SLANPRO

123 Manual for the creation of VLAN Networks in the LP-SGW2404F and LP-SGW2404FP Managed Switches

LPSGW2404FX_M123_ENC01W



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We know that switches are devices that let equipment or devices interconnections between the physical ports available. The ports are numbered from 1 to n, where n is the Switch port number; in these cases, all the equipment that are connected in any one of the ports can communicate between them.

We will now define two large families of switches:

First the Non-Manageable, which are those that have a default VLAN or Network, which groups those ports and let any devices connected to any of those ports. (There is no way to define any parameters).

Second, the Manageable ones, which are those with embedded software that can be accessed and managed. In these Switches, we can define the functionalities they can manage; this differs between manufacturers and the management levels available in them. These types can be characterized in layers, and they are defined in the standards used in the OSI model. If you wish to investigate this theme in a deeper way, please check with your switch manual and with the information available on the OSI model.

We will now give you a short introduction on what a VLAN is:

A VLAN is nothing more than the creation of a virtual Switch inside the physical switch, it is as we had another switch.

Another important characteristic is that we can create these VLAN's and give them special properties; this of course depends on the Switch and Layer where it belongs or can manage, beside this, we can assign one or more ports from a VLAN, which can be very useful when the equipment or device needs to be accessed from one or more virtual Switches or VLAN's: e.g.: when a Server serves different networks.

It is always important to be able to separate certain communications between equipment or devices, and to give them different characteristics. We use VLANs with this purpose in mind.



Important Note:

a port can belong to more than one virtual switch. The VLANs can be configured in a complex or simple way based on the needs or requisites for each one of them, in our Switches, the **LP-SGW2404F and LP-SGW2404FP** you can configure as many VLAN's as the local memory permits, depending on their complexity (Please see the specifications).

Once this brief VLAN definition has been given, lets proceed to set up a simple example of how to configure it, the main purpose of this 123 Manual. For more complex setups, we recommend you to read the document: *LPSGW2404F_UG_ENB01W and LPSGW2404FP_UG_ENB01W*.

Note: these switches have (1) VLAN by Default, which cannot be modified because it is the basement of the switch's functionality, this means that if the equipment is automatically connected, it will behave like a Non-Manageable Switch.

We must also need to know that a VLAN must be associated to the possibility of accessing the Switch management, by default, this will be the VLAN 1.

In this example we will create 3 VLAN's which will be able to communicate through a port in which a central equipment will be located, which shall be able to manage the switch. Remember that the VLAN 1 comes defined by default and cannot be modified.

VLAN Default VLAN (Only for equipment administration).

VLAN 1-2 Zone A equipment (2 to 20 ports).

VLAN 1-3 Zone B equipment (21 to 23 ports).



Go to the Network card properties, as shown in **Figure 1**.



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Select protocol **TCP/IP** and select again **Properties** as shown in **Figure 2**.

local Area Connection Properties	
eneral Advanced	
Connect using:	
Intel(R) 82567LM Gigabit Network Co	Configure
This connection uses the following items:	
Realtek EAPPkt Protocol	
AEGIS Protocol (IEEE 802.1x) v3.7.5 AEGIS Protocol (IEEE 802.1x) v3.7.5	5.0
1	>
Instal Uninstal	Properties
Description	
Transmission Control Protocol/Internet Prot wide area network protocol that provides or across diverse interconnected networks.	ocol. The default ommunication
Show icon in notification area when conne	ected
Notify me when this connection has limited	d or no connectivity
	. 1 .
_	E Casta

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Input on your network card an IP address that is on the same segment of your Access Point (AP), this must support VLAN management, (in this case LanPro recommends our Access Point model LP-1540ai). By default, the switches **LP-SGW2404F and LP-SGW2404FP**, have assigned the IP address 192.168.0.1, for this reason, in this example we will input the IP address 192.168.0.2 for the network card (See **Figure 3**), remember that IP addresses must be unique and cannot be repeated in a data network; proceed to select **OK** 2 times, as shown in the image.

Connect using:		10 m
Intel(R) 82567LM Gina	Hernet Protocol (TCP/IP) Pro	perties ?
This connection uses the f	General	
	You can get IP settings assigne this capability. Otherwise, you no the appropriate IP settings.	d automatically if your network supports sed to ask your network administrator for
•	C Obtain an IP address auto	matically
instal	. Use the following IP addre	44:
Description	IP address:	192.168.0.2
Transmission Control Pre wide area network proto	Subnet mask:	255.255.255.0
across diverse interconn	Default gateway.	
Show icon in notificatic	C Obtain DNS server addres	
	- @ Use the following DNS ser	ver addresses:
	Preferred DNS server:	
	Alternate DNS server.	· · · ·
		Advanced

Figure 3

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Please open your preferred browser and input the LP-SGW2404FP or the LP-SGW2404F IP address by default: 192.168.0.1, as shown in the Figure 4, remember to configure your Network Card in the same range of IP addresses and use a port belonging to the administrative network, by default the Port 1.

