The Emulation settings on EstiNet simulator module MIFX

MIFX module

The MIFX module is to send and receive packets between simulator and physical network card. This is a communication way for EstiNet simulator and physical network.

The setting steps of MIFX module

1. Select a Router Inferface which will send and receive packets to physical network.



2. Make sure the subnet of physical network card.

[anton@localhost ~]\$ ifconfig ens33 ens33: flags=4163<UP_BROADCAST_RUNNING_MULTICAST>__mtu 1500 inet 192.168.206.129 netmask 255.255.255.0 broadcast 192.168.206.255 inet6 fe80::fceb:cc/c:cb2d:3e5b prefixien 64 scopeid 0x20<link> ether 00:0c:29:62:c0:4b txqueuelen 1000 (Ethernet) RX packets 544142 bytes 41338281 (39.4 MiB) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 527195 bytes 1344091653 (1.2 GiB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

3. Make sure the Gateway IP of physical network.

[anton@localhost ~1\$ ip route default via 192.168.206.2 dev ens33 proto static metric 100 172.17.0.0/16 dev docker0 proto kernel scope link src 172.17.0.1 linkdown 192.168.206.0/24 dev <u>e</u>ns33 proto kernel scope link src 192.168.206.129 metric 100 4. Switch to Edit Parameters state.



5. Double click the Node which will send and receive packets between simulator and physical network.



6. Click the button "Module Editor".

				Router			×
Node ID 2	2 Node Type Router						
Routing	Application	Interface	DNS	Firewall	Virtual Machine	Function Swi	tch
Mode:	Build Routing T	able Entries B	Based on	the Topolo	gy 👻 C.T.(D.N.	
	Automatica Sho Manually S Ed	Ily Generated	l by GUI				
Command	Console				1	Module Editor	ок
							Cancel

7. Add a MIFX module from Module Group.





Connect the module "Interface" <->"MIFX" and "MAC8023".

nformation for sending packets to the	physical network interface:
Interface Name ens33	
ction when receiving packets from th	e physical network interface:
○ Sending packets up to module sta	ick
Sending packets down to module	stack
Action when receiving packets from th	e neighbor module:
✓ Drop the packets form the lower n	nodule stack
	nodule stack

Module Edit

×

8. From tool bar "E-Tools"=> Reassign Subnets' IP Address, to reset the interface IP. To make the same subnet between simulation environment and physical network interface IP. In this sample, the Gateway IP of physical network is "192.168.206.2".

IICTWORK IS	152.100.200.2					
<u>F</u> ile <u>D</u> -Tools	<u>E-Tools</u> <u>R</u> un-Panel <u>P</u> -Tools <u>M</u> isc					
	Configure Simulation Processes	•				
	Configure Network Traffic Applications	►				
Network Node P	Reassign Subnets' IP Addresses					
[LAN & WAN]	Show Each Nodes' Interface Information					
	Set Specific-network Parameters	►				
	Set Specific-interface Parameters	►				
н	Show All Settings of Network Interface Down Time					
	Fix All Existing IPv4 Interfaces' Current IP Address					
	Let All Existing IPv4 Interfaces' IP Address Be Re-assignable					
s s	Fix All Existing IPv6 Interfaces' Current IP Address					
	Let All Existing IPv6 Interfaces' IP Address Be Re-assignable					
	Set the Frequency of Routing Entry Update for Mobile Nodes Running the GOD Daemon	►				
R R	Import a Background Graph					
	✓ Show Wireless-linked Subnets' Color					

	Network Subnet List						
Subnet Index	IPv4 Network Address	IPv6 Network Prefix	Operation	-			
0	1.0.1.0	2000:0:1:1::	Configure				
					Close		

			Network	Subnet	t Setting			×
IPv4	IPv6							
Subnet (Configuration							
This su the defa change	bnet has at le ault gateway i the default g	east a gatewa interface of th ateway interfa	y interface, and is subnet. To ch ace's IP address	the inter ange thi and net	face with I s subnet's mask first	D 1 equipped or IP address and and then press	node 2 is taken as netmask, one has to the "Apply" button.	>
Subnet I	nterfaces							
Node I	Node Type	Interface ID	Interface Name	IPv4	Netmask	Operation		
2	Router	1	eth0	1.0.1.1	24	Configure	Apply	
1	Host	1	eth0	1.0.1.2	24	Configure		
							Close	e

Configure Interface ×
Node ID: 2 Interface ID: 1 Interface Name: eth0
IPv4
Addressing
✓ Apply the Following IP Address Configuration C.T.O.N. Address Assignment
Method: Static - C.T.O.N.
Address Setting
IP 192.168.206.2
Fix the IP address so that it will C.T.O.N. not be overwritten by GUI in the future
Netmask: 24 C.T.O.N.
OK Cancel

10. To make the same subnet between simulation Node and a physical network interface card.

×

Network Subnet Setting

IPv4 Subr	4 I	Pv6						
Thi: the cha	s sub defau inge ti	net has at le ilt gateway i he default ga	ast a gatewa nterface of th ateway interfa	y interface, and is subnet. To ch ace's IP address	the interface with ange this subnet and netmask firs	n ID 1 equi 's IP addre st and ther	pped on node 2 ess and netmas n press the "App	is taken as k, one has to ly" button.
ubr	net In	terfaces						
Noc	de ID	Node Type	Interface ID	Interface Name	IPv4	Netmask	Operation	
	2	Router	1	eth0	192.168.206.2	24	Configure	Apply
	1	Host	1	eth0	1.0.1.2	24	Configure	
4								•
								Close

11. Configure other Node Interface IP which could not be duplicated to physical network IP.

				Network	Subnet Settii	ng		×
1	Pv4	IPv6						
S	Subnet C	onfiguration						
	This subnet has at least a gateway interface, and the interface with ID 1 equipped on node 2 is taken as the default gateway interface of this subnet. To change this subnet's IP address and netmask, one has to change the default gateway interface's IP address and netmask first and then press the "Apply" button.						taken as one has to " button.	
S	Subnet Ir	nterfaces						
	Node ID	Node Type	Interface ID	Interface Name	IPv4	Netmask	Operation	
	2	Router	1	eth0	192.168.206.2	24	Configure	Apply
	1	Host	1	eth0	192.168.206.1	24	Configure	
	•							4
								Close

Configure Interface ×
Node ID: 1 Interface ID: 1 Interface Name: eth0
IPv4
Addressing
Apply the Following IP Address Configuration C.T.O.N.
Method: Static - C.T.O.N.
Address Setting
IP: 192.168.206.100
Fix the IP address so that it will C.T.O.N. not be overwritten by GUI in the future
Netmask: 24 🗘 C.T.O.N.
OK Cancel

12. Switch to "G" state "Generate Configuration File".



13. To execute simulation from tool bar "Run-Panel"=> "Start Simulation".



14. Click mouse right button to "Open Command Console".



15. Use command "ping" to test the network connection status. PS. IP 8.8.8.8 is Google DNS server.

