

Technical Bulletin PROMATRIX 6000 Network Configuration Guide – v1.1

Related Products:

PROMATRIX 6000 Controller PMX-4CR12

Severity:

- \Box Immediate action required
- □ Action strongly recommended
- \boxtimes Informative

PROMATRIX 6000 Network Configuration Guide

This Technical Bulletin describes the configuration of a PROMATRIX 6000 network.

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1. Introduction

This Technical Bulletin covers the configuration of a specific Barox switch for use with a PROMATRIX 6000 network. The interface, shown in the Technical Bulletin, is specific for the Barox LT-802GBTME switch. Other switches will have different management interfaces.

The parameters shown in the examples reflect common configurations for PROMATRIX 6000 hardware and can be implemented on any managed switch – which meets the switch specification. QoS and VLANs are also covered in the network configuration guide, although they are not required for completeness.

Notice!

For EN54-16 systems, the Barox LT-802GBTME switch must be used and in case fiber connectors are required the AC-SFP-SX-E or AC-SFP-LX-E-10 SFP modules. See also the PROMATRIX 6000 Declaration of Performance (DoP).

Please order the switch directly at Barox by using the following order reference: "LT-802GBTME-BO". You will receive a LT-802GBTME switch with certified hardware and firmware. The certified switch and firmware can be found at the Barox website by using "LT-802GBTME-BO".

2. Basics

The Barox LT-802GBTME switches should be configured as follows:

IP address

- Generally individual IP addresses are mandatory for all networks with multiple devices.
- Switches are allowed to have identical IP addresses in case no access to the web interface is needed.

Firmware

- Same switch firmware and boot loader is mandatory for all networks with multiple switches.
- See the Barox LT-802GBTME manual for more details about firmware and boot loader updating.
- Use the switch firmware listed in the DoP.
 Example: IRIS-Net 4.0 is certified with the switch firmware v2.8.1b.

Rapid Spanning Tree Protocol (RSTP)

- For redundant connection (ring, mesh) of multiple racks.
- Mandatory for all networks where ring or mesh connections are used.

Notice!

The use of RSTP requires firmware v2.8.1.b or above.

Ethernet Ring Protection Switching (ERPS)

- ERPS prevents the formation of loops in a LAN.
- Mandatory for all networks where ring connections are used (alternative to RSTP).

Notice!

Either ERPS or RSTP protocol can be used, but not both at the same time.

Green Mode / Green Ethernet

- Feature for saving energy in Ethernet switches during periods with low network activity.
- Green Mode very likely causes synchronization issues on a Dante network with device clocks drifting away from the system-wide clock. Thus the Green Mode needs to be completely deactivated.

Notice!

The Barox LT-802GBTME does not have a Green Mode!

Fault contact

- The switch has to transfer a fault information to the PA system (via fault relay).
- The configuration of the fault relay has to be done individually to fit the system wiring.

Internet Group Management Protocol (IGMP) Snooping

- This is a feature for the control of multicast traffic.
- The IGMP Snooping function analyzes IGMP packets between hosts and multicast routers.
- If IGMP snooping is active, but no querier is defined, it can cause problems with the audio master and thus needs to be disabled.

Storm Protection

- This is a feature for saving bandwidth.
- If the Broadcast/Unicast/Multicast storm is over a certain threshold, the switch will automatically filter out the broadcast frames.
- This function can cause problems with the audio network and the IRIS-Net Device Scan. Thus storm protection options need to be disabled.

System Log

- The logging function records the events that occur in the switch.
- This function helps to understand the activity of the switch and diagnose problems.

Quality of Service (QoS, optional)

- Settings can be optimized for use with Dante/OMNEO.
- Mandatory for all networks with different kind of data traffic, which needs prioritized, guaranteed or limited bandwidth.
- QoS is not needed for a PROMATRIX 6000 network, these details are provided for completeness.

Virtual LANs (VLAN, optional)

- Virtual LANs (Local Area Network) are used to separate a physical LAN into multiple logical sub-networks.
- Trunk Ports:
 - For easy connection of multiple racks with VLANs.
 - Trunk ports must carry all VLANs.
 - Mandatory for all networks where multiple switches and VLANs are used.
- VLANs are not needed for a PROMATRIX 6000 network, these details are provided for completeness.