Chttp://192.168.0.1/ - Windows Internet Explorer	
	×
Figure 4	

7

8

5

The equipment will prompt you for the User credentials, input them and select Login, (see Figure 5).

SLANPRO	
User Name: admin Password: •••••	
Login Clear	

6

Verify that the VLAN that manages the equipment does so, for this, please select option System Info/System IP and check option Management VLAN in this case the VLAN 1 the one by default as shown in Figure 6. (Shown in figures that follow are the windows that pop for the LP-SGW2404FP, similar windows will pop for the LP-SGW2404F switch).

SLANPRO	24 Copper PoE + 4 Fiber Gigabit Managed Switch Complies with PoE Standard 802,11af and 802, 11af
System System Info System Info System Info System Tools Access Security Switching VLAN Spanning Tree Multicast OoS PoE Acc Natwork Security Stem LLDP	24 Copper POE + 4 Fiber Gigabit Managed Switch Complex with POE Standard 802.11af and 802.11af System Time Dayloght Saving Time System P Price Description System Time Dayloght Saving Time System P IP Conig MAC Address: 0-27-11-02-5C-8A IP Address Mode: ® State IP C OHCP C BOOTP Management VLAN: 1 OvLAN ID: 1-4094) IP Address: 192.168.0.1 Help Subnet Mask 255.255.255.0 Default Gateway. Note: Changing IP address to a different IP segment will Interrupt The network communication, so please keep the new IP address in the same IP segment will interrupt The network.
Cluster Maintenance Save Config Logout	

Figure 6

Lets create our first VLAN called VLAN 1-2 Equipment of Zone A (Ports 2 to 20). Select option VLAN/802.1Q VLAN/VLAN Config/Create as shown in Figure 7.

SLANPR	24 Cop with P	oper Pole = 4 Fil oE Standard 80	ber Gigabit Managed Switch Com 2.11af and 802, 11at	plies		
LP-SGW2404FP	VLAN Confi	Port Cont	a -			
Bridem Dwitching VLAN • BO2.10 VLAN • NAC VLAN • NAC VLAN • OVRP Bgaarling Tree Waitcast Go3 Page AGL Nebwork Security SalwP LLDP Cluster Maincenance Ba+e Centig	VLAN T	VLANID 1	Name Defaul VAN Create A	Members 1-24 Delds Help	VUNID	Estipute
			Eiguro 7			

Fill the VLAN ID fields with the number of the VLAN (In this case 2), fill the field Name, with the name of the VLAN , in this case(VLAN 1-2), select all the desired ports(2-20), then select **Apply**, as shown in **Figure 8**.

LP-SGW2404FP	VLAN Config	Port Conf	0			_
System	VLAN Cred					
Switching	VLANIC	ε.	2 (2-4094)		Check	1
VLAN	Name		Man 1-2 (16 characters maximum)			-
- 882.10 VLAN			(10 characters maximum)			
MAG VEAN	10.000.000					
Protocol VLAN	VLAN Memo	iers			1.5	
- OVRP				Port	Se	Jec:
Spanning Tree	Select	Port	Link Type	Egress Rule	LAG	
Multicast		1	ACCESS	UNTAO	-	_
QoS	P	2	ACCESS	UNTAG	-	
PoE	2	3	ACCESS	UNTAG	-	
ACL	2	4	ACCESS	UNTAO		
Network Security	9	5	ACCESS	UNTAO	-	
SNMP	9	6	ACCESS	UNTAO		
LLDP	2	7	ACCESS	UNTAO	-	
Cluster	R	8	ACCESS	UNTAO	-	
Maintenance	P	9	ACCESS	UNTAO	-	
Save Config	P	10	ACCESS	UNTAO		
	P	11	ACCESS	UNTAO		
Logout	P	12	ACCESS	UNTAG		
	P	13	ACCESS	UNTAG		
	P	14	ACCESS	UNTAG		

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We can check how we have the first VLAN already created (**Figure 9**), it will only communicate the equipment in those ports.



Figure 9

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Lets create our second VLAN called VLAN 1-3 Zone B equipment (ports 21 to 23), Select Option VLAN/802.1Q VLAN/VLAN Config/Create, as shown in Figure 10.

