Configuring VLAN C-Tags and T-tags

App Note 302 – Configuring VLAN C-Tags and T-Tags

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Application note:
This application note describes how to properly configure customer and service provider tags (Ethertype x88A8) using the case studies B and E below simultaneously.

<table>
<thead>
<tr>
<th>Case A:</th>
<th>Frame is untagged by subscriber</th>
<th>C-tag is added by Provider upon entrance to network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case B:</td>
<td>Frame is untagged by subscriber</td>
<td>S-tag is added by Provider upon entrance to network</td>
</tr>
<tr>
<td>Case C:</td>
<td>Frame is C-tagged by subscriber</td>
<td>C-tag is continued by Provider</td>
</tr>
<tr>
<td>Case D:</td>
<td>Frame is C-tagged by subscriber</td>
<td>C-tag is replaced with S-tag by Provider</td>
</tr>
<tr>
<td>Case E:</td>
<td>Frame is C-tagged by subscriber</td>
<td>S-tag (2nd tag) is added by Provider at UNI (or later point)</td>
</tr>
</tbody>
</table>

Note: There are (4) different VLAN properties for a port configured in a VLAN entry at the System Level in the VLAN database:  
1) memgressNomod – the frame maps to this VLAN egress unmodified out on this port (frame maps to a VLAN id when it ingress a port, the VLAN id is mapped based on either the existing VID if it is already tagged or the port default VLAN ID if untagged)  
2) memEgress Tag – the frame maps to this VLAN egress tagged out on this port  
3) memEgress UnTag – the frame maps to this VLAN egress untagged out on this port  
4) notMember – frame maps to this VLAN will not be forwarded out on this port
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The ports can be configured in one of the (3) Frame Tag Modes:

1) Customer – this is VLAN unaware mode. This means, if a VLAN entry has this port member property as memegressTag or memegressUntag.
2) Network (This enables Dot1.Q Mode) - Whenever tagging/untagging is required, all the participating ports must be configured as Network. This includes the port that is facing the untagged traffic as well.
3) Provider (Provider Ether types 8100,9100,X88A8) - this mode will ensure the frame egressing this port will always have S-Tag added, irrespective of the ingress frame was already C-Tagged(Case-E) or plain untagged(Case-B).

Step 1: Add the VLAN ID into the VLAN DB from the VLAN main Page.

Select REM-S323x, VLAN Tab, Enter VLAN ID = 100,
Set Port 1 to memEgressNoMod.
Set Port 2 to memEgressNoMod.
Click Add

Step 2: Configure the "Provider Port" under port level config. Go to REM S3230-1040, Port 2 Click on Advance
Step 3: Set Frame Tag Mode to Provider, Set Ethertype as x88A8, Save
Step 4: Configure the “Customer Port” under port level config: Go to REM S3230-1040, Port 1 Click on Advance

Step 5: Verify VLAN database for correct set-up:
Select REM-C323x, VLAN Tab
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