Notice!

Save the configuration.

After making changes to the switch configuration do not forget to save the configuration permanently – otherwise the configuration will be lost after a reboot.

3. Configuration

3.1. General Configuration via Webserver

Connect and login

1. Connect to the switch's default IP address 192.168.1.254 via the web browser.

🗙 barox	
Authorization Required	
Please enter your username and password.	
Password	
Login	

2. Enter user name "admin" and password "admin" and click on the Login button.

	🗙 barox		
Authorizatio	n Required		
Please enter your usernam	e and password.		
Username Password	admin		
		Login	

Notice!

The default user name and password might be changed. Please enter the correct user name and password instead.

Change IP address

- 1. Go to Basic Settings > IP Setting.
- 2. Change IP Address and Subnet Mask.
- 3. Change *Gateway address* and *DNS address* (optional). If you have a network with multiple (interconnected) Subnets, a Gateway can be defined.
- 4. Click on the Apply button.
- 5. Reconnect to the new IP address and log in again.

IP address: 192.168.1.200 MAC address: 38:B8:EB:20:44:70 Firmware Version: 2.8.11 System System IPV6 CONFIGURATION DHCP Client: IPV4 CONFIGURATION DHCP Client: IPV6 Setting System Time Port Management + IGMP Snooping +
Status Basic Settings System System IPV6 Neighbor Cache IPV6 Setting System Time Port Management et Spanning Tree IGMP Snooping et
Basic Settings System Change Password IP Setting IP Setting IP V6 Neighbor Cache IP V6 Setting System Time Port Management ters ters
System IPv4 CONFIGURATION Change Password DHCP Client: IP Setting IP Address: IPv6 Setting Subnet Mask: System Time + Port Management + IGMP Snooping +
Change Password DHCP Client: IP Setting IP Address: IPV6 Neighbor Cache Subnet Mask: IPV6 Setting Gateway: System Time DNS: RPS + IGMP Snooping +
IP Setting IP Address: 192.168.1.200 IPV6 Neighbor Cache Subnet Mask: 255.255.0 IPV6 Setting Gateway:
IPv6 Neighbor Cache IPv6 Setting System Time Port Management + ERPS + Spanning Tree + IGMP Snooping +
IPv6 Setting System Time Port Management + Spanning Tree + IGMP Snooping +
Port Management + ERPS + Spanning Tree + IGMP Snooping +
ERPS + Spanning Tree + IGMP Snooping +
Spanning Tree + IGMP Snooping +
IGMP Snooping +
Torn Snooping
VIAN +
005 +
Port Trunk +
Port Mirrorina +
Security +
SNMP +

Notice!

The label-based audio routing used by Audinate's Dante protocol, will not support multiple Subnets and works only in a single Subnet with flat hierarchy. Other Audio Routing implementations, like direct Routing over Audio Routed Network Interface (ARNI), are currently NOT supported in IRIS-Net and PROMATRIX 6000.

Firmware

- 1. Check the *Firmware Version* in the grey bar on the top of the window.
- 2. If an update is necessary go to *Maintenance > Upgrade* and make an update.

Notice!

Please check the DoP to ensure the correct firmware is used.

		🔀 barox
		IP address: 192.168.1.200 MAC address: 38:B8:EB:20:44:70 Firmware Version: 2
Status		
Basic Settings	+	Upgrade
Port Management	+	Please do not power off or unplug your machine during upgrading
ERPS	+	FIRMWARE UPGRADE
Spanning Tree	+	Image: Browse
IGMP Snooping	+	beolaU
VLAN	+	
QoS	+	
Port Trunk	+	
Port Mirroring	+	
Security	+	
LLDP	+	
SNMP	+	
Storm Protection	+	
Rate Limit	+	
DHCP Server/Relay	+	
802.1X	+	
UPnP	+	
Modbus	+	
System Warning	+	
MAC Table	+	
Maintenance	_	
Ung	ade	
Rel	not	
Def	ault	
Configuration	+	
Log out		

Edit location and name

- 1. Go to Basic Settings > System.
- 2. Under Switch Setting enter a System Name and a System Location.

