IPv6 Web GUI

Ethernet Switch

ZyNOS 4.10



Version 4.10 Sep 2013





Purpose

In the old trunk version, we only supported IPv6 configuration of addressing and link-local address using CLI. Now, in the new trunk, we can configure IPv6 addressing, link-local address and DHCPv6 settings via Web GUI. This support note is going to introduce how to configure IPv6 settings through Web GUI.

Features

IPv6 Addressing: IPv6 Addressing provides the following features on the ZyNOS platform.

- 1. Enable / Disable IPv6
- 2. Configuration of an IPv6 Address.
- 3. Configuration of an IPv6 address with EUI-64.
- 4. Configuration of an IPv6 link-local address.

DHCPv6 Relay: Relay agents shall forward messages between client and server. To allow a DHCP client to send a message to a DHCP server that is not attached to the same link, a DHCP relay agent on the client's link will relay messages between the client and server.

DHCPv6 Relay description:

Interface-ID	Optior	n Code : 18
	Length	n : 4
	Data :	slotID(1byte) + PortID(1byte) + vlanID(2bytes)
		(same as zyxel switch dhcpv4 option82, 4 bytes)
Relay Agent	Optior	n Code : 37
Remote-ID	Length	n : n+4
	Data	enterprise-number : 890 (= ZyXEL. 4 bytes, by IANA)
	:	remote-ID : user defined string (n bytes, n <= 64)

Scenario



The client in VLAN10 would like to get its IP address from the server in VLAN20.

Web GUI configuration

<u>VLAN</u>

- 1. Enter the Web GUI (the default IP address: 192.168.1.1)
- 2. Basic setting=> VLAN
- 3. Setup VLAN=> Static VLAN

ZyXEL				
MENU				
Basic Setting	CO VLAN	Status VLAN	Port Setting Private VL	AN Status Static VLA
Advanced Application		VI AN Search by VID		Search
P Application		VEAN Search by Vib		Jeaich
Vanagement				
nanagement	The Number of	of VLAN: 1.		
VLAN	Index	VID	Elapsed Time	Status
Static MAC Forwarding	<u>1</u>	1	0:01:52	Static
Static Multicast Forwarding				
iltering				
nanning Tree Protocol				
andwidth Control				
roadcast Storm Control				
irroring	=			
ink Aggregation				
ort Authentication				
ort Security				
lassifier				
olicy Rule				
lueuing Method				
LAN Stacking				
ulticast				
A				
Source Guard				
op Guard				
LAN Mapping	Change Pages	Previous Next		
aver 2 Protocol Tunneling	T		2	

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- 4. Add VLAN10 and fixed ports 1-9, 11-28 as members of VLAN10.
- 5. Select port 10 as a normal port.

ZyXEL						
MENU	Y					VI AN CO
Basic Setting	inini	Static	VLAN			VLAN Status
Advanced Application			ACTIVE			
IP Application			Name		VLAN10	
Management			VLAN Group I	D	10	
			-		Normal	
VLAN	_		VLAN Type		Private	•
Static MAC Forwarding						
Static Multicast Forwarding		A	ssociation VLA	N LIST		
Spanning Tree Protocol		VLAN10: fixe	d 1-9,11-28			
Bandwidth Control		Port	mal 10	Cont	rol	Tagging
Broadcast Storm Control		*		Eined		Ty Tagging
Mirroring	E		~	Fixed		
Link Aggregation		1	© Normal	Fixed	© Forbidden	Tx Tagging
Port Authentication		2	Normal	Fixed	© Forbidden	🔲 Tx Tagging
Port Security		3	Normal	Fixed	Forbidden	🔲 Tx Tagging
Classifier		4	Normal	Fixed	Forbidden	🔲 Tx Tagging
Policy Rule		5	Normal	Fixed	© Forbidden	🔲 Tx Tagging
Queuing Method		6	Normal	Fixed	Forbidden	🔲 Tx Tagging
VLAN Stacking		7	Normal	Eixed	C Forbidden	Tx Tagging
Multicast		8	Normal	Eived	C Forbidden	Tr Tagging
AAA		0	 Normal 	 Fixed 	Carbiddon	
IP Source Guard		10	 Normal 	Fixed	Forbladen	
Loop Guard		10	Normal	Tixed	U Forbidden	iii Ix lagging
VLAN Mapping	+	11	O Normal	Fixed	C Forbidden	Tx Tagging
Laver 2 Protocol Trinneling		40	100	· · ·	ARX	

