Use Case Template

Use Case ID	UC-02
Use Case	Sending Frames from a node to another
Use case Description	The goal of this use case is to send frames from node R1 to node R3, travelling through node R2.
Trigger	- To install layer-3 route:- The end user will write a command on the CLI/Terminal: "conf node node_name route sender_P 32 reciever_IP interface_name" - To ping router R3 from R1: "run node R1 ping reciever_IP" - To show ARP table entries: "show node node_name arp"
Primary Actor **Secondary Actor**	The primary actor here is the End User. The secondary actors are: Application, Terminal, network, nodes, interfaces, IP Addresses, MAC Addresses, etc.
Pre-Conditions	- The user must've built a network topology using our TCP/IP stack implementation application. - Layer-3 route installed.
Normal Scenario	1. The User builds a network topology 2. The layer-3 route is installed using a custom command 3. We ping router R3 using router R1 4. The ping packet routes from R1 to R2 and finally to R3 5. The ARP resolution happens on its own, by our Algorithm 6. The API's dump ARP table for each of the nodes with all the information.

Extension points	5a. In step 5, if there has been no topology built by the user:
	    1. Then the system will prompt an error of "No such node exists"
	    2. The user returns to the basic step and builds a topology from scratch
	    3. Use case resumes on step 5 again

Alternate Flow	4a. At step 4, if the user wants to edit the topology he/she built:
	
	    1. They're sent to step 1 and let them make changes
	    2. Then all the steps are followed from the starting
	    3. All the changes are incorporated
	    4. New edited Topology is displayed
	
	1a. The user can exit the application.

Post Conditions	<u>Success end condition</u> The build Topology is identified and displayed, the ping request passes And ARP table for each node is dumped. <u>Failure end condition:</u> End-user can't build the desired topology, so no topology or ARP table is displayed And the further steps couldn't follow.

Special Requirements

1. The supported Operating system to run the application is UNIX/LINUX-based systems.

2. The System should have GTK-3 installed

3. To understand the making of topology, the user should know Graph Modelling

4. The user must know the explicit commands of our exclusive CLI to operate the application.