		🔀 barox	
		IP address: 192.168.1.200 MAC address: 38:B8:EB:20:44:70 Firmware Version: 2.8.1b	
Status			- P1 P2 E
Basic Settings	-	System Setting	
Sys	tem	SWITCH SETTING	, d Console
Change Passv	vord	System Name: Switch	RX
IP Set	ting	System Description: 10 port DIN-Rail Managed Ethernet Switch	
IPv6 Neighbor Ca	ache	System Location:	USB
IPv6 Set	ting	System Contact:	barox
System T	Time		
Port Management	+	Apply	
ERPS	+	·	
Spanning Tree	+		
IGMP Snooping	+		
VLAN	+		
QoS	+		
Port Trunk	+		
Port Mirroring	+		
Security	+		
LLDP	+		
SNMP	+		

Change Admin password

- 1. Go to Basic Settings > Change Password.
- 2. Under Admin Password enter or edit the password of the administrative account.

Notice!

Please change this password for every switch in your network, to comply with EN54-16 standards.

	🗙 barox
	IP address: 192.168.1.200 MAC address: 38:B8:EB:20:44:70 Firmware Version: 2.8.1b
Status	
Basic Settings —	Change Password
System	
Change Password	Admin Password:
IP Setting	Confirmation:
IPv6 Neighbor Cache	
IPv6 Setting	Manager Password:
System Time	Confirmation:
Port Management +	
ERPS +	User Password: 2
Spanning Tree +	Confirmation:
IGMP Snooping +	
VLAN +	
Qo5 +	
Port Trunk +	
Port Mirroring +	
Security +	
LLDP +	
SNMP +	

- Edit System Time
 1. Go to *Basic Settings > System Time*.
 2. Set the time of the switch to the time of the PROMATRIX 6000 controller.

		🔀 barox	
		IP address: 192.168.1.200 MAC address: 38:B8:EB:20:44:70 Firmware Version: 2.8.1b	
Status			
Basic Settings	-	System Time	
Sys	tem	NTP	
Change Passv	vord	Local Time: Wed Jun 20 08:51:42 CEST 2018	
IP Set	ting	Current Time:	
IPv6 Neighbor Ca	iche		6
IPv6 Set	ting	Current Date:	P
System T	ïme	Select Your Time Zone:	P
Port Management	+	Enable NTP Client:	
ERPS	+	Time Server: 2.pool.ntp.org	
Spanning Tree	+		
IGMP Snooping	+	Apply	
VLAN	+		
QoS	+		
Port Trunk	+		
Port Mirroring	+		
Security	+		
LLDP	+		
SNMP	+		

Save running configuration on the switch 1. Go to *Configuration > Save*.

- 2. Save the running configuration as startup configuration by clicking the Save button.

			🗙 barox	
		IP address: 192.168.1.20	200 MAC address: 38:B8:EB:20:44:70	Firmware Version: 2.8.1b
Status				
Basic Settings	+	Save		
Port Management	+		TION	
ERPS	+	Save Configura	ration:	Save
Spanning Tree	+			
IGMP Snooping	+			
VLAN	+	L		
QoS	+			
Port Trunk	+			
Port Mirroring	+			
Security	+			
LLDP	+			
SNMP	+			
Storm Protection	+			
Rate Limit	+			
DHCP Server/Relay	+			
802.1X	+			
UPnP	+			
Modbus	+			
System Warning	+			
MAC Table	+			
Maintenance	+			
Configuration	_			
s	ave			
Backup & Rest	ore			
Log out				

Save running or startup configuration as a file on a PC or USB drive

- 1. Go to Configuration > Backup & Restore.
- 2. Under *Configuration Management* click the *Backup* button to download the startup configuration file on your PC.
- 3. Under USB Management click the Backup button to save the running or the startup configuration to the USB drive connected to the switch.

