How to Set up the DGS3200 Static Link Aggregation and Linux Bonding

The following is a example for your reference.

1. **Topology**

    DGS3200(port1)-----(eth0)Linux
       (port2)-----(eth1)

2. Set up the Linux

Go to /etc/network/interfaces

```
auto bond0
iface bond0 inet manual
pre-up ifconfig bond0 up
pre-up ifconfig eth1 up
pre-up ifconfig eth2 up
up ifenslave bond0 eth1 eth2
down ifconfig eth1 down
down ifconfig eth2 down
down ifenslave -d bond0 eth1 eth2

auto vlan888
iface vlan888 inet static
address 192.168.1.28
network 192.168.1.0
netmask 255.255.255.0
broadcast 192.168.1.255
vlan-raw-device bond0
```

Go to /etc/modprobe.d/aliases

```
alias bond0 bonding
alias eth1 igb
alias eth2 igb
options bonding mode=2 use_carrier=1 xmit_hash_policy=layer2+3 miimon=100
options igb IntMode=2,2 RSS=0,0
```

3. **Configure DGS3200**

    ```
    config link_aggregation algorithm mac_source_dest
    create link_aggregation group_id 1
    config link_aggregation group_id 1 master_port 1 ports 1-2 state enable
    config lacp_port 1-2 mode active
    config lacp_port 3-10 mode passive
    ```

Linux Bonding Mode explanation

mode=0 (balance-rr)
Round-robin policy: Transmit packets in sequential order from the first available slave through the last. This mode provides load balancing and fault tolerance.

mode=1 (active-backup)
Active-backup policy: Only one slave in the bond is active. A different slave becomes active if, and only if, the active slave fails. The bond's MAC address is externally visible on only one port (network adapter) to avoid confusing the switch. This mode provides fault tolerance. The primary option affects the behavior of this mode.

mode=2 (balance-xor)
XOR policy: Transmit based on [(source MAC address XOR'd with destination MAC address) modulo slave count]. This selects the same slave for each destination MAC address. This mode provides load balancing and fault tolerance.

mode=3 (broadcast)
Broadcast policy: transmits everything on all slave interfaces. This mode provides fault tolerance.

mode=4 (802.3ad)
IEEE 802.3ad Dynamic link aggregation. Creates aggregation groups that share the same speed and duplex settings. Utilizes all slaves in the active aggregator according to the 802.3ad specification.

 Pre-requisites:
 1. Ethtool support in the base drivers for retrieving
 the speed and duplex of each slave.
 2. A switch that supports IEEE 802.3ad Dynamic link
 aggregation.
 Most switches will require some type of configuration
 to enable 802.3ad mode.

mode=5 (balance-tlb)
Adaptive transmit load balancing: channel bonding that does not require any special switch support. The outgoing traffic is distributed according to the current load (computed relative to the speed) on each slave. Incoming traffic is received by the current slave. If the receiving slave fails, another slave takes over the MAC address of the failed receiving slave.

 Prerequisite:
 Ethtool support in the base drivers for retrieving the
 speed of each slave.

mode=6 (balance-alb)
Adaptive load balancing: includes balance-tlb plus receive load balancing (rlb) for IPV4 traffic, and does not require any special switch support. The receive load balancing is achieved by ARP negotiation. The bonding driver intercepts the ARP Replies sent by the local system on their way out and overwrites the source hardware address with the unique hardware address of one of the slaves in the bond such that different peers use different hardware addresses for the server

End