

VLAN Configuration

Quick Guide

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Wildix Megabit VLAN Switch - Scenario 1

Introduction

The network configuration requires the separation of voice and data networks. The protocol IEEE 802.1Q makes it possible to use the same switch but maintain two layers separately for the packets transition. The mixed configuration of Tagged and Untagged requires specific configuration of phones and Wildix PoE Switches.

The ports dedicated to connecting the phones should allow the transition of tagged packets for both Voice and Data VLAN, while the ports dedicated to PC connection and WMS should transit only the packets of the specified VLAN that result untagged at the output of the switch, without having to program VLAN on PC, printers, NAS, and each device connected to the network.

Network configuration

- 100 Voice VLAN (192.168.100.0/24)
- 200 Data VLAN (192.168.200.0/24)

Switch ports

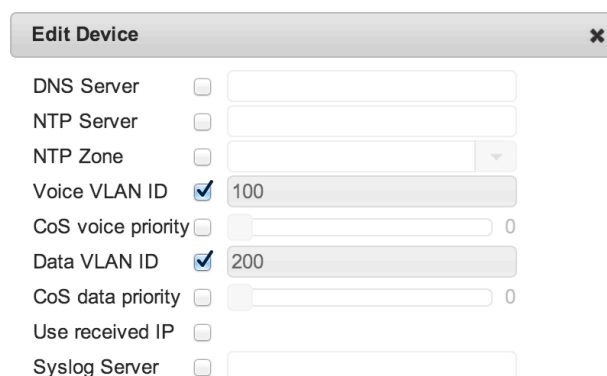
- 1: WMS
- 2-6: Data networks
- 7-8: Voice networks

IP addresses

- WMS: 192.168.100.199 Untagged
- Tel1: 192.168.100.101 VLAN 100
- Tel2: 192.168.100.102 VLAN 100
- PC1: 192.168.200.100 VLAN 200
- PC2: 192.168.200.101 VLAN 200

Phones configuration in the WMS

Configure the phone ports: check the box "Voice VLAN ID" and enter the value "100" into the field, check "Data VLAN ID" and enter the value "200" into the field.



The screenshot shows a configuration window titled "Edit Device" with a close button (X). The window contains several configuration options, each with a checkbox and a corresponding input field:

- DNS Server: [Empty field]
- NTP Server: [Empty field]
- NTP Zone: [Dropdown menu]
- Voice VLAN ID: 100
- CoS voice priority: [Slider set to 0]
- Data VLAN ID: 200
- CoS data priority: [Slider set to 0]
- Use received IP:
- Syslog Server: [Empty field]

Switch configuration

Select the mode "Tag Based VLAN" in the menu VLAN Setting > VLAN mode and select "Remove Tag" option for the ports 1-6, and the option "Add Tag" for the ports 7-8.

VLAN Mode	Tag Based VLAN Change VLAN mode			
Outgoing packets	Port 01 <input type="radio"/> Add Tag <input type="radio"/> Forward <input checked="" type="radio"/> Remove Tag	Port 02 <input type="radio"/> Add Tag <input type="radio"/> Forward <input checked="" type="radio"/> Remove Tag	Port 03 <input type="radio"/> Add Tag <input type="radio"/> Forward <input checked="" type="radio"/> Remove Tag	Port 04 <input type="radio"/> Add Tag <input type="radio"/> Forward <input checked="" type="radio"/> Remove Tag
	Port 05 <input type="radio"/> Add Tag <input type="radio"/> Forward <input checked="" type="radio"/> Remove Tag	Port 06 <input type="radio"/> Add Tag <input type="radio"/> Forward <input checked="" type="radio"/> Remove Tag	Port 07 <input checked="" type="radio"/> Add Tag <input type="radio"/> Forward <input type="radio"/> Remove Tag	Port 08 <input checked="" type="radio"/> Add Tag <input type="radio"/> Forward <input type="radio"/> Remove Tag

The switch is configured to remove all VLAN tags from outgoing packets on ports 1-6, so that the WMS and the connected PCs can receive them. The tag is added for the ports 7-8, since the network interfaces of the phone require the VLAN tag.

Add VLAN 100 and 200 to the switch configuration in the menu VLAN Setting > VLAN Member and configure the ports as shown on the screenshot.

PVID Table								
Port	01	02	03	04	05	06	07	08
VID	100	200	200	200	200	200	---	---

VLAN Member Table								
VID	Port							
	1	2	3	4	5	6	7	8
100	v	-	-	-	-	-	v	v
200	-	v	v	v	v	v	v	v

The switch is configured with ports 1, 7, 8 belonging to the VLAN 100 and the ports 2-8 belonging to VLAN 200. Tagged packets will only pass through these ports.

Port 1 is also set up with PVID (Port VLAN Identifier) 100, which combined with the previous configuration assigns the incoming packets to VLAN 100 and adds the tag where necessary (ports 7 and 8).

Ports 2-6 are set up with PVID (Port VLAN Identifier) 200, which combined with the previous configuration assigns the incoming packets to VLAN 200 and adds the tag where necessary (ports 7 and 8).