		🔀 barox
		IP address: 192.168.1.200 MAC address: 38:B8:EB:20:44:70 Firmware Version: 2.8.1
Status		
Basic Settings	÷	File Management
Port Management	+	CONFIGURATION MANAGEMENT
ERPS	+	Backup Configuration: Backup
Spanning Tree	+	Upload Configuration: Browse Upload
GMP Snooping	+	
VLAN	+	USB MANAGEMENT
QoS	÷	Save Running Config To USB: Backup
Port Trunk	+	Upload Config From USB: Backup
Port Mirroring	+	
Security	÷	
LLDP	÷	
NMP	÷	
Storm Protection	÷	
tate Limit	+	
HCP Server/Relay	+	
302.1X	+	
JPnP	+	
lodbus	+	
System Warning	+	
MAC Table	+	
laintenance	+	
onfiguration	-	
S	ave	
Backup & Rest	ore	
Log out		

3.2. RSTP configuration

- 1. Go to Spanning Tree > RSTP Configuration.
- 2. Activate Rapid Spanning Tree Protocol.
- 3. Under *RSTP* / *CIST* make the following settings:
 - Mode: RSTP
 - Root Priority: 32768
 - Root Hello Time: 9
 - Root Forward Delay: 30
 - Root Maximum Age: 22
- 4. Under *RSTP/CIST PORT* make the following settings:
 - Path Cost: 0
 - Priority: 128
 - Admin P2P: True
 - Edge: Auto
 - Admin Non STP: False
- 5. Click on the *Apply* button.

Status	
Basic Settings	+
Port Management	+
ERPS	+
Spanning Tree	_
RSTP S	itatus
DCTD Configure	reaction
KSTP Configur	auon
MSTI S	tatus
MSTI Configur	ration
MSTI Port Configu	ration
IGMP Snooping	+
VLAN	+
QoS	+
Deut Truch	
Port Frunk	+
Port Mirroring	+
Security	+
LLDP	+
SNMP	+
Storm Protection	+

Notice!

3.3. ERPS configuration

Do not close the ring, before all switches are configured as follows and all nodes in the topology are ready.

If redundant cabling between racks is required, only one OMNEO output is allowed to be connected to the local network device and the network devices need to be included into the same cabinet as the controllers. This is only valid if ERPS is active.

- 1. Before configuring ERPS, you need to disable spanning tree protocol (STP), because only one of these two protocols can be active in a switch.
- 2. Go to ERPS > ERPS Configuration.
- 3. Enable Ethernet Ring Protection Switching.
- 4. Under ERPS CONFIGURE make the following settings:
 - Protocol: Enable
 - Ring Port 0: Set the port which is used as first port for the ring
 - Role: None
 - Ring Port 1: Set the port which is used as second port for the ring
 - Role: None
 - Ring ID: Type in an ERPS ring ID (range: 1 239)
 - APS Channel: Type in an ERPS APS Channel ID (range: 1 4094)
 - It cannot be the same ID as the existing VLAN IDs! (Default VLAN ID: 1)
 - Revertive: Enable (The revertive mode has no impact, if the ring ports have no role)
- 5. Click on the *Apply* button.

			🔀 barox	
		IP address: 192.168.1.	MAC address: 38:B8:EB:20:44:70	Firmware Version: 2.8.1b
Status				
Basic Settings	+	ERPS Con	figuration	
Port Management	+	ERPS CONFIGUR/	TION	
ERPS	-	Protocol:	Enable V	
ERPS St	atus	Ring Port 0:	9	
ERPS Configura	tion	Role:	None 🗸	
Spanning Tree	+	Ring Port 1:	10	
IGMP Snooping	+	Role:	None 🗸	
VLAN	+	Ring ID:	1	
Qus Dort Trunk	+	APS Channel:	1000	
Port Mirroring		Revertive:	Enable 🗸	
Security	+			Apply
	+			Арру
SNMP	+			
Storm Protection	+			
Rate Limit	+			
DHCP Server/Relay	+			
802.1X	+			

Notice!

3.4. Green Mode

- 1. The Green Mode has to be disabled.
- 2. The Barox LT-802GBTME does not have a Green Mode. There is no setting to be done for the Barox LT-802GBTME.

Notice!

If you are using another switch, you have to completely deactivate the Green Mode for all ports.

3.5. Fault Contact

- 1. Go to System Warning > Fault Alarm.
- 2. Configure due to the requirements of the system, when the Fault Alarm should be active.
- 3. Click the *Apply* button.

