

MikroTik SWOS Basic VLAN Configuration

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Nairobi, Kenya – January 30, 2018

Speaker Profile

- Adhie Lesmana
 - MTCNA, MTCWE, MTCTCE, MTCRE, MTCINE
- PowerNet Liberia, West Africa
 - Technical & Operation Manager
 - 2015 – Now
- Using Mikrotik Since 2008
- Forum Mikrotik Indonesia
 - Forum Administrator
 - The First Mikrotik User Forum in Asia
- Consultant & Networking Trainer



PowerNet Liberia



- ISP In Liberia, West Africa. since 1998.
- The First ISP with IPV6 in Liberia, West Africa.
- The Largest ISP Subscribers In Liberia. (NON GSM)
- The First ISP bring Mikrotik in Liberia, West Africa.
- And we always introduce people to use Mikrotik till today.

PowerNet Liberia

Neighbor List

Neighbors | Discovery Interfaces

Interface	I.	MAC Address	Identity	Platform	Version	Board Name	IPv6	Age (s)	Uptime
ether13		E4:8D:8C:AF:A4:5A	MilleniumHotel	MikroTik	6.39.3 (b...	CRS125-24G-1S	yes	16	3d 14:22:19
ether13		D4:CA:6D:FE:30:F8	PowerNetOffice	MikroTik	6.39.3 (b...	CRS125-24G-1S-2HnD	yes	43	56d 04:13:37
ether13		D4:CA:6D:D0:33:CB	Embassy Suite	MikroTik	6.38.5 (st...	RB SXT 5HPnD	no	48	41d 13:03:28
ether13		D4:CA:6D:9E:48:41	HajjAirfield	MikroTik	6.39.3 (b...	RB SXT 5HPnD	no	41	06:37:17
ether13		00:0C:42:C8:C2:30	NrecaHouse	MikroTik	6.40.3 (st...	RB SXT 5HPnD	no	58	18d 10:21:43
ether13		00:0C:42:C8:C3:3C	NrecaOffice	MikroTik	6.40.3 (st...	RB SXT 5HPnD	no	30	30d 10:16:02
ether13		D4:CA:6D:D0:D3:0D	VPOfficeHQ	MikroTik	6.40.4 (st...	RB SXT 5HPnD	no	16	13:31:16
ether13		6C:3B:6B:02:00:9F	DenckToliver	MikroTik	6.40.3 (st...	RB SXT 5HPnD r2	no	14	2d 07:32:14
ether13		6C:3B:6B:03:48:FB	A La Lagoon	MikroTik	6.39.3 (b...	RB SXT 5nD r2	no	29	07:25:13
ether13		6C:3B:6B:80:D0:61	AMERICAN SCHOOL	MikroTik	6.34.4 (st...	RB SXT 5nD r2	no	34	7d 19:01:25
ether13		4C:5E:0C:E2:5B:23	AbigailFreeport	MikroTik	6.40.3 (st...	RB SXT 5nD r2	no	36	09:37:13
ether13		4C:5E:0C:0D:CF:D7	AdiHouse	MikroTik	6.40.3 (st...	RB SXT 5nD r2	no	15	10:59:13
ether13		4C:5E:0C:EF:AF:E9	BassemHarbHome	MikroTik	6.40.3 (st...	RB SXT 5nD r2	no	7	13:28:13
ether13		E4:8D:8C:DB:C2:BB	Christina	MikroTik	6.40.3 (st...	RB SXT 5nD r2	no	13	13:31:13
ether13		6C:3B:6B:79:DE:83	ColleteClark	MikroTik	6.38.3 (st...	RB SXT 5nD r2	no	30	2d 14:10:19
ether13		E4:8D:8C:71:08:77	DonaldEmbassyUS	MikroTik	6.39.3 (b...	RB SXT 5nD r2	yes	32	2d 14:10:16
ether13		6C:3B:6B:C1:5C:E3	FaroukFnFBldg	MikroTik	6.34.4 (st...	RB SXT 5nD r2	no	53	12:51:16
ether13		E4:8D:8C:55:E5:E9	FloraFauna	MikroTik	6.38 (sta...	RB SXT 5nD r2	yes	36	6d 17:22:27
ether13		6C:3B:6B:B1:EF:61	GeraldMegaCmpn	MikroTik	6.40.3 (st...	RB SXT 5nD r2	no	13	06:05:12
ether13		4C:5E:0C:EA:F9:DD	Gesco	MikroTik	6.40.3 (st...	RB SXT 5nD r2	no	24	09:23:13
ether13		E4:8D:8C:64:75:2F	GoldenGateHotel	MikroTik	6.39.3 (b...	RB SXT 5nD r2	yes	34	12:42:14

179 items

- Using more than 300 MikroTik Devices.
- Network Managed by Dude,
- Wireless Centralized by CapsMan
- User Authenticated by UserMan
- Core Routing, BGP, PPPoE Server, FULL MikroTik. End to End.

