
Topic / Issue: Example 802.1Q VLAN Configuration- ESM-24TO2M / EF-24MO2G

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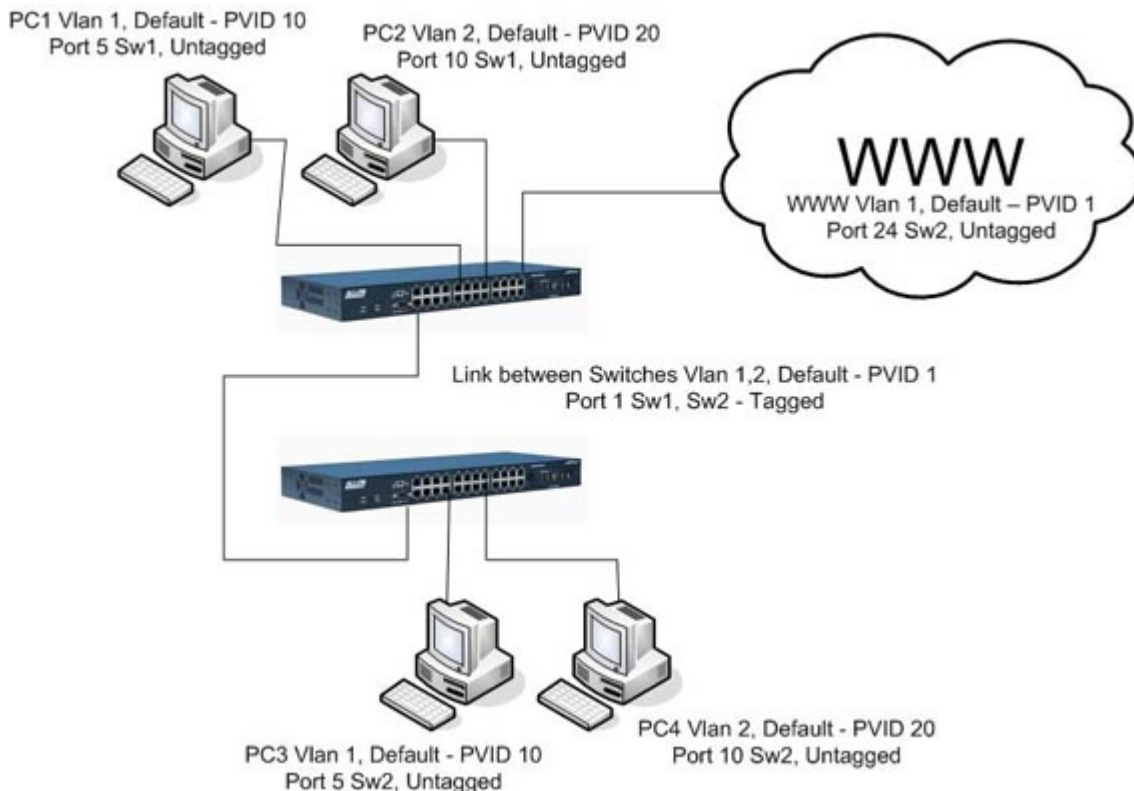
The following technical article shows you a typical 802.1Q VLAN scenario and solution

Scenario

- 1) Separate Student and Teacher Computers so that they can't communicate with each other.
- 2) Allow internet access to the Teachers only.

Solution

The quickest and easiest way to accomplish the above task is to create 2 VLAN's, one will consist of the students and the other will consist of the teachers. Because of the large number of students and teachers the 2 VLAN's are going to need to span across at least 2 switches. Therefore we can't use Port Based VLAN's because they can't be spanned across several switches, unlike 802.1Q VLAN's.



Default VLAN - PVID 1 VLAN 1 - PVID 10 VLAN 2 - PVID 20

Switch 1/Ports	Uplink Port to Switch (P1)	Students (P2 - 20)	Teachers (P21 - 23)	WWW (P24)
VLAN Group	Default, V1, V2	Default, V2	Default, V1	Default, V1
PVID	1	20	10	1
TAG/UNTAG	Tagged	Untagged	Untagged	Untagged

Switch 2/Ports	Uplink Port to Switch (P1)	Students (P2 - 17)	Teachers (P18 - 23)
VLAN Group	Default, V1, V2	Default, V2	Default, V1
PVID	1	20	10
TAG/UNTAG	Tagged	Untagged	Untagged

If you have a port(s) which resides in multiple VLAN groups please ensure that the TAG or UNTAGGED option does not conflict across VLAN's.

VLAN Forwarding Process

When ping web address from PC3

PC3 -> UNTAG -> SW2 Port 5 (VID 10) Assigned
-> SW2 Port 1 (VID 10) Passed
-> SW1 Port 1 (VID 10) Passed
-> SW1 Port 24 (VID 10) Passed
-> UNTAG -> Website
-> Response from Website
-> SW1 Port 24 (VID 1) Assigned
-> SW1 Port 1 (VID 1) Passed
-> SW2 Port 1 (VID 1) Passed
-> SW2 Port 5 (VID 1) Passed
-> UNTAG -> PC3 -> Access OK!

When ping web address from PC4

PC4 -> UNTAG -> SW2 Port 10 (VID 20) Assigned
-> SW2 Port 1 (VID 20) Passed
-> SW1 Port 1 (VID 20) Passed
-> SW1 Port 24 (No VID of 20) Dropped not a member
-> Access Denied!

Summary:
(If required)