Statur	
Beele Cettlese	
Basic Settings	+
Port Management	+
ERPS	+
Spanning Tree	+
IGMP Snooping	+
VLAN	+
QoS	+
Port Trunk	+
Port Mirroring	+
Security	+
	+
CNMD	
SNMP	+
Storm Protection	+
Rate Limit	+
DHCP Server/Relay	+
802.1X	+
UPnP	+
Modbus	+
System Warning	_
Syslog Setti	ing
System Event L	_og
SMTP Setti	ing
Event Selecti	ion
Fault Ala	rm
MAC Table	+
Maintonanco	
maintenance	т
Configuration	+
Log out	

Notice!

3.6. IGMP Snooping

- 1. Go to IGMP Snooping > IGMP Snooping Configuration.
- 2. Disable IGMP Snooping.
- 3. Click the *Apply* button.

	🔀 barox
	IP address: 192.168.1.200 MAC address: 38:B8:EB:20:44:70 Firmware Version: 2.8.1b
Status	
Basic Settings +	IGMP Snooping Configuration
Port Management +	IGMP SNOOPING
ERPS +	IGMP Snooping Enable:
ICMD Encoping -	IGMP QUERIER
IGMP Snooping — IGMP Snooping Stream Table IGMP Snooping Configuration	Querier Enable: Query Interval(s): 125 Query Max Response Time (s):
VLAN +	Apply
QoS +	
Port Trunk + Port Mirroring + Security +	
LLDP +	
SNMP +	
Storm Protection +	
Rate Limit +	
DHCP Server/Relay +	

Notice!			
Do not forget to	save the	changes	made!

Storm Protection 3.7.

- 1. Go to Storm Protection > Storm Protection.
- Disable all protection options.
 Click the *Apply* button.

			🗙 bai	rox
		IP address: 192.168.1.200	MAC address: 38:E	88:EB:20:44:70 Firmware Version
tatus				
Basic Settings	+	Storm Prote	ction	
Port Management	+	STORM PROTECTION		
RPS	+	Frame Type	Enable	Rate(fps)
panning Tree	+	unicast		1024K 🗸
		multicast		1024K ¥
GMP Shooping	+	broadcast		1024K V
VLAN	+			Appl
QoS	+			
Port Trunk	+			
ort Mirroring	+			
Security.	1			
ecurity	Ŧ			
LDP	+			
IMP	+			
torm Protection	—			
Storm Protec	tion			
Rate Limit	+			
HCP Server/Relay	+			
102 1X				
2.17				
PnP	+			

3.8. System Log

- 1. Go to System Warning > Syslog Setting.
- 2. Enable the Syslog by choosing *Local Only, Remote Only* or *Local and Remote* as Syslog Mode.
- 3. Click the *Apply* button.

		🗙 barox
		IP address: 192.168.1.200 MAC address: 38:B8:EB:20:44:70 Firmware Version: 2.8.
Status		
Basic Settings	+	Syslog Setting
Port Management	+	SYSLOG
ERPS	+	Syslog Mode:
Spanning Tree	+	Svslog Server IP Address:
IGMP Snooping	+	.,,
VLAN	+	Apply
QoS	+	
Port Trunk	+	
Port Mirroring	+	
Security	+	
LLDP	+	
SNMP	+	
Storm Protection	+	
Rate Limit	+	
DHCP Server/Relay	+	
802.1X	+	
UPnP	+	
Modbus	+	
System Warning	-	
Syslog Sett	ing	
System Event	Log	
SMTP Sett	ing	
Event Select	ion	
Fault Ala	rm	
MAC Table	+	
Maintenance	+	
Configuration	+	
Log out		

Notice!	
Do not forget to save the	changes made!

- 4. Go to System Warning > Event Selection.
- 5. Configure due to the requirements of the system, which events should be logged.
- 6. Click on the *Apply* button.