Conclusion

After the configuration is over, the switch will allow the transition of the packets tagged for both Voice and Data VLAN and will:

add VLAN 100 (Voice) tag for all the incoming packets on the port 1

add VLAN 200 (Data) tag for all the incoming packets on the ports 2-6

remove VLAN (Voice or Data) tag for all the outgoing packets on the ports 1-6

maintain the correct VLAN tag for the outgoing packets on the ports 7 and 8

The PCs connected to the secondary data port of the phones will belong to VLAN 200 (Data)

Wildix Megabit VLAN Switch - Scenario 2

Introduction

The network configuration requires the separation of voice and data networks. The protocol IEEE 802.1Q makes it possible to use the same switch but maintain two layers separately for the packets transition. The configuration is completely untagged and dedicates each port to a different service.

Network configuration

Voice VLAN (192.168.100.0/24)

Data VLAN (192.168.200.0/24)

Switch ports

1-4: Voice network

5-8: Data network

Switch configuration

Select the mode "Port based VLAN" in the menu VLAN Setting > VLAN mode and define which ports should join the group for each selected port. You should receive the following result:

VLAN MEMBER								
Port	1	2	3	4	5	6	7	8
1	v	v	v	v	-	-	-	-
2	v	v	v	v	-	-	-	-
3	v	v	v	v	-	-	-	-
4	v	v	v	v	-	-	-	-
5	-	-	-	-	v	v	v	v
6	-	-	-	-	v	v	v	v
7	-	-	-	-	v	v	v	v
8	-	-	-	-	v	v	v	v
Port	1	2	3	4	5	6	7	8
VLAN MEMBER								

The switch is configured with two separate areas. The ports that can communicate are marked in the intersections of the table with "V" sign, while the ports that cannot communicate are marked with "-".

Conclusion

After the configuration is over, the switch will allow the communication between the devices belonging to the same group without the need to set up any kind of VLAN configuration on devices.

Wildix Gigabit VLAN Switch - Scenario 1

Introduction

The network configuration requires the separation of voice and data networks. The protocol IEEE 802.1Q makes it possible to use the same switch but maintain two layers separately for the packets transition. The mixed configuration of Tagged and Untagged requires specific configuration of phones and Wildix PoE Switches.

The ports dedicated to connecting the phones should allow the transition of tagged packets for both Voice and Data VLAN, while the ports dedicated to PC connection and WMS should transit only the packets of the specified VLAN that result untagged at the output of the switch, without having to program VLAN on PC, printers, NAS, and each device connected to the network.

Network configuration

- 100 Voice VLAN (192.168.100.0/24)
- 200 Data VLAN (192.168.200.0/24)

Switch ports

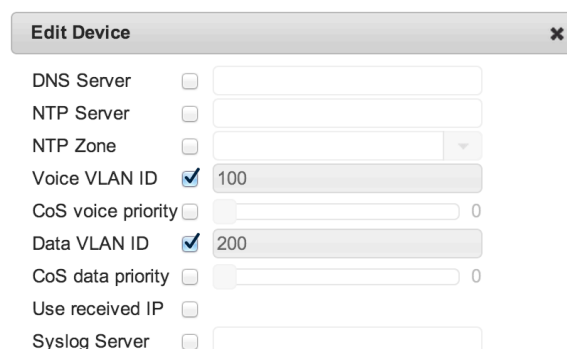
- 1: WMS
- 2-6: Data networks
- 7-8: Voice networks

IP addresses

- WMS: 192.168.100.199 Untagged
- Tel1: 192.168.100.101 VLAN 100
- Tel2: 192.168.100.102 VLAN 100
- PC1: 192.168.200.100 VLAN 200
- PC2: 192.168.200.101 VLAN 200

Phones configuration in the WMS

Configure the phone ports: check the box "Voice VLAN ID" and enter the value "100" into the field, check "Data VLAN ID" and enter the value "200" into the field.



The screenshot shows a configuration window titled "Edit Device" with a close button (x). The window contains several settings:

DNS Server	<input type="checkbox"/>	<input type="text"/>
NTP Server	<input type="checkbox"/>	<input type="text"/>
NTP Zone	<input type="checkbox"/>	<input type="text"/>
Voice VLAN ID	<input checked="" type="checkbox"/>	100
CoS voice priority	<input type="checkbox"/>	0
Data VLAN ID	<input checked="" type="checkbox"/>	200
CoS data priority	<input type="checkbox"/>	0
Use received IP	<input type="checkbox"/>	
Syslog Server	<input type="checkbox"/>	<input type="text"/>

Switch configuration

Go to the menu VLAN Setting and add VLAN 100 and 200 that will be respectively used for Voice and Data network. Set up VLAN 100 and 200 as shown on the screenshot: enable the ports 1, 7 and 8 for VLAN 100 and the ports 2-8 for VLAN 200.

