

JetBox HOW TO

How to set up VLAN in the JetBox through Linux
command and Webmin UI

1. Create/modify VLAN interface

Linux command line: vconfig

```
Usage: vconfig COMMAND [OPTIONS]...

Create and remove virtual ethernet devices

Options:
  add          [interface-name] [vlan_id] tag [port_id] untag [port_id]
              [example : vconfig add lan 2 tag 1,2,3 untag 4]
  rem          [vlan-name]
  show        [Display Vlan Table]
  set_flag    [interface-name] [flag-num] [0 | 1]
  set_egress_map [vlan-name] [skb_priority] [vlan_qos]
  set_ingress_map [vlan-name] [skb_priority] [vlan_qos]
  set_name_type [name-type]
```

Example:

[vconfig add lan 2 untag 1](#)

[vconfig add lan 3 untag 2](#)

[vconfig add lan 4 untag 3](#)

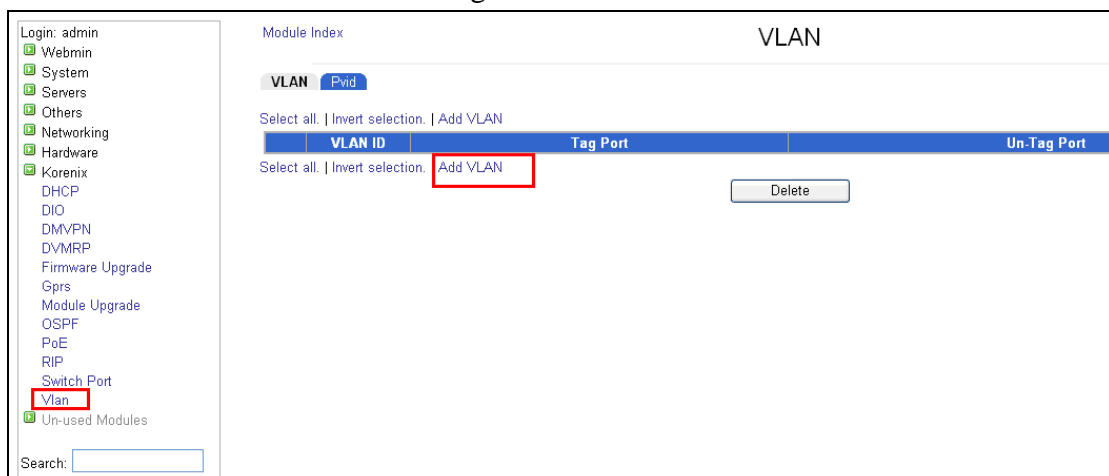
[vconfig add lan 5 untag 4](#)

Explain

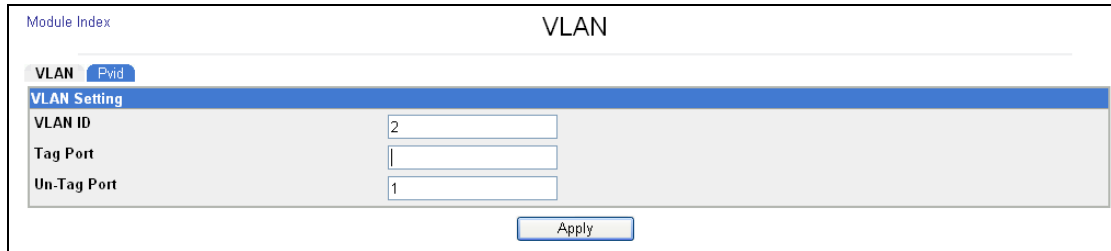
1. [add lan 2](#): Create VLAN 2 on lan
2. [untag 1](#): Configure port 1 as untag port in vlan 2

webmin:

1. Select Korenix->VLAN to configure VLAN



- Click Add VLAN to create VLAN interface. Then fill the VLAN ID and port rule.



