

# Algorithm For D-ARPSpoof

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## 1 Data Structures Used

1.  $\text{HashMap}\langle \text{OFPort}, \text{ArrayList}\langle \text{Vlan}, \text{IP}, \text{Mac} \rangle \rangle : \text{ipPortMap}$
2.  $\text{HashMap}\langle \text{MacAddress}, \text{HashMap}\langle \text{Vlan}, \text{Switch-Port} \rangle \rangle : \text{macPortMap}$

## 2 Algorithm

### 2.1 Handling Packet-IN DHCP Messages

#### 2.1.1 Updating Data Structures

- **DHCP REQUEST**

1. Delete the mapped mac address for inPort and incoming packet's MAC Address from macPortMap.
2. If ipPortMap has entry for inPort and incomingPacket's vlan ID then delete that entry.
3. If macPortMap does not have any entry for incoming packet's source MAC Address and vlan id, then add those entry in macPortMap.

- **DHCP ACKNOWLEDGEMENT**

1. Get Switch-Port pair from macPortMap for destination mac address and vlan id and name that as pair.
2. Add following entry in ipPortMap:  
 $\langle \text{pair.switch}, \text{pair.port}, \text{vid}, \text{dhcpPayload.yourIPAddress}, \text{destination-MAC} \rangle$

### 2.2 Handling DHCP-ACK PacketOut Messages

Same as section 2.1.1 DHCP ACKNOWLEDGEMENT handling.