system 1 sends SYN signal to rmote system  
SYN-ACK - remote sysstem receives the syn signal and sends ack signal  
ACK - system again receives ack signal from remote system and connection is established  
  
**For Example:** When you ping to a machine you are sending a SYN signal which is ACK by the remote machine then it sends a SYN ACK signal back to the host machine. Then the host machine receives SYN ACK and sends the ACK signal back to confirm the same.

**12. What are the possible ways to check if your system is listening to port 67**  
Show/Hide Answer

**Ans:**# nmap localhost | grep 67  
# netstat -ntlp | grep 67