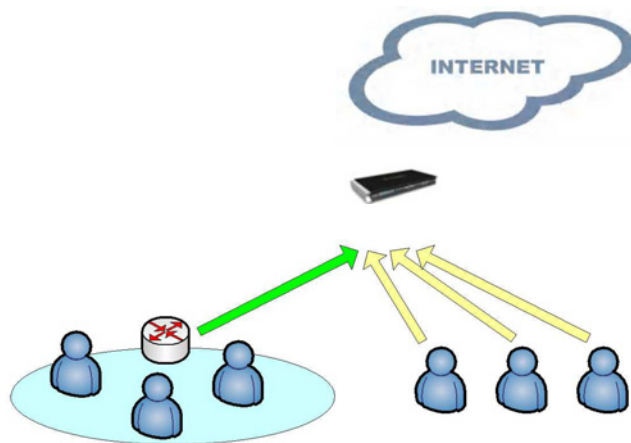**DFL-M510**
Application Note

DFL-M510 in L3 Switch Environment

The host learning in DFL-M510 identifies every MAC address as a single host, and a host can be set as MAC LOCK or MAC-IP BIND from UI; the device only checks the MAC field of packets for a MAC LOCK host and checks both of MAC and IP address for MAC-IP BIND host. The advantage of MAC-based view is that it can differentiate the hosts with the same IP addresses (e.g., DHCP environment), and provides the utilization information of these hosts.

The Layer 3 switch/router replaces source MAC addresses of outbound traffic for Layer 2 routing.

Fig. 1 A Layer 3 witch/router under DFL-M510

As described above, DFL-M510 recognizes a host by its MAC address, so we do not suggest that a user places a Layer 3 switch/router beneath DFL-M510. Because this topology makes the DFL-M510 view the subnet(s) under a Layer 3 switch/router as a single device, and the aggregated information from the subnet(s) may not be clear enough to a network administrator. However, a user still has complete control of networking. Moreover, with malicious behaviour from the Internet, the topology of Fig. 1 does not compromise the networking security protected by DFL-M510.

By MAC-based view, we suggest a network administrator should consider the hosts behind a Layer 3 switch as a group in DFL-M510, and apply the policy to this group.

How to solve potential problem with the L3 device (switch or router) beneath DFL-M510?

Because DFL-M510 has a new technology which can track MAC addresses. Using this new technology it can record the user's MAC and IP address, and manage it, even if the user downloads some tools that can change the IP address very fast, the tool will not be able to work under the DFL-M510.

But it has a potential problem if a L3 device is placed beneath the DFL-M510. When a packet passes through the L3 switch or Router, those devices will change the MAC Address to the device's MAC address. In this situation, DFL-M510 will not learn MAC address form the L3 device.

In order to solve the problem, we will have two operation modes. One is single segment mode the other is multi segment mode*. Single segment mode works for an environment which only has one segment.

Multi segment mode works for an environment which has several segments. If you want to use DFL-M510 to manage your environment, DFL-M510 will lose MAC tracking function. You must enable IP-MAC binding function of L3 device, then DFL-M510 can manage all hosts by IP address.

*Multi-segment mode solution will be added in the firmware 1.22.00.