

Access switch not configured with VLAN IP

Article Overview

An access switch without a VLAN IP cannot route or communicate within that VLAN; configuring a Switch Virtual Interface (SVI) with an IP address is required for Layer 3 connectivity.

Understanding the Issue

When a VLAN on a switch does not have an IP address assigned, devices in that VLAN cannot communicate beyond the local broadcast domain, and DHCP requests may fail if the switch is expected to route traffic to a DHCP server. This is common on Layer 2 switches where VLANs exist but no SVI is configured.

Configuring a VLAN IP

To assign an IP to a VLAN on a Cisco switch:

- o Enter global configuration mode:

```
Switch> enableSwitch# configure terminal o Create or select the VLAN interface:
```

```
Switch(config)# interface vlan 10 o Assign an IP address and subnet mask:
```

```
Switch(config-if)# ip address 192.168.10.1 255.255.255.0 o Enable the interface:
```

```
Switch(config-if)# no shutdown o Verify the configuration:
```

```
Switch# show ip interface brief
```

This ensures the VLAN interface is active and reachable .

Common Troubleshooting Steps

- o Check VLAN existence: Ensure the VLAN is created on the switch and ports are assigned correctly using `show vlan brief` .

- o Switchport mode: Access ports must be set to the correct VLAN:

```
Switch(config)# interface gig1/0/1Switch(config-if)# switchport mode accessSwitch(config-if)# switchport access vlan 10
```

- o DHCP relay: If the DHCP server is on a different VLAN, configure `ip helper-address` on the VLAN interface to forward DHCP requests .

- o Trunk ports: Ensure trunk ports allow the VLAN if connecting to other switches or routers:

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```
Switch(config)# interface gig1/0/24
Switch(config-if)# switchport mode trunk
Switch(config-if)# switchport trunk allowed vlan 10
```

o Connectivity testing: Ping the VLAN IP from a host in the same VLAN to confirm reachability and check the MAC address table with `show mac address-table vlan 10`.

Additional Considerations

- o On Layer 2 switches, the VLAN IP is only for management or routing via a router-on-a-stick setup; it does not provide Layer 3 routing by itself.
- o Ensure no IP conflicts exist and that the subnet mask matches the network design.
- o For multi-vendor environments (e.g., TP-Link or Omada), verify that VLAN tagging and PVID settings match the router or DHCP server configuration. By properly configuring the VLAN interface with an IP and ensuring correct port assignments, the access switch will support inter-VLAN communication and DHCP functionality.

If you plan to configure many VLANs on the device and to not enable routing, you can set the Switch Database

This tutorial explains VLAN configuration commands. Learn how to configure, test, and verify VLANs on Cisco switches.

The routers do not support VLAN tagging or subinterfaces. Its LAN IP is 192.168.1.1 (assigned manually) and is

I have set up a trunk that carries all traffic from all VLANs between my switches and set up a router with subinterfaces

This ensures that packets for both data types are isolated from each other, maximizing the utilization of the switch.

A port configured in this mode is known as an access port. Trunk - The interface is an untagged member of at most

This article introduces how to configure management VLAN on TP-Link smart and managed switches.

This article provides instructions on how to configure VLAN interface IPv4 address on the

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Dear All, We have cisco 3550 switch i have configured 3 vlans in this switch vlans are not able to accessing internet

I have got a bit of a strange issue when I am trying to add another vlan to one of our 6500 switches on another floor to

Learn how to assign IP addresses to VLANs on a Cisco switch to enable inter-VLAN communication and improve

If you plan to configure many VLANs on the device and to not enable routing, you can set the Switch Database Management (SDM)

The access port is normally assigned to the native VLAN of the access point, which is not necessarily VLAN 1, which

Introduction VLAN stands for Virtual Local Area Network one physical cisco switch; you can create multiple VLANs

Hello Experts, I have noticed that interface VLAN doesn't come up till the time I configure one of the switch port as

This article provides instructions on how to configure an interface VLAN as an access or trunk port on your switch

Web: <https://www.in-au.co.za>