SWOS

Software Operating System for Mikrotik Switch

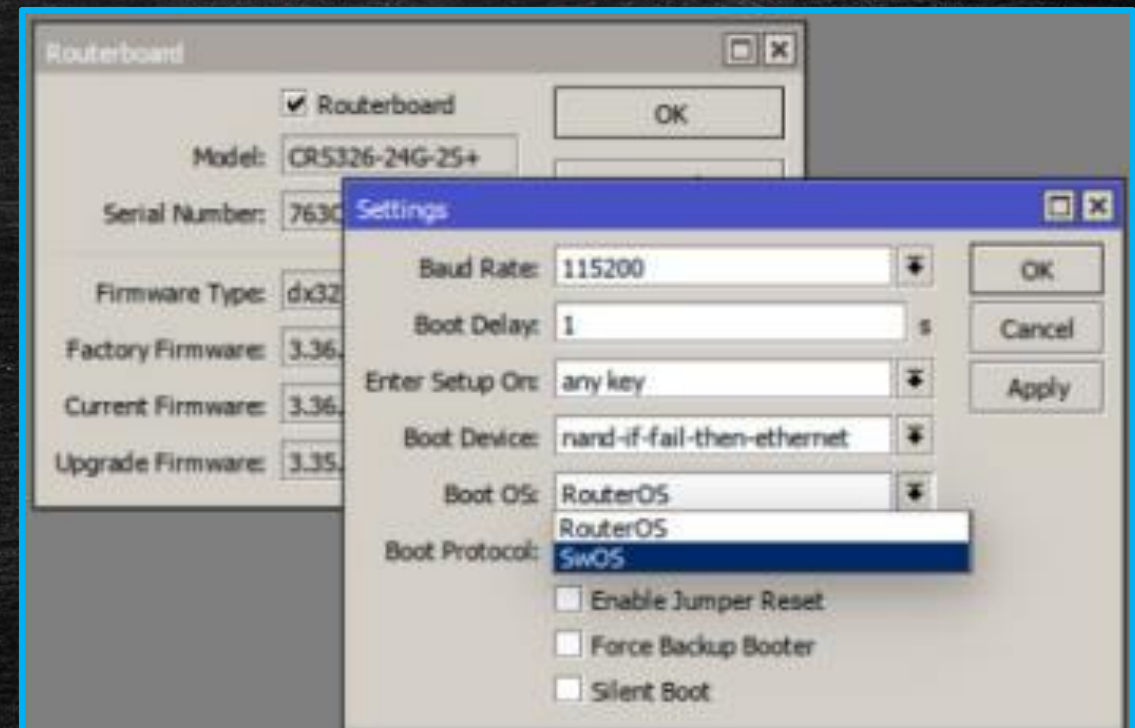
MikroTik Software OS

- MikroTik SWOS
 - MikroTik Switch OS
 - Only for MikroTik Hardware Switch
 - Only Web Based Configuration
 - <http://192.168.88.1>
 - User = admin (without password)
- MikroTik ROS
 - MikroTik Router OS
 - Installed on MikroTik RouterBoard
 - Available For x86 PC and Similar
 - Also For Cloud Hosted Router



MikroTik SWOS

- SWOS Version 1.17
 - RB260GS – RB260GSP
- SWOS Version 2.6
 - Only For CSS Family
 - RB260GS (CSS106-5G-1S)
 - RB260GSP (CSS106-1G-4P-1S)
 - CSS326-24G-2S+
 - CRS326-24G-2S+
 - Dual Boot Option
 - SWOS or RouterOS
 - CRS317-1G-16S+
 - Fiber SFP Switch



MikroTik SWOS

No.	Service	Available
1	Web Configuration	Yes
2	SSH / Telnet / Console	No
3	SNMP	Yes
4	MikroTik Discovery	Yes