Module Index VLAN

VLAN Pvid

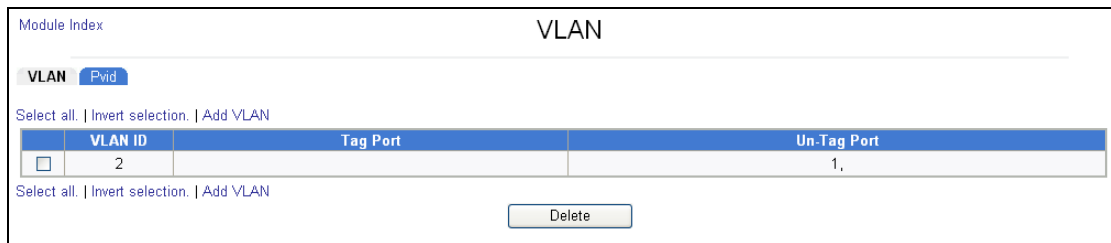
VLAN Setting

VLAN ID

Tag Port

Un-Tag Port

- Click **Apply** to make the configuration take effect. After VLAN is created, a vlan interface named lan.VlanID would be automatically created. In this example, an interface named lan.2 would be created.



Module Index VLAN

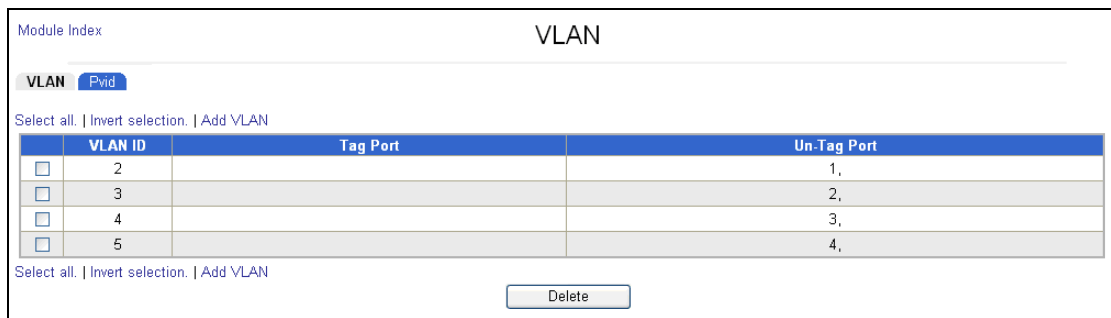
VLAN Pvid

Select all. | Invert selection. | Add VLAN

| | VLAN ID | Tag Port | Un-Tag Port |
|--------------------------|---------|----------|-------------|
| <input type="checkbox"/> | 2 | | 1, |

Select all. | Invert selection. | Add VLAN

- Repeat the steps above to create multiple VLAN interfaces.



Module Index VLAN

VLAN Pvid

Select all. | Invert selection. | Add VLAN

| | VLAN ID | Tag Port | Un-Tag Port |
|--------------------------|---------|----------|-------------|
| <input type="checkbox"/> | 2 | | 1, |
| <input type="checkbox"/> | 3 | | 2, |
| <input type="checkbox"/> | 4 | | 3, |
| <input type="checkbox"/> | 5 | | 4, |

Select all. | Invert selection. | Add VLAN

Note:

If devices connected to JetBox don't support VLAN, the ports should be configured as untagged port.

