Basic Understanding of LAN communication via TRUNK

PC0 want to communicate PC2

**Step 1:** As soon as we will give ping to PC2

PC0 do the ANDing process to find the whether the destination PC2 (IP) is in same subnet or different subnet.

**Step 2:** Now lets assume it is in Same subnet

PC0 wants the PC2 mac address to form frame.

**Step 3:** PC0 check its arp table to find whether it has PC2(10.0.0.2) mac address

PC>arp -a

<table>
<thead>
<tr>
<th>Internet Address</th>
<th>Physical Address</th>
<th>Type</th>
</tr>
</thead>
</table>

PC>

**Step 4:** Since it doesn't have the mac address for PC2 (10.0.0.2) it will send an ARP Request

Note Remember the ARP is a broadcast frame.

And see the frame PC0 generated the Frame without tagging as PC0 its in VLAN 2 but still it doesn't add
its frame. I hope now you got cleared till this. Lets see next step

**Step 5:** PC0 send this frame to Switch. Switch receive the frame on interface Fa0/1 (PC0 connected to switch via Fa0/1)

**Step 6:** Switch examine its VLAN table and find out interface fa0/1 belongs to which VLAN

```
Switch#sh vlan brief

VLAN Name     Status   Ports
---------------------
1       default     active   Fa0/4, Fa0/5, Fa0/6, Fa0/7
          Fa0/8, Fa0/9, Fa0/10, Fa0/11
          Fa0/12, Fa0/13, Fa0/14, Fa0/15
          Fa0/16, Fa0/17, Fa0/18, Fa0/19
          Fa0/20, Fa0/21, Fa0/22, Fa0/23
          Fa0/24
10      VLAN0010   active   Fa0/1
20      VLAN0020   active   Fa0/2
1002    fddi-default  active
1003    token-ring-default active
1004    fddinet-default active
1005    trnet-default active
```

**Step 7:** As switch doesn’t have any other port belongs to VLAN 10 Switch now check its truck port to forward that ARP request.

```
Switch#sh int trunk

Port   Mode Encapsulation Status Native vlan
Fa0/3   on 802.1q trunking 1
```

Note: I have omitted some lines from output for clear understanding

**Step 8:** Switch now have to forward the Frame on Trunk port Interface fa0/3.

**Step 9:** Now switch will add the tag in the frame and send the frame out on interface fa0/3

![Ethernet 802.1q](image)

Note: TCI (Tag control Identifier) its in Hexa format A=10

**Step 10:** Switch2 will see this tag and find its VLAN 10 associated ports

Switch2#sh vlan brief
### VLAN Name | Status | Ports
--- | --- | ---
1 | default | active Fa0/4, Fa0/5, Fa0/6, Fa0/7, Fa0/8, Fa0/9, Fa0/10, Fa0/11, Fa0/12, Fa0/13, Fa0/14, Fa0/15, Fa0/16, Fa0/17, Fa0/18, Fa0/19, Fa0/20, Fa0/21, Fa0/22, Fa0/23, Fa0/24
10 | VLAN0010 | active Fa0/1
20 | VLAN0020 | active Fa0/2
30 | VLAN0030 | active
1002 | fddi-default | active
1003 | token-ring-default | active
1004 | fddinet-default | active
1005 | trnet-default | active

Switch2 will forward the Frame on interface Fa0/1 but it will remove the Tag while sending out on that interface.

**Ethernet II**

<table>
<thead>
<tr>
<th>0</th>
<th>4</th>
<th>8</th>
<th>14</th>
<th>19</th>
<th>Bytes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PREAMBLE:</strong> 101010...1011</td>
<td><strong>DEST MAC:</strong> FFFF.FFFF.FFFF</td>
<td><strong>SRC MAC:</strong> 0001.6319.329D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TYPE:</strong> 0x806</td>
<td><strong>DATA (VARIABLE LENGTH)</strong></td>
<td><strong>FCS:</strong> 0x0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>