6. Add VLAN20 and fixed port 10.

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MENU	Y										
Basic Setting		CO Static	VLAN								VLAN Stat
Advanced Application				ACTIVE	_		7	-			1
IP Application				Name			VL.	AN2	10		
Management			VLA	N Group ID			20				
			_		_	_	0	Nor	mal		•
VLAN	*		VI	LAN Type				NUI Dui	indi		
Static MAC Forwarding							0	Priv	ate		<u></u>
Static Multicast Forwarding		A	ssocia	ation VLAN L	ist						
Filtering											
Spanning Tree Protocol		VLAN20: fi	ked 10)							
Bandwidth Control		Port				Contro	E				Tagging
Broadcast Storm Control		*			No	ormal	-				Tx Tagging
Mirroring	=	1	0	Normal	0	Eivad		0	Forbidden		Ty Tagging
Link Aggregation			0	Numar				0	Fashidden		
Port Authentication		2		Normai	0	Fixed		0	Forbidden		IX Lagging
Port Security		3	۲	Normal	0	Fixed		0	Forbidden		Tx Tagging
Classifier		4	۲	Normal	0	Fixed		0	Forbidden	1000	Tx Tagging
Policy Rule		5	۲	Normal	0	Fixed		0	Forbidden		Tx Tagging
Queuing Method		6	۲	Normal	0	Fixed		0	Forbidden		Tx Tagging
VLAN Stacking		7	0	Normal	0	Eivad		0	Earbidden		Ty Tagging
Multicast				inviniai	0	i ikeu					
AAA		0		Normal	0	Fixed		0	Forbidden		Ix lagging
IP Source Guard		9	۲	Normal	0	Fixed		0	Forbidden		Tx Tagging
Loop Guard		10	0	Normal	۲	Fixed		0	Forbidden		Tx Tagging
VLAN Mapping		11	۲	Normal	0	Fixed		0	Forbidden		Tx Tagging
Laver 2 Protocol Tunneling	*	40	1	•• •	, A			-		laini)	



7. Set up PVID for VLAN10 and VLAN20.

ZyXEL									
MENU Basic Setting		C () VL	AN Port Sett	ting	Subnet B	ased Vlan	Protocol I	Based Vlan	VLAN Status
Advanced Application			GVRP	(m)					
P Application									
Management		port 1-9 port10=), 11-28=> pvi > pvid: 20	d: 10					
VLAN		Port	Ingress Chec	k PVID	GVRP	Acceptable	Frame Type	VLAN Trunking	Isolation
Static MAC Forwarding		*		10		All	-		
Static Multicast Forwarding		1		10		All	-		
Filtering		2		10		All			
Spanning Tree Protocol				10		A II			
Broadcast Storm Control		3		10		All			
Mirroring	-	4		10		All			
Link Aggregation		5		10		All	-		
Port Authentication		6		10		All	-		
Port Security		7		10		ΔΙΙ			
Classifier									
Policy Rule Quaning Mathed		8		10		All			
VI AN Stacking		9		10		All	•		
Multicast		10		20		All	•		
AAA		11		10		All	-		
IP Source Guard		10		10		7 MI			
Loop Guard		12		10		All			
VLAN Mapping	-	13		10		All			