🔀 barox						
		IP address: 192.168.1.200	MAC address:	38:B8:EB:2	0:44:70	Firmware Version: 2.8.1b
Status						
Basic Settings	+	Event Select	ion			
Port Management	+		lon			
RPS	+	Event	SYSLOG		SMTP	
anning Tree	+	System Cold Start:				
P Spooning	-	EVENT SELECTION POR	ιT			
		Port No.	SYSLOG		SMTP	
J	+	1	Disable	~	Disable	~
	+	2	Disable	~	Disable	~
Trunk	+	3	Disable	~	Disable	~
		4	Disable	<u> </u>	Disable	×
Mirroring	+	5	Disable	~	Disable	~
irity	+	7	Disable	~	Disable	~
	+	8	Disable	~	Disable	~
		9	Disable	~	Disable	~
•	+	10	Disable	~	Disable	~
r Limit P Server/Relay 1X	+ + + +					Арріу
dbus	÷					
em Warning	_					
Syslog Sett	ing					
System Event	Loa					
SMTP Sett	ina					
Event Select	ion					
Event Select						
Fault Ala	irm					
able	+					
enance	+					
nfiguration	+					
g out						

3.9. QoS configuration (optional)

- 1. Go to QoS > QoS Classification.
- 2. Under QoS Classification make the following settings:
 - Queue Scheduling: Strict
 - Trust Mode: DSCP
- 3. Click on the *Apply* button.

			🗙 baro	X		
		IP address: 192.168.1.200	MAC address: 38:B8	EB:20:4	4:70 F	irmware Version: 2.8.
Status						
Basic Settings	+	Qos Classifi	cation			
Port Management	+	005 CLASSIFICATION				
ERPS	+	Queue Scheduling	: Strict 🗸]		
Spanning Tree	+	Port	Trust Mode	I	Default Cos	
GMP Snooping	+	1	DSCP	~	0	~
		2	DSCP	~	0	~
AN	+	3	DSCP	~	0	~
s	-	4	DSCP	~	0	~
OoS Classifica	tion	5	DSCP	<u> </u>	0	<u> </u>
· ·		<u>6</u>	DSCP		0	~
CoS Map	ping	8	DSCP	~	0	~
DSCP Map	ping	9	DSCP	~	0	~
rt Trunk	+	10	DSCP	~	0	~
ort Mirroring	+					Apply
ecurity	+					
DP	+					
NMP	+					
orm Protection	+					
to Limit						
le Linnt	-1-					
HCP Server/Relay	+					

- 4. Go to QoS > DSCP Mapping.
- 5. Make sure that the settings in the DSCP Mapping table look like the ones in the table below.
- 6. Click on the *Apply* button.

					🗙 b	arox	(
		IP addres	s: 192.168.1.2	00 M	IAC address: 3	8:B8:EB	:20:44:70	Firmwa	are Version	: 2.8.1
Status										
Basic Settings	+	DSCI	P Mappir	g						
Port Management	+	DSCP MA	PPING							
ERPS	+	Priorit	y Queue	Priority	Queue	Priority	Queue	Priority	Queue	
Spanning Tree		0	0(Lowest) V	16	2 🗸	32	4 🗸	48	6	~
putting free	т	1	0(Lowest) V	17	2 🗸	33	4 🗸	49	6	~
GMP Snooping	+	2	0(Lowest) 🗸	18	2 🗸	34	4 🗸	50	6	~
/LAN	+	3	0(Lowest) 🗸	19	2 🗸	35	4 🗸	51	6	~
		4	0(Lowest) 🗸	20	2 🗸	36	4 🗸	52	6	~
05	-	5	0(Lowest) 🗸	21	2 🗸	37	4 🗸	53	6	~
QoS Classific	ation	6	0(Lowest) 💙	22	2 🗸	38	4 🗸	54	6	~
		7	0(Lowest) 🗸	23	2 🗸	39	4 🗸	55	6	~
COS Map	ping	8	1	24	3 🗸	40	5 🗸	56	7(Highest)	<u> </u>
DSCP Map	ping	9	1	25	3 🗸	41	5 🗸	57	7(Highest)	<u> </u>
ort Trunk	+	10	1 ~	26	з 🗸	42	5 🗸	58	7(Highest)	<u> </u>
		11	1	27	3 🗸	43	5	59	7(Highest)	~
rt Mirroring	+	12	1	28	3 🗸	44	5 🗸	60	7(Highest	~
curity	+	13	1	29	3	45	5	61	7(Highest	<u> </u>
		14	1	30	3	46	5	62	/(Highest)	~
.DP	+	15	1	151	3	4/	5	63	(Highest)	~
ммр	+									Арр
Storm Protection	+									
Rate Limit	+									
0.100 C (D-l										
DHCP Server/Relay	+									

3.10. VLAN configuration (optional)

In this example Port 1-3 belong to VLAN1 and Port 4-6 belong to VLAN2. Port 7-10 are so called trunk ports and are used for the interconnection of the switches and transport both VLANs.