SWOS Version 1.17

MikroTik SwOS
Logout

Link
SFP
Forwarding
Statistics
VLAN
VLANs
Static Hosts
Hosts
SNMP
ACL
System

	Port 1	Port 2	Port 3	Port 4	Port 5
Link					
Enabled	☒	☒	☒	☒	☒
Name	Port1	Port2	Port3	Port4	Port5
Link Status	link on	link on	link on	link on	no link
Auto Negotiation	☒	☒	☒	☒	☒
Speed	100	1000	1000	1000	
Full Duplex	yes	yes	yes	yes	no
Flow Control	☒	☒	☒	☐	☒
PoE					
PoE Out		off	on	off	auto
PoE Priority		4	1	2	3
PoE Status	disabled	disabled	powered on	disabled	waiting for load
PoE Current			101mA		
PoE Power			2.364W		

SWOS Version 2.6

MikroTik SwOS Logout							
Link SFP Port Isolation LAG Forwarding RSTP Stats Errors Hist VLAN VLANs Hosts IGMP SNMP ACL System Upgrade							
	Enabled	Name	Link Status	Auto Negotiation	Speed	Full Duplex	Flow Control
Port1	☒	Port1	no link	☒		no	☒
Port2	☒	Port2	no link	☒		no	☒
Port3	☒	Port3	no link	☒		no	☒
Port4	☒	Port4	no link	☒		no	☒
Port5	☒	Port5	no link	☒		no	☒
Port6	☒	Port6	no link	☒		no	☒
Port7	☒	Port7	no link	☒		no	☒
Port8	☒	Port8	no link	☒		no	☒
Port9	☒	Port9	no link	☒		no	☒
Port10	☒	Port10	no link	☒		no	☒
Port11	☒	Port11	no link	☒		no	☒
Port12	☒	Port12	no link	☒		no	☒
Port13	☒	Port13	no link	☒		no	☒
Port14	☒	Port14	no link	☒		no	☒
Port15	☒	Port15	no link	☒		no	☒

VLAN Configurations

SWOS VLAN Configuration Under VLAN and VLANs Menu

Vlan Tab Configuration

SWOS 1.17

	Port1	Port2	Port3	Port4	Port5	SFP
Ingress						
VLAN Mode	optional	enabled	strict	strict	strict	strict
VLAN Receive	any	only tagged	only untagged	only untagged	only untagged	any
Default VLAN ID	1	1	200	300	400	1
Force VLAN ID	☐	☐	☐	☐	☐	☐
Egress						
VLAN Header	leave as is	leave as is	leave as is	leave as is	leave as is	leave as is
						Discard Changes Apply All

Vlan Tab Configuration

- VLAN Menu
 - VLAN Port Configuration
 - VLAN Mode
 - Select VLAN Mode the specific Port
 - Disabled, Optional, Enabled or Strict
 - VLAN Receive
 - Defines the allowed packets
 - Tagged, untagged, or any
 - VLAN ID
 - Setup the default VLAN ID
 - Force VLAN ID to default VLAN ID for any incoming packets
 - VLAN Header
 - To Add, Remove or Leave the VLAN as is.

Vlan Tab Configuration

SWOS 2.6

MikroTik SwOS
Logout

Link
SFP
SFP Status
Port Isolation
LAG
Forwarding
RSTP
Stats
Errors
Hist.
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VLANs
Static Hosts
Hosts
SNMP
ACL
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Upgrade

	VLAN Mode	VLAN Receive	Default VLAN ID	Force VLAN ID
Port1	optional ▾	any ▾	1	☐
Port2	optional ▾	any ▾	1	☐
Port3	optional ▾	any ▾	1	☐
Port4	enabled ▾	only tagged ▾	1	☐
Port5	enabled ▾	only untagged ▾	200	☐
Port6	enabled ▾	any ▾	300	☐
Port7	enabled ▾	only untagged ▾	400	☐
Port8	disabled ▾	any ▾	1	☐
Port9	disabled ▾	any ▾	1	☐
Port10	disabled ▾	any ▾	1	☐

VLANs Tab Configuration

- VLANs MENU
 - VLAN TABLE
 - Specifies certain forwarding rules for packets with vlan-id tag.