IPv6 Interface

1. Add VLAN10 interface.

ZyXEL					
MENU Basic Setting		ace Setup			
Advanced Application		Interface Type			
IP Application		Interface ID	10		
Management		Interface ID			
System Info General Setup Switch Setup IP Setup Part Setup			Add Cancel		
Interface Setup	Index	Interface Type	Interface ID	Interface	Delete
IPv6			Delete Cancel		

2. Add VLAN20 interface.

ZyXEL					
AENU					
Basic Setting Advanced Application P Application		Interface Type			
Management		Interface ib	20		
System Info			Add Cancel		
General Setup					
Switch Setup					
IP Setup					
Port Setup					
	Indox	Interface Type	Interface ID	Interface	Delete
Interface Setup	muex	meetines the			

3. Enable IPv6 Interface.

ZyXEL				
MENU Basic Setting	IPv6 Configuration			IPv6 Status
Advanced Application	IPv6 GI	lobal Setup	Click Here	
IP Application	IPv6 Inte	erface Setup	Click Here	
Management		sindle betap		
	IDv6 Addrossing	IPv6 Link-Local Address Setup	Click Here	
System Info	IP VO Addressing	IPv6 Global Address Setup	Click Here	
General Setup				
Switch Setup		IPv6 Neighbor Discovery Setup	Click Here	
IP Setup	IDv6 Neighbor Discovery	IDv6 Router Discovery Setun	Click Hara	
Port Setup	IF VO Neighbor Discovery	IPvo Router Discovery Setup		
Interface Setup		IPv6 Prefix Setup	Click Here	
IPv6				
	IPv6 Nei	ghbor Setup	Click Here	
	DHCPv6	Client Setup	Click Here	

ZyXEL					
MENU	Duß Interf	ace Setun	_		IPu6 Configuration
Basic Setting	Te vo miteri	ace Setup		_	IF Vo Configuration
Advanced Application	Interf	ace	VLAN10 -		
P Application	Acti	ve			
Management	Address A	utoconfig			
System Info					
General Setup			Apply	Cancel Clear	
Switch Setup					
IP Setup	Indox	Interfano		Activo	Addroop Autoconfig
Port Setup	muex	interface		Acuve	Address Autocomig
Interface Setup	1	VLAN10		Yes	No
IPv6	2	VLAN20		No	No

ZyXEL 🔵 IPv6 Interface Setup IPv6 Configuration **Basic Setting** Advanced Application Interface VLAN20 💌 **IP** Application Active V Management Address Autoconfig System Info General Setup Apply Cancel Clear Switch Setup IP Setup Index Interface Active Address Autoconfig Port Setup VLAN10 Yes No 1 Interface Setup 2 VLAN20 Yes No IPv6

4. Add IPv6 global address

ZyXEL				
AENU				IDv6 Statu
dvanced Application	IPv6 GI	obal Setup	Click Here	<u>II vo statu</u>
P Application	IPv6 Interface Setup		Click Here	
lanagement		IPv6 Link-Local Address Setup	Click Here	
System Info	IPv6 Addressing	IPv6 Global Address Setup	Click Here	
Seneral Setup Switch Setup		IPv6 Neighbor Discovery Setup	Click Here	
P Setup	IPv6 Neighbor Discovery	IPv6 Router Discovery Setup	Click Here	
nterface Setup		IPv6 Prefix Setup	Click Here	
Pv6	IPv6 Nei	ghbor Setup	Click Here	
,775	DHCPv6	Client Setup	Click Here	



5. Add IPv6 global address for VLAN10.

ZyXEL			
MENU Basic Setting	🔘 IPv6 Global Address	Setup	IPv6 Configuration
Advanced Application	Interface	VLAN10	
P Application	IDv6 Global Address	21001000	
<i>l</i> lanagement	Prefix Length	64	E) E01-04
System Info			_
General Setup		Add Cancel Clear	
Switch Setup		Aud Cancer Clear	
IP Setup			
Port Setup	Index Interface	IPv6 Global Address/Prefix Length	EUI-64 Delete
Interface Setup			
IPv6		Delete Cancel	

