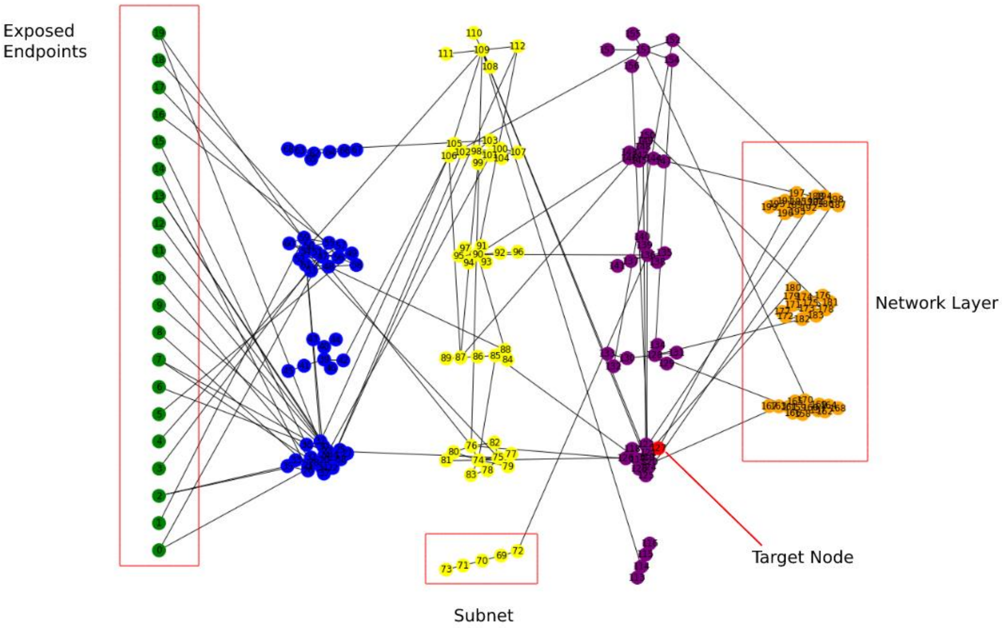
MTD Sim Parameters

Network Parameters

Parameter	Description
Total Nodes	Number of nodes that will be generated for the network
Total Endpoints	The number of nodes that are generated as exposed (i.e. attacker will always find these nodes without compromising any nodes and the connection point will remain static [IP and ports remain static])
Total Subnets	Number of subnets found in network (randomly spread between layers)
Total Layers	Number of layers found in network
Target Layer	Layer number the target node will be on (if targeted attack)

Network Example



Host Parameters

NOTE: Every network node has ONE host instance

Parameter	Description
Operating System	One of the operating systems (selected from constants.py)
OS Version	Version number of the operating system (selected from constants.py)
Host ID	The Node ID of the host on the network graph
Host IP	IP Address of the Host
Users List	List of users assigned to Host (Picked randomly from users setup from data/first-name.txt)
Service Generator	Instance of the ServiceGenerator Class (found in services.py)
Action Manager	Action Manager that Queues actions and questions
K Nearest Neighbour	Used to generate internal network for services (using Watts Strogatz)
Probability Strogatz Rewire	Used to generate internal network for services (using Watts Strogatz)

Service Generator Parameters

(Generates all the service objects for the Host)

Parameter	Description
Services per OS	Number of services generated per OS (determined in constants.py)
Percent cross platform	Percent the service generated is compatible with all platforms (determined in constants.py)
Max Vulnerability Probability	Maximum probability for older version of services having a vulnerability (determined in constants.py)
Vulnerability Patch Mean	The average number of version numbers required for a vulnerability to be patched (determined in constants.py)
Vulnerability Patch Range	Max version range the vulnerability will be patched in (determined in constants.py)
Vulnerability Initial Chance	Chance there will be a vulnerability in the first version of a service (determined in constants.py)

Service Parameters

Parameter	Description
Service Name	Name of the service (decided from service generator)
Service Version	Version of the service (decided from service generator)
Vulnerabilities	The vulnerabilities that are found on the service (decided from service gen)

Vulnerability Parameters

Parameter	Description
Have OS Dependency	Can only be exploited if found on Host that is OS in on self.vuln_os_list
OS List	List of OS that vulnerability can be found on
Complexity	How hard it is to compromise vulnerability (randomly determined with a baseline limit set in constants.py)
Impact	The amount the attacker will gain from compromising vulnerability (randomly generated)

Attacker/Hacker Parameters

Parameter	Description
Attacker Threshold	The number of attacks an attacker will attempt on a single host until giving up