

Network Design for Security using Protocol Trust Boundary Observations



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<http://info.uh-netlab.org/info/instruction.html>

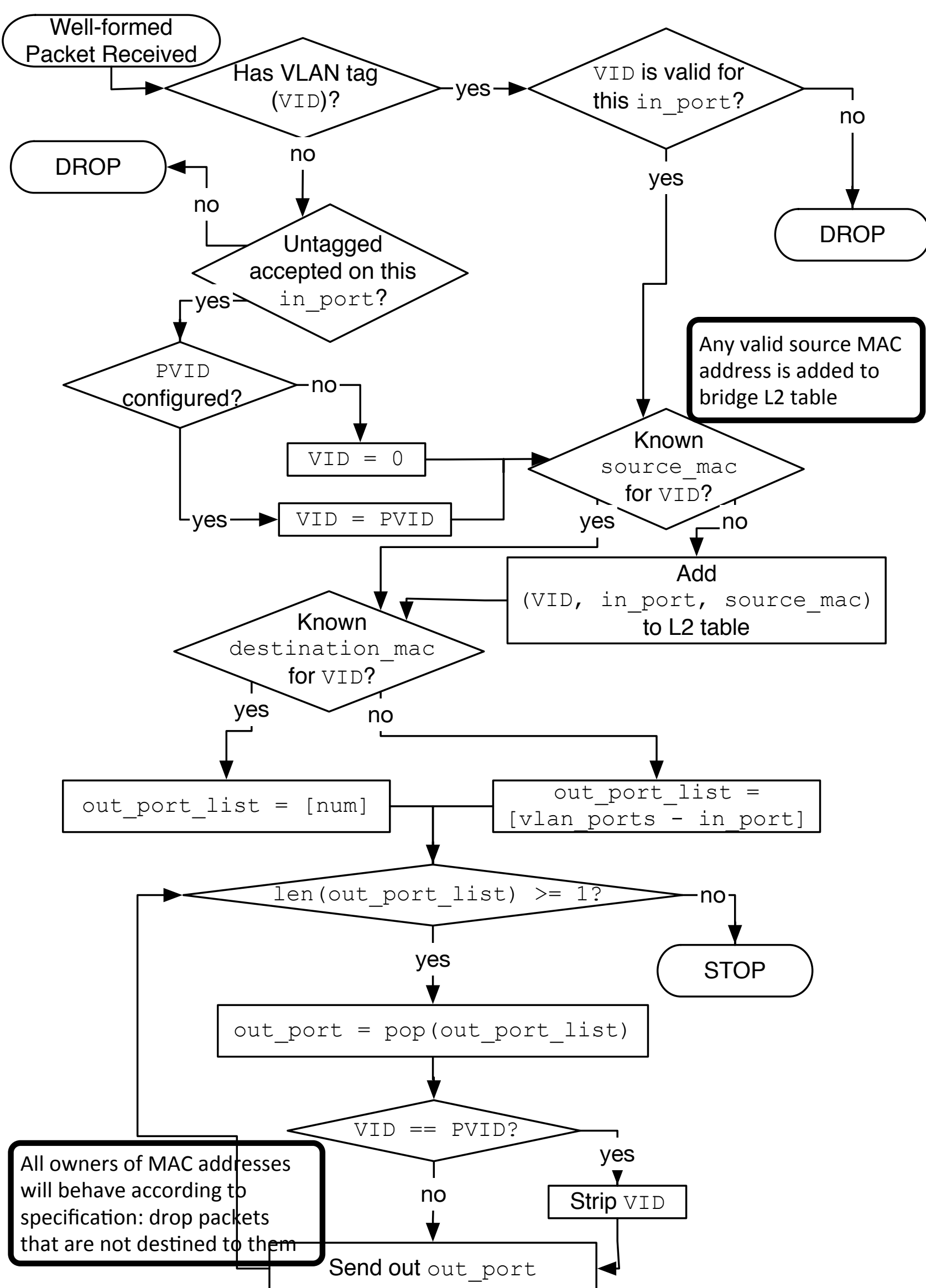
Create novel instructional material to teach network security

network design process

protocol behavior knowledge

trust boundary analysis

hands-on lab experiments, instantaneous feedback, reflections on learnings, and a comprehensive project component for application of the gained knowledge



exercise

Lab Exercises

1

bridge19, port 5			
Source	Dest	Type	VLAN
52:ff:f3:30:3f:d4	aa:bb:cc:dd:ee:95	0x0820	None
96:3e:f4:37:bf:d5	aa:bb:cc:dd:ee:a1	0x8100	1249
a6:eb:d2:8f:bd:bc	aa:bb:cc:dd:ee:7d	0x8100	3255
06:4e:6b:54:73:c0	aa:bb:cc:dd:ee:2c	0x8100	2608

bridge19 Port Config		
Port	Type	Native
0	Access	3496
1	Access	3496
2	Trunk	None
3	Access	3255
4	Access	3255
5	Access	1249
6	Trunk	None
7	Trunk	None

bridge19, port 6			
Source	Dest	Type	VLAN
2e:ee:3e:60:0a:79	aa:bb:cc:dd:ee:f7	0x0820	None
fe:aa:d0:aa:bb:61	aa:bb:cc:dd:ee:12	0x8100	3255
c6:33:a3:c6:70:25	aa:bb:cc:dd:ee:db	0x8100	157

L2 Table

Populate the Layer 2 MAC learning table of the bridge19 when the packets above arrive at the indicated ports

Port	MAC Address	VLAN
1	52:ff:f3:30:3f:d4	1249
2	2e:ee:3e:60:0a:79	0
3	fe:aa:d0:aa:bb:61	3255
4	c6:33:a3:c6:70:25	157

Submit

Networks that are designed with security and trust mechanisms in place will enhance the security posture of our enterprises and the private citizens. Instead of only providing connectivity, networks can add to secure access principles.

The instructional material is completely open source and has a broader impact in attracting and retaining underrepresented minorities and female students to the field by providing equitable access mechanisms along with multiple forms of delivery of the concepts in modern interfaces.

- Open source instructional materials and flexible lab manual design
- Equitable access and learning with multiple forms of education delivery
- Active involvement of education researchers in instructional design and learning sciences

