

## Socket Programming Project – Python HTTP Load Balancer

Name	Major	Primary Objective (90 pts)	Secondary Objectives (10 pts)	Total Score (100 pts)

### Evaluation Rubric – Primary Objective (90 pts possible):

*Load balancer directs traffic to pool of web servers and implements direct server return*

Description	Points	Score
Program determines MAC address of virtual NIC ( <i>not</i> specified on command line or hardwired in program)	<b>10</b>	
Create a raw socket and bind to the virtual NIC	<b>10</b>	
Detect ARP requests from clients (to the virtual NIC <i>only</i> )	<b>20</b>	
Transmit ARP reply back to the requester	<b>10</b>	
Detect HTTP requests from client (IP + TCP packets destined to the virtual IP and virtual port number <i>only</i> )	<b>20</b>	
Select target HTTP server from pool via load-balancing algorithm. (Repeat requests from the same client by IP address are always forwarded to the same target web server)	<b>10</b>	
Transmit modified HTTP request back on network to selected target server	<b>10</b>	
<b>Total (90 pts possible)</b>		

### Evaluation Rubric – Secondary Objectives (10 pts possible):

Description	Points	Score
Load balancer gracefully shuts down upon receiving user CTRL-C	<b>5</b>	
Load balancer supports all specified command-line arguments	<b>5</b>	
<b>Total (10 pts possible)</b>		

**Comments:**