

IP Routing Between Port-Based VLANs

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

Here are specific design parameters for this example:

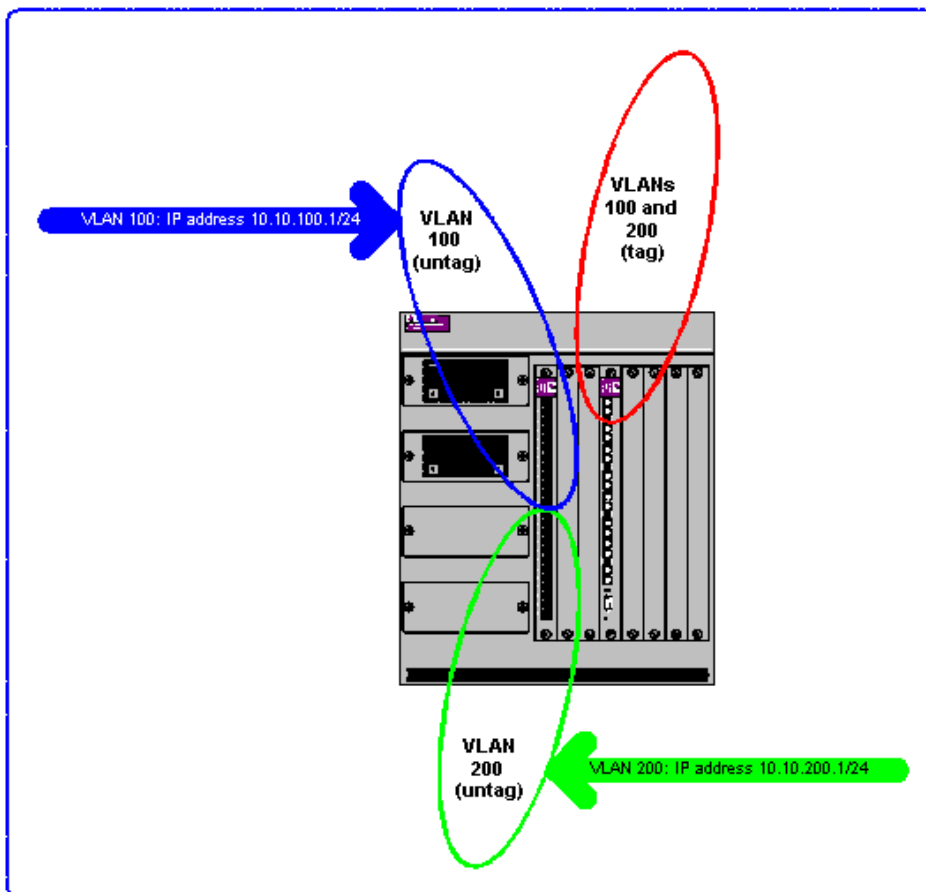
- clients on the network are directly-connected to 10/100 ports
- the 10/100 ports are divided into two VLANs
- client NICs are not 802.1Q-aware, so they must send and receive untagged packets
- one Gigabit port is configured to carry traffic from both VLANs to a connected device
- IP traffic is routed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

<u>Port(s)</u>	<u>VLAN(s)</u>	<u>tag or untag</u>
e1/1 to 1/12	100	untag
e1/13 to 1/24	200	untag
e4/1	100 and 200	tag

Each VLAN has an IP address assigned to its "virtual ethernet" (VE) interface:

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 Routing Switch. We recommend saving your current configuration if necessary. To reset a Routing Switch to a factory default configuration use the following commands:

```
HP9304> enable
HP9304# erase startup-config
HP9304# reload
```

NOTES:

1. The interface port numbers (e.g. interface e 1/1) and the IP address (e.g. 10.10.10.1) may differ in your network, so adjust these values accordingly. The Routing Switch model (e.g. HP 9304M), type of module(s), and software version number below may not accurately reflect the device(s) you are configuring.
2. Some older versions of Routing Switch software do not include the version in the output of the **show configuration** command. For those versions, use the **show version** command to see the software version.
3. The configuration example below was created on software version 05.2.16.

CONFIGURATION COMMANDS: (created on software version 05.2.16):

```
HP9308>enable
No password has been assigned yet...
HP9308#config term
HP9308(config)#hostname PortBasedVLANs
PortBasedVLANs(config)#router rip

PortBasedVLANs(config-rip-router)#vlan 100 name VLAN100 by port
PortBasedVLANs(config-vlan-100)#untag e1/1 to 1/12
  added untagged port ethe 1/1 to 1/12 to port-vlan 100.
PortBasedVLANs(config-vlan-100)#tag e4/1
  added tagged port ethe 4/1 to port-vlan 100.
PortBasedVLANs(config-vlan-100)#router-interface ve1
PortBasedVLANs(config-vlan-100)#int ve1
PortBasedVLANs(config-vif-1)#ip address 10.10.100.1/24
PortBasedVLANs(config-vif-1)#ip rip v1-only

PortBasedVLANs(config-vif-1)#vlan 200 name VLAN200 by port
PortBasedVLANs(config-vlan-200)#untag e1/13 to 1/24
  added untagged port ethe 1/13 to 1/24 to port-vlan 200.
PortBasedVLANs(config-vlan-200)#tag e4/1
  added tagged port ethe 4/1 to port-vlan 200.
PortBasedVLANs(config-vlan-200)#router-interface ve2
PortBasedVLANs(config-vlan-200)#int ve2
PortBasedVLANs(config-vif-2)#ip address 10.10.200.1/24
PortBasedVLANs(config-vif-2)#ip rip v1-only
PortBasedVLANs(config-vif-2)#end
PortBasedVLANs#write mem
PortBasedVLANs#.Write startup-config in progress.
.Write startup-config done.
```

RESULTING CONFIGURATION:

```
PortBasedVLANs#show config
Startup configuration:
!
ver 05.2.16T43
module 1 24-port-copper-module
module 2 8-port-gig-management-module
!
global-protocol-vlan
!
!
vlan 1 name DEFAULT-VLAN by port
!
vlan 100 name VLAN100 by port
  tagged ethe 4/1
  untagged ethe 1/1 to 1/12
  router-interface ve 1
!
vlan 200 name VLAN200 by port
  tagged ethe 4/1
  untagged ethe 1/13 to 1/24
  router-interface ve 2
!
hostname PortBasedVLANs
!
interface ve 1
  ip address 10.10.100.1 255.255.255.0
  ip rip v1-only
!
interface ve 2
  ip address 10.10.200.1 255.255.255.0
  ip rip v1-only
!
!
router rip
!
end

PortBasedVLANs#
```

ADDITIONAL INFORMATION:

1. The act of configuring a VLAN on a Routing Switch results in an extra line in the config: a "DEFAULT-VLAN" with VLAN ID (VID) = 1. All ports on the Routing Switch are members of the "DEFAULT-VLAN" - until ports are configured as members of another VLAN (in which case they are automatically removed from the "DEFAULT-VLAN").
2. The "DEFAULT-VLAN" cannot be deleted, and it cannot be renamed.
3. For those reasons, it is recommended to not use the "DEFAULT-VLAN". Instead, create additional VLANs using a convenient naming/numbering sequence for your network.
4. By default, there can be a maximum of 8 port-based VLANs. If needed, the maximum number of port-based VLANs can be increased, up to a value of 1024. An example command to increase the maximum number of port-based VLANs to 30 is:

```
HP9308# system-max vlan 30
```