6. Add IPv6 global address for VLAN20.

MENU Basic Setting Advanced Application P Application) IPv6	Global Address	Setup		IPv6 C	onfiguration
Advanced Application		Interface				unquiation
P Application		monuoo	VLAN20 -			
	IPv6	Global Address	31001000			EUI-64
Nanagement	Prefix Length		64			
System Info				-		
General Setup			[Add	Cancel Clear		
Switch Setup			[Add	Cancer		
IP Setup						
Port Setup In	idex	Interface	IPv6 Glob	al Address/Prefix Length	EUI-64	Delete
Interface Setup	1	VLAN10		2100::1000/64	No	
IPv6						

7. Add IPv6 link-local address.

ZyXEL				
MENU Basic Setting	() IPv6 Configuration			IPv6 Status
Advanced Application	IPv6 GI	obal Setup	Click Here	
IP Application	IPv6 Inte	erface Setup	Click Here	
Management		IPv6 Link-Local Address Setup	Click Here	
System Info	IPv6 Addressing	IPv6 Global Address Setup	Click Here	
Switch Setup		IPv6 Neighbor Discovery Setup	<u>Click Here</u>	
IP Setup	IDec Maishbas Discourses	IDvC Davidas Disasuras Catus	Oliale Llara	
Port Setup	IPv6 Neighbor Discovery	IPV6 Router Discovery Setup		
Interface Setup		IPv6 Prefix Setup	Click Here	
IPv6	IPv6 Nei	ghbor Setup	Click Here	
	DHCPv6	Client Setup	Click Here	

8. Add IPv6 link-local address for VLAN10.

ZyXEL					
MENU Basic Setting	()IPv6 Lii	nk-Local Ac	dress Setup		IPv6 Configuration
Advanced Application	In	terface	VLAN10 -		
IP Application	Link Lo	cal Address	fe801000		
Management	Defai	ilt Gateway			
System Info					
General Setup				Clear	
Switch Setup			[Appiy] [Cancer]	Clear	
IP Setup					
Port Setup	Index Interl	ace	IPv6 Link-Local Address	IPv6 Default	Gateway
Interface Setup	<u>1</u> VLAN	110			
IPv6	<u>2</u> VLAN	120			



9. Enable management config flag for VLAN10.

ZyXEL				
MENU Basic Setting	IPv6 Configuration	-		IPv6 Status
dvanced Application	IPv6 G	obal Setup	Click Here	
P Application	IPv6 Inte	erface Setup	Click Here	
Nanagement		IPv6 Link-Local Address Setup	<u>Click Here</u>	
System Info	IPv6 Addressing	IPv6 Global Address Setup	Click Here	
General Setup Switch Setup		IPv6 Neighbor Discovery Setup	Click Here	
P Setup Port Setup	IPv6 Neighbor Discovery	IPv6 Router Discovery Setup	Click Here	
nterface Setup		IPv6 Prefix Setup	Click Here	
Pv6	IPv6 Neighbor Setup		Click Here	
	DHCPv6	Client Setup	Click Here	

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	Interface	VLAN10		
IP Application	Elane	🗹 Managed Conf	ig Flag	
Management	riays	Other Config Flag		
System Info	Minimum Interval	200	seconds	
General Setup	Maximum Interval	600	seconds	
Switch Setup	Lifotimo	1900	aacaanda	
IP Setup	Liteunie	1000	seconds	
Port Setup	Suppress			
Interface Setup				
IPv6				
		Appiy	Clear	

200

200

600

600

1800

1800

No

No

VLAN10

VLAN20

М

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1 2 10. Enable DHCPv6 Relay.