VLANs Tab Configuration

SWOS 1.17

MikroTik SwOS Logout

[Link](#)
[SFP](#)
[Forwarding](#)
[Statistics](#)
[VLAN](#)
[VLANs](#)
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[ACL](#)
[System](#)

VLAN ID	Port1	Port2	Port3	Port4	Port5	SFP		
100	not a member	add if missing	always strip	not a member	not a member	not a member	Cut	Insert
300	not a member	add if missing	not a member	always strip	not a member	not a member	Cut	Insert
400	not a member	leave as is	leave as is	leave as is	leave as is	leave as is	Cut	Insert

[Append](#)
[Sort](#)
[Discard Changes](#)
[Apply All](#)

SWOS 2.6

MikroTik SwOS

Logout

Link

SFP

SFP Status

Port Isolation

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VLAN

VLANs

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System

Upgrade

VLAN ID	Port Isolation	Learning	Mirror	Members		
100	☒	☒	☐	☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒	Cut	Insert
300	☒	☒	☐	☒ ☒ ☒ ☐ ☐ ☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Cut	Insert
400	☒	☒	☐	☒ ☒ ☒ ☐ ☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Cut	Insert

Append

Sort

Discard Changes

Apply All

VLAN

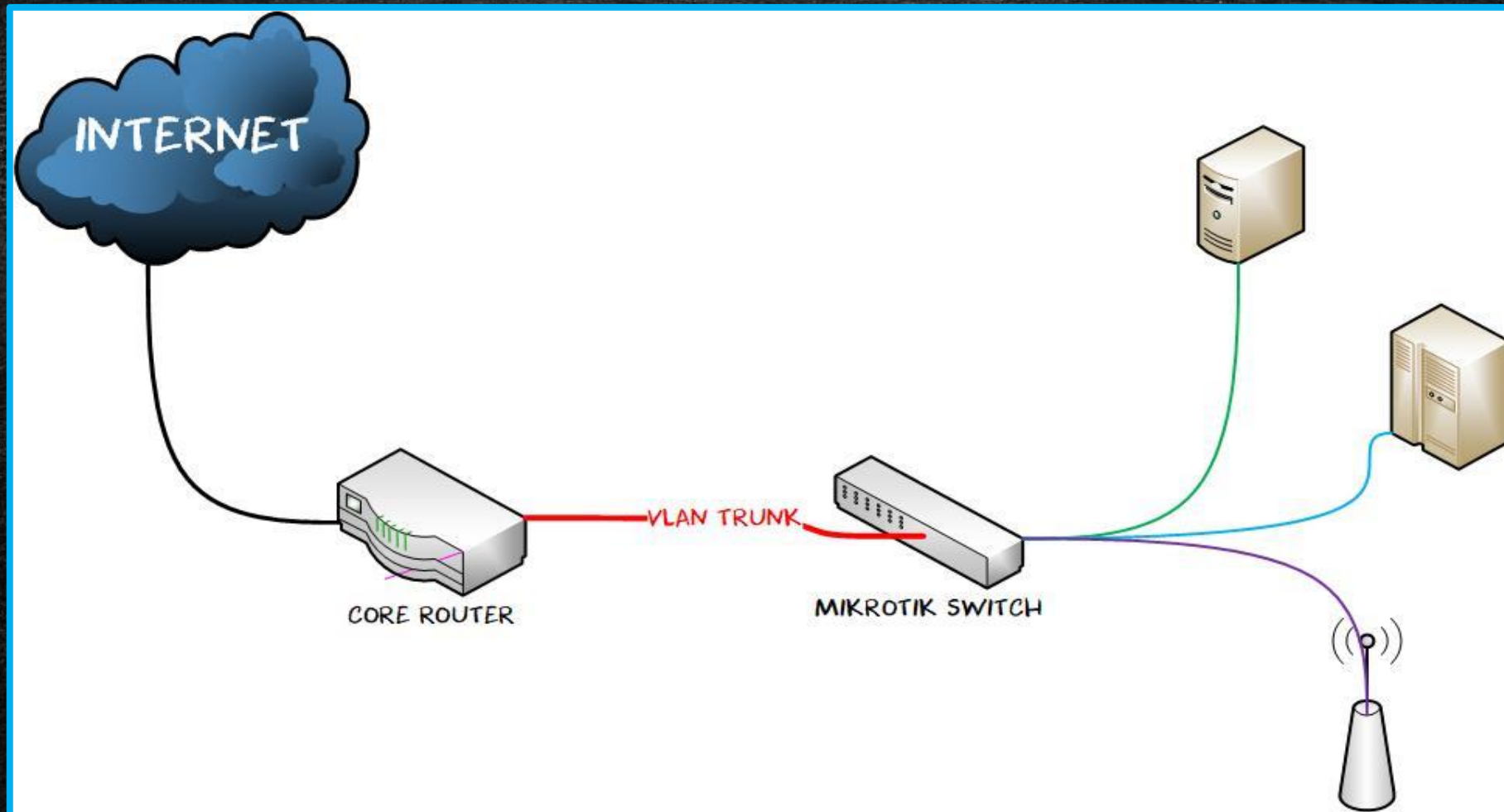
Basic Practice

– Mikrotik Switch for Trunk Port and Edge Port –

VLAN Basic Practice

- We will setup vlan port configuration with three different vlan ID.
- One port as vlan Trunk
- Three more ports as edge port (access port).
- Connection coming from Router Core with VLANs and Trunk configured already.