- 1. Go to 802.1Q VLAN > 802.1Q VLAN
- 2. Under 802.1Q VLAN create a second VLAN by clicking on the Add button and enter VLAN ID 2
- 3. Make the following settings for the two VLANs:

VLAN1	Port 1-3:	Untag	VLAN2	Port 1-3:	None
	Port 4-6:	None		Port 4-6:	Untag
	Port 7-10:	Tag		Port 7-10:	Tag
		//D		ulatala V/LANLau	

- 4. Under 802.1Q VLAN PVID configure which port belongs to which VLAN and if a port filter should be active.
 - Port 1-3: PVID 1 Port 4-6: PVID 2 Port 7-10: PVID 1
- Ingress Acceptable Frame Types Filter: All Ingress Acceptable Frame Types Filter: All Ingress Acceptable Frame Types Filter: All

Thus you can access the web interface of the switch although when connecting to the trunk ports.

5. Click on the *Apply* button.

		🔀 barox
		IP address: 192.168.1.200 MAC address: 38:B8:EB:20:44:70 Firmware Version: 2.8.1b
Status		
Basic Settin	ngs +	802.1Q VLAN
Port Manag	ement +	MANAGEMENT VLAN SETTING
ERPS	+	Management VLAN ID: 1
Spanning Tr	ree +	
IGMP Snoop	ping +	802.1Q VLAN
VLAN	_	ID Name 01 02 03 04 05 06 07 08 09 10
		TD Name 01 02 03 04 05 06 07 08 09 10
	Qinq Vlan	$1 \qquad \qquad$
8	02.1Q VLAN	2 NC V NC V NC V Ur V Ur V Ta V Ta V Ta V Ta V Delete
QoS	+	
Port Trunk	+	802.1Q VLAN PVID/FILTER
		Port PVID Ingress Acceptable Frame Types Hiter
Port Mirrori	ing +	2 1 All
Security	+	3 1 All V
LLDP	+	4 2 All V
		5 2 All V
SNMP	+	6 2 All V
Storm Prote	ection +	7 1 All 🗸
		8 1 All 🗸
Rate Limit	+	9 1 All 🗸

3.11. IP Configuration via Serial Console (optional)

You can change the IP address of the switch either via serial connection or via web browser. In this chapter you will see, how to change the IP address via serial connection.

Start PuTTY and select the appropriate COM Port and a Speed or rather a Baudrate of 115200. The Putty default settings (8 Databits, 1 Stop Bit, Parity = None, Flow Control = XON/XOFF) can stay unchanged.

🕵 PuTTY Configuration		×
Category:		
E. Session	Basic options for your PuTTY se	ssion
	Specify the destination you want to conne	ct to
	Serial line	Speed
Bell	COM4	115200
Features	Connection type:	Serial
Appearance Behaviour Translation Selection	Load, save or delete a stored session Saved Sessions	
Colours	Default Settings	Load
Data		Save
Proxy Telnet Rlogin		Delete
Serial	Close window on exit: Always Never Only on cl	ean exit
About	Open	Cancel

Open Serial session in PuTTY

- 1. Logon to switch with the following credentials:
 - Username: admin
 - Password: admin

Note: Logon credentials can be changed later via web interface.