ZyXEL			
MENU Basic Setting			
Advanced Application	DUCDUA	Click Llara	
P Application	 DHCPV4	<u>Click Here</u>	
Management	DHCPV0	<u>CIICK Here</u>	
Static Routing			
Policy Routing			
DiffServ			
DHCP			
Load Sharing			
ARP Setup			
п.			

11. Add the IPv6 help address for VLAN10.

ZyXEL						
MENU Basic Setting Advanced		HCPv6 Relay				DHCP
Application IP Application		VID Helper Addres	S	10 3100::1010]	
Static Routing Policy Routing		Options				
DiffServ DHCP VRRP		Add Cancel Clear				
Load Sharing ARP Setup	VID	Helper Address	Interface ID		Remote ID	Delete
			Delete	Cancel		

Verification

Capture the DHCPv6 Relay packets out from the switch to DHCP Server to verify the configuration has been successful, as in the following figure.

Filter:	dhcpvб	Expression Clear Apply Save	
No.	Time Source	Destination	Length Protocol Info
	3 0.00111300 3100::1000	3100::1010	203 DHCPv6 Relay-forw L: 2100::1000 Solicit XID: 0x5f6047 CID: 00010001
	4 0.00117000 3100::1010	3100::1000	251 ICMPv6 Destination Unreachable (Port unreachable)
	5 2.03470000 3100::1000	3100::1010	203 DHCPv6 Relay-forw L: 2100::1000 Solicit XID: 0x5f6047 CID: 00010001
	6 2.03477200 3100::1010	3100::1000	251 ICMPv6 Destination Unreachable (Port unreachable)
	9 6.00008600 3100::1000	3100::1010	203 DHCPv6 Relay-forw L: 2100::1000 Solicit XID: 0x5f6047 CID: 00010001
-1	LO 6.00016000 3100::1010	3100::1000	251 ICMPv6 Destination Unreachable (Port unreachable)
1	13 14.0004110 3100::1000	3100::1010	203 DHCPv6 Relay-forw L: 2100::1000 Solicit XID: 0x5f6047 CID: 00010001
- 1	L4 14.0004830 3100::1010	3100::1000	251 ICMPv6 Destination Unreachable (Port unreachable)
2	24 27.9340290 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xf4748c CID: 00010001180d3b7e3c970e300ea0
3	36 28.9339360 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xf4748c CID: 00010001180d3b7e3c970e300ea0
4	43 30.0011070 3100::1000	3100::1010	203 DHCPv6 Relay-forw L: 2100::1000 solicit XID: 0x5f6047 CID: 00010001
4	4 30.0011730 3100::1010	3100::1000	251 ICMPv6 Destination Unreachable (Port unreachable)
4	15 30.9339600 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xf4748c CID: 00010001180d3b7e3c970e300ea0
5	52 34.9341290 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xf4748c CID: 00010001180d3b7e3c970e300ea0
-	57 42.9344570 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xf4748c CID: 00010001180d3b7e3c970e300ea0
20	09 58.9349830 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xf4748c CID: 00010001180d3b7e3c970e300ea0
21	10 62.0015060 3100::1000	3100::1010	203 DHCPv6 Relay-forw L: 2100::1000 Solicit XID: 0x5f6047 CID: 00010001
21	11 62.0015810 3100::1010	3100::1000	251 ICMPv6 Destination Unreachable (Port unreachable)
21	L4 90.9349470 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xf4748c CID: 00010001180d3b7e3c970e300ea0
28	36 454.936468 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xa0b480 CID: 00010001180d3b7e3c970e300ea0
28	37 455.936131 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xa0b480 CID: 00010001180d3b7e3c970e300ea0
28	38 457.936183 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xa0b480 CID: 00010001180d3b7e3c970e300ea0
28	39 461.936313 fe80::6806:7472:b584:7a09	ff02::1:2	167 DHCPv6 Solicit XID: 0xa0b480 CID: 00010001180d3b7e3c970e300ea0