LP-SGW2404FP	VLAN Confi VLAN	Port Correction succes	e d		
System	VLAN T	able		VLANE	D Select
VEAN	Select	VLANID	Name	Members	Operation
802.10 VLAN		1	DefaultVLAN	1,21-24	Edt Detail
MAO VLAN	R	2	Vian 1-2	2-20	Edt] Detail
Protocol VLAN OVRP Spanning Tree	Televisi	BF 3	Create All	Delete Help	

Figure 10

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Fill the VLAN ID fields with the VLAN number, in this case 3, fill the Name field, with the name of the VLAN, in this case VLAN 1-3, select the desired ports 21 to 23, select **Apply**, as shown in **Figure 11**.

P-SGW2404FP	VLAN Config	PortConf	9			
	VLAN Create					
witching .	VLAN ID:		3	(2-4094)	C	Check
N AN	Nama	Name		Max 1.1		
802.10 VLAN	realize.			- Commenter a material de la		
MAC VEAN	be abledged					
Protocel VLAN	VLAN Memo	ers				-
OVRP					Port	Sele
panning Tree	Select	Port	Link Type	Egress Rule	LA	9
ulticast		11	ACCESS	UNTAO	-	
45		12	ACCESS	UNTAG		
oE		13	ACCESS	UNTAG	-	
eL.		14	ACCESS	UNTAG	-	
etwork Security		15	ACCESS	UNTAO	-	
NMP		16	ACCESS	UNTAG	-	
102	•	17	ACCESS	UNTAG	-	
hostar	•	18	ACCESS	UNTAO	-	
alatananza		19	ACCESS	UNTAO	-	
annuerrainue		20	ACCESS	UNTAO	-	
are coming	9	21	ACCESS	UNTAG	-	
	R	22	ACCESS	UNTAG	-	
idoor.	P	23	ACCESS	UNTAG	-	
	-	24	ACCERS	LINITAG	-	

Figure 11

12

Let's check in **Figure 12** how we created the 3 VLAN's, 3 virtual switches which don't connect between them.

LP-SGW2404FP	VLAN Confi	Port Conf	9			
System •	VLAN TO	able .			VLANID	Select
WHITE W	Select	VLANID	Name	Members		Operation
- 882.10 VLAN		1	Default VLAN	1,24		Edit Detail
• MAC VLAN		2	Vian 1-2	2-20		Edit Detail
Protocel VLAN	P	3	Vian 1-3	21-23		Edit Detail
• GVRP Spanning Tree Multicast			Create Al	Delete Help		
208 PeE	Total VLA	96.3				

Figure 12

13

Now, the ports are all defined for these VLAN's as access ports, in order to use one port for several VLAN's we must configure this port as General, in order to do this, the following example in which the port 1 is the link port between the VLAN's, remember that Port 1 and the 24 are associated to the management VLAN defined in the paragraph 6.

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First select **Port Config**, then port 1, let's change it to General and select **Apply** as shown in **Figure 13**.

LP-SGW2404EP	VLAN Config	Port Con	63				
	-						
System	VLAN Port	Config					
Switching					Port	Sel	ec
VLAN	Select	Port	Link Type	PVID	LAG	VLAN	
- 802.10 VLAN	Г	1	OENERAL .	1			
MAC VEAN	P	1	ACCESS	1		Detail	
Protocol VLAN		2	ACCESS	2	-	Detail	
• OVRP		3	ACCESS	2	-	Detail	
Spanning Tree		4	ACCESS	2		Detail	
Multicast		5	ACCESS	2		Detail	
008		6	ACCESS	2		Detail	
PoE		7	ACCESS	2		Detail	
ACL.		8	ACCESS	2	-	Detail	
Network Security		9	ACCESS	2	-	Detail	
SNMP		10	ACCESS	2		Detail	
LLDP		11	ACCESS	2		Detail	
Cluster		12	ACCESS	2		Detail	
Maintenance		13	ACCESS	2		Detail	
Save Config		14	ACCESS	2		Detail	
			[
Logout				a neeb			

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Let's check the type of port which now is General as shown in **Figure 14**.

