IP Routing Between VLANs

This example configuration provides IP routing between VLANs. All protocols are switched within each VLAN.

Here are specific design parameters for this example:
- clients on the network are directly-connected to 10/100 ports
- the 10/100 ports are divided into two VLANs
- client NICs are not 802.1Q-aware, so they must send and receive untagged packets
- one Gigabit port is configured to carry traffic from both VLANs to a connected device
- IP traffic is routed between the two VLANs; all protocols are switched within each VLAN
- RIP version 1 routing updates are sent on both VLANs

Port, VLAN, and tagging values for this example:

<table>
<thead>
<tr>
<th>Port(s)</th>
<th>VLAN(s)</th>
<th>tag or untag</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 to A24</td>
<td>100</td>
<td>untag</td>
</tr>
<tr>
<td>C1 to C24</td>
<td>200</td>
<td>untag</td>
</tr>
<tr>
<td>B1</td>
<td>100 and 200</td>
<td>tag</td>
</tr>
</tbody>
</table>

Each VLAN has an IP address assigned as follows:

- VLAN 100: 10.10.100.1 subnet mask 255.255.255.0
- VLAN 200: 10.10.200.1 subnet mask 255.255.255.0
**WARNING:**

The example configuration below was created from a factory default configuration on the HP ProCurve 5300XL Series switches. We recommend saving your current configuration if necessary. To reset an HP ProCurve 5300XL Series switch to a factory default configuration use the following commands:

```
HP ProCurve Switch 5304XL>enable
HP ProCurve Switch 5304XL#erase startup-config
Configuration will be deleted and device rebooted, continue [y/n]? y
```

**NOTES:**

1. The interface port numbers (e.g. interface a1) and the IP address (e.g. 10.10.100.1) may differ in your network, so adjust these values accordingly.
2. The HP ProCurve 5300XL Series switch (e.g. HP 5304XL), type of module(s), and software version number below may not accurately reflect the device(s) you are configuring.
3. The configuration example below was created on software version E.06.01.

**CONFIGURATION COMMANDS: (created on software version E.06.01):**

```
HP ProCurve Switch 5304XL# enable
HP ProCurve Switch 5304XL# config term

HP ProCurve Switch 5304XL(config)# ip routing
HP ProCurve Switch 5304XL(config)# router rip
HP ProCurve Switch 5304XL(rip)# vlan 100
HP ProCurve Switch 5304XL(vlan-100)# untag a1-a24
HP ProCurve Switch 5304XL(vlan-100)# tag b1
HP ProCurve Switch 5304XL(vlan-100)# ip address 10.10.100.1/24
HP ProCurve Switch 5304XL(vlan-100)# ip rip v1-only

HP ProCurve Switch 5304XL(vlan-100)# vlan 200
HP ProCurve Switch 5304XL(vlan-200)# untag c1-c24
HP ProCurve Switch 5304XL(vlan-200)# tag b1
HP ProCurve Switch 5304XL(vlan-200)# ip address 10.10.200.1/24
HP ProCurve Switch 5304XL(vlan-200)# ip rip v1-only
HP ProCurve Switch 5304XL(vlan-200)# write mem
```
RESULTING CONFIGURATION:

Startup configuration:

; J4850A Configuration Editor; Created on release #E.06.01

hostname "HP ProCurve Switch 5304XL"
time daylight-time-rule None
cdp run
module 1 type J4820A
module 2 type J4821A
module 3 type J4820A
ip routing
snmp-server community "public" Unrestricted
vlan 1
   name "DEFAULT_VLAN"
   untagged B1-B4
   ip address dhcp-bootp
   no untagged A1-A24
   no untagged C1-C24
   exit
vlan 100
   name "VLAN100"
   untagged A1-A24
   ip address 10.10.100.1 255.255.255.0
   tagged B1
   exit
vlan 200
   name "VLAN200"
   ip address 10.10.200.1 255.255.255.0
   tagged B1
   exit
   no aaa port-access authenticator active
router rip
   exit
vlan 200
   ip rip
   ip rip send v1-only
   ip rip receive v1-only
   exit
vlan 100
   ip rip
   ip rip send v1-only
   ip rip receive v1-only
   exit
VERIFICATION COMMANDS:

The following CLI commands can be used to display OSPF information:

- `show vlan`
- `show vlan <VLAN-ID>`

Outputs from these show commands for this example follow below. Refer to Chapter 11 and 16 of the [HP Procurve Series 5300XL Switches Management and Configuration Guide](#) for more details.

```
HP ProCurve Switch 5304XL# sh vlan

Status and Counters - VLAN Information

Maximum VLANs to support : 8
Primary VLAN : DEFAULT_VLAN
Management VLAN :

802.1Q VLAN ID Name          Status
-------------- ------------- --------------
    1      DEFAULT_VLAN  Static
   100     VLAN100       Static
   200     VLAN200       Static
```

```
HP ProCurve Switch 5304XL# sh vlan 100

Status and Counters - VLAN Information - Ports - VLAN 100

802.1Q VLAN ID : 100
Name            : VLAN100
Status          : Static

Port Information Mode     Unknown VLAN Status
---------------- -------- ------------ 
A1           Untagged Learn        Down
A2           Untagged Learn        Down
A3           Untagged Learn        Down
A4           Untagged Learn        Down
```
### HP ProCurve Switch 5304XL# sh vlan 200

Status and Counters - VLAN Information - Ports - VLAN 200

802.1Q VLAN ID : 200  
Name : VLAN200  
Status : Static

<table>
<thead>
<tr>
<th>Port Information Mode</th>
<th>Unknown VLAN Status</th>
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<tbody>
<tr>
<td>B1</td>
<td>Tagged Learn</td>
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<tr>
<td>C1</td>
<td>Untagged Learn</td>
</tr>
<tr>
<td>C2</td>
<td>Untagged Learn</td>
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<td>C3</td>
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<td>Untagged Learn</td>
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<td>C8</td>
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