- Obtain privileged session rights: Enter "*enable*" in the console and confirm with Enter keypress.
- 3. Switch from Run-Mode to Configuration-Mode: Enter "*configure terminal*" and confirm with Enter keypress.
- 4. Change the IP address of the currently connected switch:
 - Enter "ip address XXX.XXX.XXX.XXX YYY.YYY.YYY.YYY"
 - The first portion of this command, the XXX.XXX.XXX.XXX part, must be replaced with a valid IP address (e.g. 192.168.1.101). Please remember that the device IP address within a network segment must be unique.
 - The second portion of the command, the YYY.YYY.YYY.YYY part, defines the Netmask for the Subnet. This must be replaced with an appropriate Netmask that fits your subnet. In most cases this will be: 255.255.225.0 (a standard Class C Network with 254 Devices in a single Subnet).
- 5. The Device will change its address and closes the connection. Now you can reach the webserver of the switch under 192.168.1.101 via a web browser.



4. Default Settings

Barox LT-802GBTME series factory default settings:

Default IP address:	192.168.1.254
Default subnet mask:	255.255.255.0
Default user name:	admin
Default password:	admin

PC's network settings:

For the configuration of a new, unconfigured Barox LT-802GBTME switch, assign an IP address from the 192.168.1.1 to 192.168.1.253 range and subnet mask 255.255.255.0 to your PC's network interface.

Internet Protocol Version 4 (TCP/IPv4) Properties			
General			
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.			
Obtain an IP address automatically			
Use the following IP address:			
IP address:	192.168.1.19		
Subnet mask:	255 . 255 . 255 . 0		
Default gateway:			
Obtain DNS server address automatically			
Use the following DNS server addresses:			
Preferred DNS server:			
Alternate DNS server:			
Validate settings upon exit	Advanced		
	OK Cancel		

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5. Redundant Network Setup

If redundant cabling between racks is required, there are three different ways to realize this:

Redundant network setup with RSTP configured switches (single ring)



Redundant network setup with RSTP configured switches (double ring)



Notice!

If using a double ring, it is necessary to make a connection between the two rings in each cabinet.

Redundant network setup with ERPS configured switches (single ring)



6. Switch Specification

The switch for a PROMATRIX 6000 system needs to fulfill the following specifications:

Feature	Standard	Description
1Gbit full duplex copper ports	IEEE802.3	Standard for Dante.
1Gbit full duplex fiber optic ports (SFP modules)	IEEE802.3	Needed for distances > 100m.
Switch has to be manageable (via web browser or at least by telnet/serial console)	n.a.	Switch needs to be configurable.
Energy Efficient Ethernet (EEE) deactivateable	IEEE 802.3az	Most implementations of EEE (also known as Green Ethernet) cause problems because of implementation flaws. A good implementation should work but does not save energy since the Precision Time Protocol (PTP) synchronization avoids this. Therefore it must be possible to disable EEE (this is not possible with unmanaged switches).
Wire speed switching	n.a.	If package switching is managed by software, variable latency can occur. This can cause network streaming problems which must be avoided.
Full Quality of Service (QoS) through differentiated services (DiffServ) on all Ports and on Backplane. QoS with a minimum of 4 queues and strict priority packet scheduling	DiffServ QoS	We recommend to use DiffServ (DSCP) QoS with priorities for 4 queues. Quality of Service (QoS) enables for prioritizing the transfer of specific data. Configuring the QoS as recommended by Dante on a network switch, give Dante clock synchronization (PTP) top priority and give audio data the next highest priority over background data traffic. This will ensure Dante audio streaming performance, when control data over the same network is transferred. This ensures that control data still goes through when transferring massive amounts of audio data.
Rapid Spanning Tree (RSTP) support	IEEE802.1d-2004	To allow the creation of loops for redundancy (e.g. ring topology).
Fault contact	EN54-16	Required for link and switch supervision.
Redundant power supply option	n.a.	Minimum requirement is one 24V DC input (redundancy is ensured via the backup power supply / charger of the PROMATRIX 6000 system).
MAC table >1000	n.a.	Recommended to avoid the switch starts broadcasting unicast packets because it runs out of space.
Simple Network Management Protocol (SNMP) support (optional)	SNMPv3 (RFC 3410)	Recommended for network diagnoses (e.g. Docent software).
Link Layer Discovery Protocol (LLDP) support (optional)	IEEE 802.1AB	Recommended for network diagnoses (e.g. Docent software).
VLAN support (optional)	IEEE 802.1Q (tagged) or port based	Recommended for non EN54-16 systems to separate PROMATRIX 6000 data from other traffic.

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