2. Assign IP address for specific vlan interface.

Linux command line: ifconfig

```
Usage: ifconfig [-a] interface [address]

Configure a network interface

Options:
  [add ADDRESS[/PREFIXLEN]]
  [del ADDRESS[/PREFIXLEN]]
  [[-]broadcast [ADDRESS]] [[-]pointopoint [ADDRESS]]
  [netmask ADDRESS] [dstaddr ADDRESS]
  [outfill NN] [keepalive NN]
  [hw etherlinfiniband ADDRESS] [metric NN] [mtu NN]
  [[-]trailers] [[-]arp] [[-]allmulti]
  [multicast] [[-]promisc] [txqueuelen NN] [[-]dynamic]
  [mem_start NN] [io_addr NN] [irq NN]
  [up|down] ...
```

Example:

[ifconfig lan.2 10.0.10.1 netmask 255.255.255.0](#)

[ifconfig lan.3 10.0.11.1 netmask 255.255.255.0](#)

[ifconfig lan.4 10.0.12.1 netmask 255.255.255.0](#)

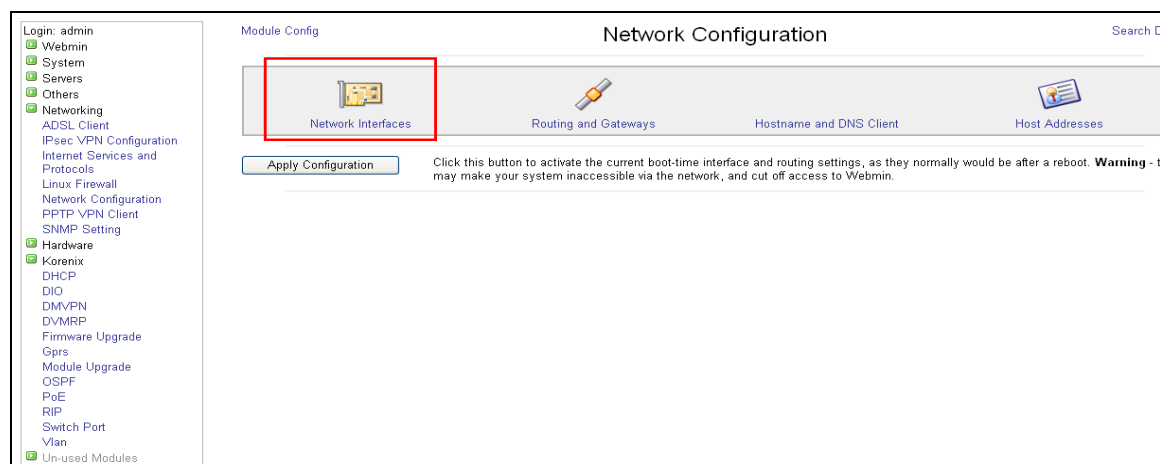
[ifconfig lan.5 10.0.13.1 netmask 255.255.255.0](#)

Explain

1. lan.2 : Target interface will be configured, here is interface vlan 2
2. 10.0.10.1: IP address which would be assigned to this interface.
3. netmask 255.255.255.0: Configure netmask manually, here is configure netmask as 255.255.255.0

webmin

1. Select Networking-> networking interface



- Click on the label **Interface Activated at Boot Time** to make the configuration remain after power cycle. And click on **Add a new interface** to enable the interface created by vconfig.

Module Index Network Interfaces

Interfaces Active Now Interfaces Activated at Boot Time

Interfaces listed in this table will be activated when the system boots up, and will generally be active now too.

Select all. | Invert selection. | Add a new interface. | Add a new bonding Interface. | Add Vlan Tagged Interface

| Name | Type | IP Address | Netmask | Activate at boot? |
|------------------------------|----------|---------------|---------------|-------------------|
| <input type="checkbox"/> lan | Ethernet | 192.168.12.10 | 255.255.255.0 | Yes |
| <input type="checkbox"/> lo | Loopback | Automatic | Automatic | Yes |
| <input type="checkbox"/> wan | Ethernet | 10.0.0.95 | 255.0.0.0 | Yes |

Select all. | Invert selection. | Add a new interface. | Add a new bonding Interface. | Add Vlan Tagged Interface

[Return to network configuration](#)

- The name would be lan.VlanID, in this example it would be lan.2. Fill the IP address, netmask, and broadcast address and click **Create and Apply** to make configuration take effect.