VLAN ID: 100				VLAN ID: 200			
Port	Member	Port	Member	Port	Member	Port	Member
Port 1	<input checked="" type="checkbox"/>	Port 5	<input type="checkbox"/>	Port 1	<input type="checkbox"/>	Port 5	<input checked="" type="checkbox"/>
Port 2	<input type="checkbox"/>	Port 6	<input type="checkbox"/>	Port 2	<input checked="" type="checkbox"/>	Port 6	<input checked="" type="checkbox"/>
Port 3	<input type="checkbox"/>	Port 7	<input checked="" type="checkbox"/>	Port 3	<input checked="" type="checkbox"/>	Port 7	<input checked="" type="checkbox"/>
Port 4	<input type="checkbox"/>	Port 8	<input checked="" type="checkbox"/>	Port 4	<input checked="" type="checkbox"/>	Port 8	<input checked="" type="checkbox"/>

This configuration assigns the switch ports to a specified VLAN

Go to the menu "port config" and enable "VLAN Aware" option for all the ports. This parameter allows the separation of two zones. Define the ports 7 and 8 (the ports to which the phones will be connected with PCs in cascade) as "Tagged Only" with PVID "none", as the PVID is already present in the received packets. The correct PVIDs should be assigned to other ports, as shown on the screenshot.

Port	VLAN aware Enabled	Ingress Filtering Enabled	Packet Type	Pvid
Port 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	100
Port 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	200
Port 3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	200
Port 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	200
Port 5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	200
Port 6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	200
Port 7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/> All <input checked="" type="radio"/> Tagged Only	None
Port 8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/> All <input checked="" type="radio"/> Tagged Only	None

The switch is configured with ports 1, 7, 8 belonging to the VLAN 100 and the ports 2-8 belonging to VLAN 200. Tagged packets will only pass through these ports.

Port 1 is also set up with PVID (Port VLAN Identifier) 100, which combined with the previous configuration assigns the incoming packets to VLAN 100 and adds the tag where necessary (ports 7 and 8).

Ports 2-6 are set up with PVID (Port VLAN Identifier) 200, which combined with the previous configuration assigns the incoming packets to VLAN 200 and adds the tag where necessary (ports 7 and 8).

Conclusion

After the configuration is over, the switch will allow the transition of the packets tagged for both Voice and Data VLAN and will:

add VLAN 100 (Voice) tag for all the incoming packets on the port 1

add VLAN 200 (Data) tag for all the incoming packets on the ports 2-6

remove VLAN (Voice or Data) tag for all the outgoing packets on the ports 1-6

maintain the correct VLAN tag for the outgoing packets on the ports 7 and 8

The PCs connected to the secondary data port of the phones will belong to VLAN 200 (Data)

Note

The native management VLAN of the switch is 1, thus by changing all the ports there is a risk to not being able to access the switch for the programming. It is recommended to keep one of the ports (e.g. 2) unchanged in order to set up VLAN 200 later on from the Administration page as a native one, and to configure port 2 from another port of the switch (dedicated to the PC).

Wildix Gigabit VLAN Switch - Scenario 2

Introduction

The network configuration requires the separation of voice and data networks. The protocol IEEE 802.1Q makes it possible to use the same switch but maintain two layers separately for the packets transition. The configuration is completely untagged and dedicates each port to a different service.

Network configuration

- Voice VLAN (192.168.100.0/24)
- Data VLAN (192.168.200.0/24)

Switch ports

- 1-4: Voice network
- 5-8: Data network

Switch configuration

Go to the menu VLAN Setting and add VLAN 2 that will be used for the Data network. Set up VLAN 1 and 2 as shown on the screenshot: ports 1-4 should belong to VLAN 1, ports 5-8 - to VLAN 2. From now on, the switch is accessible only on the ports 1-4, as the management VLAN is 1, except for different settings.

VLAN ID: 1			
Port	Member	Port	Member
Port 1	<input checked="" type="checkbox"/>	Port 5	<input type="checkbox"/>
Port 2	<input checked="" type="checkbox"/>	Port 6	<input type="checkbox"/>
Port 3	<input checked="" type="checkbox"/>	Port 7	<input type="checkbox"/>
Port 4	<input checked="" type="checkbox"/>	Port 8	<input type="checkbox"/>

VLAN ID: 2			
Port	Member	Port	Member
Port 1	<input type="checkbox"/>	Port 5	<input checked="" type="checkbox"/>
Port 2	<input type="checkbox"/>	Port 6	<input checked="" type="checkbox"/>
Port 3	<input type="checkbox"/>	Port 7	<input checked="" type="checkbox"/>
Port 4	<input type="checkbox"/>	Port 8	<input checked="" type="checkbox"/>

Go to the menu "port config" and enable "VLAN Aware" option for all the ports. This parameter allows the separation of two zones. Make sure that PVID of each port is defined correctly.

Port	VLAN aware Enabled	Ingress Filtering Enabled	Packet Type	Pvid
Port 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1
Port 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1
Port 3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1
Port 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1
Port 5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	2
Port 6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	2
Port 7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	2
Port 8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	2

Conclusion

After the configuration is over, the switch will allow the communication between the devices belonging to the same group without the need to set up any kind of VLAN configuration on devices.

Contacts



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