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:

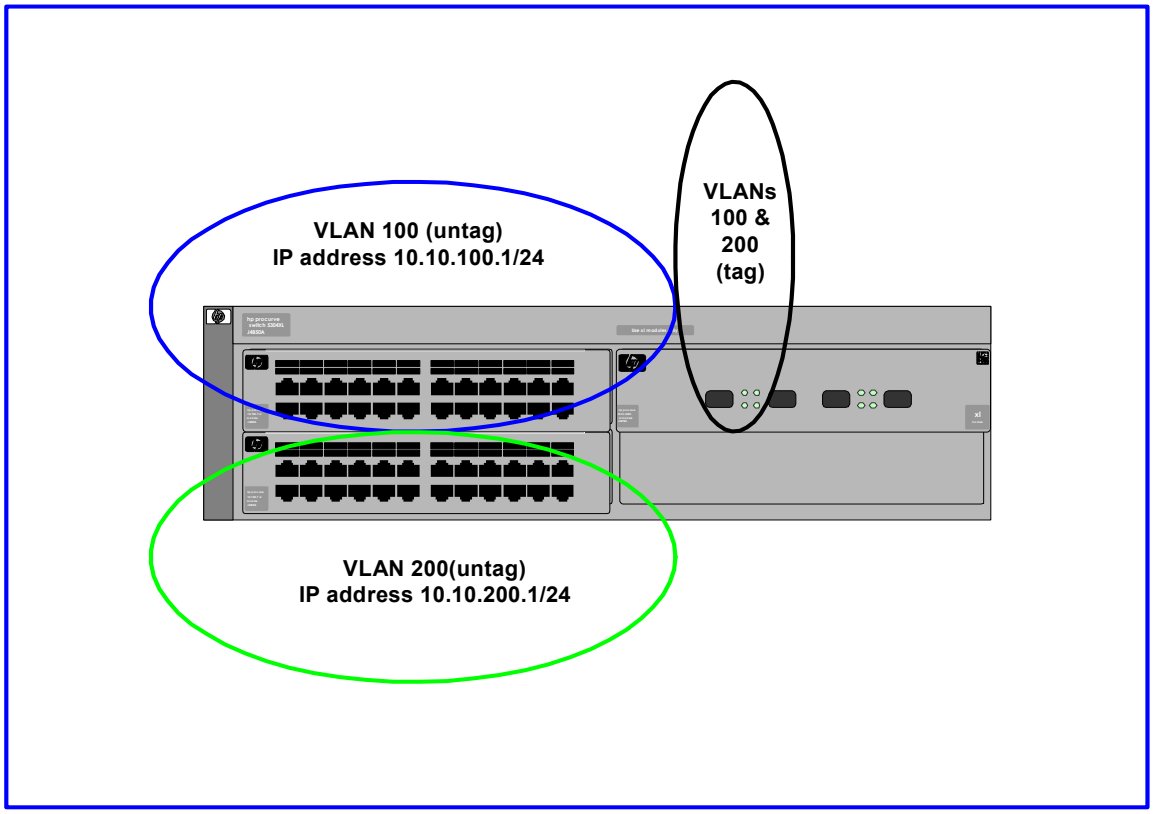
- clients on the network are directly-connected to 10/100 ports
- the 10/100 ports are divided into two VLANs
- client NICs are not 802.1Q-aware, so they must send and receive untagged packets
- one Gigabit port is configured to carry traffic from both VLANs to a connected device
- IP traffic is routed 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:

Port(s)	VLAN(s)	tag or untag
A1 to A24	100	untag
C1 to C24	200	untag
B1	100 and 200	tag

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
```

```
  A5              Untagged Learn        Down
  A6              Untagged Learn        Down
  A7              Untagged Learn        Down
  A8              Untagged Learn        Down
  A9              Untagged Learn        Down
  A10             Untagged Learn        Down
  A11             Untagged Learn        Down
  A12             Untagged Learn        Down
  A13             Untagged Learn        Down
  A14             Untagged Learn        Down
  A15             Untagged Learn        Down
  A16             Untagged Learn        Down
  A17             Untagged Learn        Down
  A18             Untagged Learn        Down
  A19             Untagged Learn        Down
  A20             Untagged Learn        Down
  A21             Untagged Learn        Down
  A22             Untagged Learn        Down
  A23             Untagged Learn        Down
  A24             Untagged Learn        Down
  B1              Tagged   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

  Port Information Mode     Unknown VLAN Status
  ---------------- -------- ------------ ----------
  B1               Tagged   Learn        Down
  C1               Untagged Learn        Down
  C2               Untagged Learn        Down
  C3               Untagged Learn        Down
  C4               Untagged Learn        Down
  C5               Untagged Learn        Down
  C6               Untagged Learn        Down
  C7               Untagged Learn        Down
  C8               Untagged Learn        Down
```

C9	Untagged Learn	Down
C10	Untagged Learn	Down
C11	Untagged Learn	Down
C12	Untagged Learn	Down
C13	Untagged Learn	Down
C14	Untagged Learn	Down
C15	Untagged Learn	Down
C16	Untagged Learn	Down
C17	Untagged Learn	Down
C18	Untagged Learn	Down
C19	Untagged Learn	Down
C20	Untagged Learn	Down
C21	Untagged Learn	Down
C22	Untagged Learn	Down
C23	Untagged Learn	Down
C24	Untagged Learn	Down