Module Index Create a VLAN tagged interface

Boot Time Interface Parameters

Name: IP Address: From DHCP From BOOTP Static

Netmask: Broadcast:

MTU: Automatic Activate at boot?: Yes No

[Return to network interfaces](#)

- Repeat steps above to create multiple VLAN interfaces.

Module Index Network Interfaces

Interfaces Active Now Interfaces Activated at Boot Time

Interfaces listed in this table will be activated when the system boots up, and will generally be active now too.

Select all. | Invert selection. | Add a new interface. | Add a new bonding Interface. | Add Vlan Tagged Interface

| Name | Type | IP Address | Netmask | Activate at boot? |
|--------------------------------|---------------|---------------|---------------|-------------------|
| <input type="checkbox"/> lan | Ethernet | 192.168.12.10 | 255.255.255.0 | Yes |
| <input type="checkbox"/> lan.2 | Ethernet VLAN | 10.0.10.1 | 255.255.255.0 | Yes |
| <input type="checkbox"/> lan.3 | Ethernet VLAN | 10.0.11.1 | 255.255.255.0 | Yes |
| <input type="checkbox"/> lan.4 | Ethernet VLAN | 10.0.12.1 | 255.255.255.0 | Yes |
| <input type="checkbox"/> lan.5 | Ethernet VLAN | 10.0.13.1 | 255.255.255.0 | Yes |
| <input type="checkbox"/> lo | Loopback | Automatic | Automatic | Yes |
| <input type="checkbox"/> wan | Ethernet | 10.0.0.95 | 255.0.0.0 | Yes |

Select all. | Invert selection. | Add a new interface. | Add a new bonding Interface. | Add Vlan Tagged Interface

Note:

Please do not configure multiple interfaces in the same subnet in a single computer.

3. Configure PVID to allow devices connected via specific port communicate with the VLAN interface.

Linux command line: ethtool

```
ethtool version 6
Usage:
  ethtool DEVNAME          (get port status)
  ethtool -a DEVNAME       (get flow control)
  ethtool -A DEVNAME       (set flow control)
  [ rx onloff ] \
  ethtool -q DEVNAME       (get QoS)
  ethtool -Q DEVNAME       (set QoS)
  [ type 011 ] (0: weighted, 1: Strict)
  [ trust 0-4 ] (0:Port Based, 1:CoS Only, 2:DSCP Only, 3:CoS Firs
  [ pri 0-7 ] (Port default frame priority)
  [ cos QUEUE_ID COS_ID ]
  [ dscp QUEUE_ID DSCP_ID ]
  ethtool -p DEVNAME       (get vlan pvid)
  ethtool -P DEVNAME       (set vlan pvid)
  [ pvid N ]
  ethtool -t DEVNAME       (reset statistic)
  ethtool -s DEVNAME       (set port status)\
  [ speed 10|100 ]\
  [ duplex half|full ] \
  [ port onloff ] - Enable or Disable this port\
  [ autoneg onloff ] \
  ethtool -S DEVNAME       (get statistic)
#
```

Example:

[ethtool -P lan:1 pvid 2](#)

[ethtool -P lan:2 pvid 3](#)

[ethtool -P lan:3 pvid 4](#)

[ethtool -P lan:4 pvid 5](#)

Explain

1. -P: Set pvid
2. lan:1: Configure port 1's Pvid.
3. pvid 2: Set pvid 2 to this port.

webmin

1. Select Korenix->VLAN to configure VLAN. Then click on the Pvid label to configure Pvid.

Module Index

VLAN

Select all. | Invert selection. | Add VLAN

| VLAN ID | Tag Port | Un-Tag Port |
|---------|----------|-------------|
| | | |

Select all. | Invert selection. | Add VLAN

Delete

Search:

