The Gratuitous ARP is used to enable/disable updating the ARP cache based on the received gratuitous ARP packets. If the switch receives a gratuitous ARP packet and the sender's IP address in its ARP table, it updates the ARP table.

For example, a network card had been changed recently(changing the IP address to MAC address mapping) and other hosts still had the old mapping in their ARP cache. Below is an example:

a.> Network topology

PC(10.90.90.200)---DGS34xx(10.90.90.100)

b.> Now, change the PC's IP from 10.90.90.200 to 10.90.90.100. The PC will send a **gratuitous_arp** to swtich.

c.> The result of gratuitous_arp **Disable** or **Enable** would be following:

>config gratuitous_arp learning [enable|disable]

1. with **gratuitous_arp learning disable**, the APR table & IPFDB table will not change immediately even if the swtich received the gratuitous_arp packet from PC.

```
DGS-3427:5#show arpentry
Command: show arpentry
 ARP Aging Time : 20

Interface     IP Address       MAC Address        Type
-------------  ---------------  -----------------  ---------------
System        10.0.0.0          FF-FF-FF-FF-FF-FF  Local/Broadcast
System        10.90.90.90       00-13-46-FD-19-8B  Local
System        10.90.90.200      00-02-9B-34-56-78  Dynamic
System        10.255.255.255   FF-FF-FF-FF-FF-FF  Local/Broadcast

Total Entries: 4
```

```
DGS-3427:5#show ipfdb
Command: show ipfdb

Interface    IP Address       Port   Learned
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System        10.90.90.200     1       Dynamic

Total Entries: 1
```

2. with gratuitous_arp learning enable, the APR table & IPFDB table will change immediately

```
DGS-3427:5#show arp
Command: show arpentry


 ARP Aging Time : 20
```

```
Interface      IP Address       MAC Address       Type
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System         10.0.0.0         FF-FF-FF-FF-FF-FF  Local/Broadcast
System         10.90.90.90      00-13-46-FD-19-8B  Local
System         10.90.90.100     00-02-9B-34-56-78  Dynamic
System         10.90.90.200     00-02-9B-34-56-78  Dynamic
System         10.255.255.255   FF-FF-FF-FF-FF-FF  Local/Broadcast

Total Entries: 5

DGS-3427:5#show ipfdb
Command: show ipfdb

Interface     IP Address       Port    Learned
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System        10.90.90.100     1       Dynamic
System        10.90.90.200     1       Dynamic

Total Entries: 2
```

d.> Side effect: if you enable the Gratuitous_arp function on switch, it will pick up all the Gratuitous_arp packet. And CPU have to process it. If there are too much Gratuitous_arp packet onto switch, it will consume CPU resource. So, this function is diasbled by default.