LP-SGW2404FP	VLAN Config	Port Config					
	VLAN Port	Config					
System					Port	8	lelec
Switching	Select	Port	Link Type	PVID	LAD	VLAN	
802 10 M AN	Г		ACCESS .				
MAC VIAN		1	OENERAL	1		Detail	
Protocol VLAN		2	ACCESS	2		Detail	
OVRP		3	ACCESS	2		Detail	
Spanning Tree		4	ACCESS	2		Detail	
Multicast		5	ACCESS	2	(100)	Detail	
005		6	ACCESS	2		Detail	
PoE		7	ACCESS	2	-	Detail	
ACL.			ACCESS	2		Detail	
Network Security		9	ACCESS	2		Detail	
SNMP		10	ACCESS	2	-	Detail	
LLDP		11	ACCESS	2		Detail	
Cluster		12	ACCESS	2		Detail	
Maintenance		13	ACCESS	2		Detail	
Save Config		14	ACCESS	2		Detail	
			Anniv				

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Select **Edit** from the **VLAN** to which we will add the port, as shown in **Figure 15**.

SLANPRO 24 Copper Poll + 4 Fiber Gigabit Managed Switch Complex with Poll Standard 802 11st and 802 11st							
LP-SGW2404FP	VLAN Confi	Port Cont	9				
System 💻	VLAN T	sbie					
Owitching.					VLANID	Select	
VEAN	Select	VLANID	Name	Members		Operation	
* 882.10 VLAN	E	1	Default VLAN	1,24		Edt Detail	
MAC VEAN	•	2	Vian 1-2	2-20		Edt Detail	
Protocol VLAN		3	Vian 1-2	21-23		Edit Detail	
 QVRP 			Country [
Spanning Tree			(Crease)				
Multicast							
048	Tobal VL/	SVL 3					
PoE							

Figure 15

17

Now select Port 1 and leave it as Untag, (tag means the equipment or devices which is connected to that port can identify from which VLAN the traffic comes from), now, select **Apply**, see **Figure 16**.

LP-SGW2404FP	VLAN Centig	Port Conf	9					
	10 ANI losts							
System 🔺	TUNCTION.							
Switching	VLAN ID:		2	(2-4094)				
VLAN	Name:		Man 1-2 (16 characters maxim					
* 882.10 VLAN								
· MAC VLAN	VLAN Memb	ers						
Protocol VLAN					Port	Select		
OVNP	Select	Port	Link Type	Egress Rule	LAO			
Spanning Tree	R	1	OENERAL	UNTAO -				
0.0	2	2	ACCESS	UNTAG				
PAC .	R	3	ACCESS	UNTAO				
400	2	4	ACCESS	UNTAG				
National Sacurity	9	5	ACCESS	UNTAG				
SNMP	9	6	ACCESS	UNTAO				
LLOP	9	7	ACCESS	UNTAG	-			
Gluster	12	8	ACCESS	UNTAG				
Maintenance	9	9	ACCESS	UNTAG				
Save Config	9	10	ACCESS	UNTAO				
	1	11	ACCESS	UNTAO				
Legaut	P	12	ACCESS	UNTAG				
	R.	13	ACCESS	UNTAO				
	2	14	ACCESS	UNTAG				

Figure 16

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Check how a port, (In this case Number 1), belongs to two VLAN's, let's add Port 1 to VLAN 3 following the same procedure as in the paragraph 17.

SLANPRO 24 Copper Fv8 + 4 Fiber Gipabit Managed Switch Compiles with FvC Standerd 692.11a1 and 892.11a1							
LP-SGW2404FP	VLAN Confi	Port Con	5g				
System	VLAN TI	ible			VLANID	Select	
Switching	Select	VLANID	Name	Members	Ope	ration	
* 802.10 VLAN		1	Default VLAN	1,24	Edt	Detail	
MAC VEAN		2	Vian 1-2	1-20	Edti	Detail	
Protocol VLAN		3	Vian 1-3	1,21-23	Edt)	Detail	
• over Spanning Tree Mutticast GeS PoE	Total VLA	VC 3	Create	All Delete Help)		

Figure 17



We can see now how Port 1 belongs to all 3 VLAN's and that it can communicate with all ports, as shown in **Figure 18**.

SLANPRO 24 Copper FVE + 4 Fiber Gigabit Managed Switch Complies with FVE Standard 802.11af and 802.11at							
LP-SGW2404FP	VLAN Confe	Port Conf	9				
System	VLAN TI	ible			VLANID	Select	
Switching	Select	VLANID	Name	Members		Operation	
+ 882.10 VLAN		1	Default VLAN	1.24		Edit Detail	
MAC VEAN		2	Vian 1-2	1 0		Edt Detail	
Pretecol VLAN		3	Vian 1-3	121-23		Edt Detail	
OVRP Spanning Tree Multicast QoS	Total VLA	9C 3	Creater	Al Delete Help			



Note: In this example we have the Port 1 talking with all other ports. For more configurations please refer to the switch manual.

LanPro is continuously improving its products and reserves the right to change specifications and availability without prior notice.