2. After configuring Pvid, click Apply to make configuration take effect.

Module Index

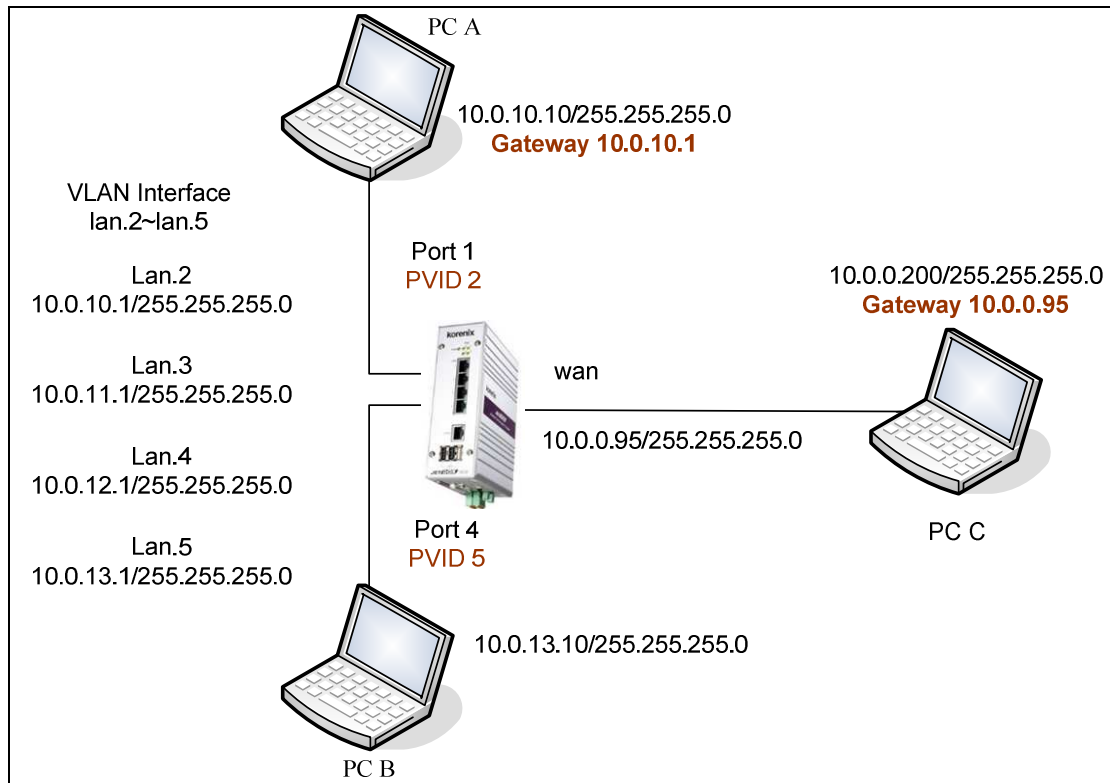
Pvid

| Port | Pvid |
|------|--------------------------------|
| 1 | <input type="text" value="2"/> |
| 2 | <input type="text" value="3"/> |
| 3 | <input type="text" value="4"/> |
| 4 | <input type="text" value="5"/> |

Apply

4. Inter-Vlan-Route

Topology



Explain and Result:

Pc A connect to lan port 1 which is member of VLAN 2 and its PVID is 2

Pc B connect to lan port 4 which is member of VLAN 5 and its PVID is 5

Pc C connect to wan port

Network of pc A is 10.0.10.10/255.255.255.0, the same subnet with VLAN 2. The gateway is point to IP address of VLAN 2.

Network of pc B is 10.0.13.10/255.255.255.0, the same subnet with VLAN 5. But no gateway is configured.

Network of pc C is 10.0.0.200/255.255.255.0, the same subnet with WAN. And gateway is set to IP address of WAN.

With inter-vlan-route, pc A can communicate with all vlan interfaces and pc C. Pc B can only communicate with VLAN inter 5(lan.5) because gateway is not configured. Pc C can communicate with all VLAN interfaces and pc A.