VLAN Topology



Trunk & Edge Port Setup

SWOS 1.17

Link SFP Forwarding Statistics **VLAN** VLANs Static Hosts Hosts SNMP ACL System

Pending changes

	Port1	Port2	Port3	Port4
Ingress				
VLAN Mode	enabled ▾	strict ▾	strict ▾	strict ▾
VLAN Receive	any ▾	only untagged ▾	only untagged ▾	only untagged ▾
Default VLAN ID	1	10	20	30
Force VLAN ID	☐	☐	☐	☐
Egress	TRUNK	VLAN 10	VLAN 20	VLAN 30
VLAN Header	add if missing ▾	always strip ▾	always strip ▾	always strip ▾

Trunk & Edge Port Setup

SWOS 2.6

MikroTik SwOS Logout

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[System](#)

[Upgrade](#)

	VLAN Mode	VLAN Receive	Default VLAN ID	Force VLAN ID
Port1	optional ▼	any ▼	1	☐
Port2	enabled ▼	only untagged ▼	10	☒
Port3	enabled ▼	only untagged ▼	20	☒
Port4	enabled ▼	only untagged ▼	30	☒
Port5	optional ▼	any ▼	1	☐
Port6	optional ▼	any ▼	1	☐

VLAN Table

SWOS 2.6

MikroTik SwOS

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Port Isolation

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Upgrade

VLAN ID	Port Isolation	Learning	Mirror	IGMP Snooping	Members		
10	☒	☒	☐	☒	☒ ☒ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐		

VLAN Table

SWOS 1.17

192.168.88.1/index.html#vlans

MikroTik SwOS

Link SFP Forwarding Statistics VLAN **VLANs** Static Hosts Hosts SNMP ACL System

VLAN ID	Port1	Port2	Port3	Port4
1	leave as is ▼	leave as is ▼	leave as is ▼	leave as is ▼
10	leave as is ▼	always strip ▼	not a member ▼	not a member ▼
20	leave as is ▼	not a member ▼	always strip ▼	not a member ▼
30	leave as is ▼	not a member ▼	not a member ▼	always strip ▼

TRUNK

MikroTik Switch Advantages

- Cheapest manageable switch
- FULL feature of advanced manageable switch
 - Isolation, Forwarding, Mirror, Vlan, Link Aggregation, RSTP, IGMP, ACL, SNMP, etc.
- Comes with Output POE Port (RB260GSP)
 - Easy to centralize power and control the POE output.
- Help you to Extend Physical Interfaces
 - If your router just have a few Ethernet port, and you need more Ethernet port, you can create trunk port and vlan between your Router and your MikroTik Switch, to get more additional interfaces.
 - Used for specific purposes. Like Hotspot, pppoe, L2 connection etc.

Isolation Port

- Control port forwarding
- Prevent from Broadcast Loop
- Prevent from Unwanted Crossing traffic
 - from port to port.
- Secure Local Network from netcut, Wireshark, reduce unnecessary ARP traffic, etc.
- Latest version of SWOS coming with RSTP menu and Isolation Port menu, but only for CSS version.
 - For the Previous Version (SWOS 1.17) isolation port managed on forwarding menu without RSTP feature.

Isolation Port

- We can also use Isolation Port as Port Grouping.
- Isolation Port WILL NOT BLOCK remote access to the switch it self.
 - To manage remote access, the option available on the system menu.

SWOS 2.6

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Isolation Port

SWOS 1.17

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	Port1	Port2	Port3	Port4	Port5	SFP
Forwarding						
From Port1	☐	☐	☐	☒	☐	☐
From Port2	☐	☐	☐	☒	☐	☐
From Port3	☐	☐	☐	☒	☐	☐
From Port4	☒	☒	☒	☐	☒	☐
From Port5	☐	☐	☐	☒	☐	☐
From SFP	☐	☐	☐	☐	☐	☐



Thank You

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