**Intermediate Project Report**

**PROJECT TITLE: Simulate, Detect and Propose Counter Measures for Distributed Denial of Service (DDOS) using Distributed Computing Concepts.**

**COURSE**: MGS 655: Distributed Computing, Professor: Dr. Haimonti Dutta

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**SUMMARY:**

This document summarizes the procedure of Simulation, Detection and Proposal of Counter Measures for Distributed Denial of Service (DDoS) using Distributed Computing Concepts. We are trying to simulate the project in three different ways.

1. Using Peer to Peer Simulator.
2. Using Webserver on Virtual Machines.
3. Using tools available on Internet.

**Novelty of the Project:**

We are doing two distributed computing concepts to implement this project.

1. We are using Peer to Peer Simulator to simulate the attack by sending massive number of queries or by poisoning the network.
2. We are using Webserver for the victim machine and using High end robust server in lab to simulate the attack using master and botnet system.

**Design Issues:**

1. The complexity of using Peer to Peer Simulator to simulate DDoS attacks. We had a word with TA Tamal and we should be doing this over the next couple of weeks.
2. The complexity of creating Webserver on Victim system using WAMP server and having a group of master and Botnet systems running on high speed server systems in the lab. We are working with David Murray and his assistant Stephen to simulate the DDoS and should start work by the end of November.

**Algorithm Description:**

1. While using Peer to Peer Simulator, Chord Protocol is used.
2. While using WAMP server for simulating in Virtual Machines, we might be using evolutionary algorithms like Genetic Algorithm and even Anomaly Detection. This is still under study phase, so not very sure what might be the approach. Clarity can be obtained once we actually simulate the DDoS.

**Software**:

1. Peersim Software (edit here Suvir)
2. Uniformserver, A lightweight WAMP Server solution Software
3. LOIC (Low Orbit Ion Cannon), DDoS attacking tool.

**Empirical Results:**

*This has to be filled in*

**Bibliography:**

1. A survey of Peer-to-Peer Network Security Issues by James Li ‘http://www.cse.wustl.edu/~jain/cse571-07/ftp/p2p/#ddos07’
2. DDoS attachs nad Free DDoS attack tools ‘http://resources.infosecinstitute.com/dos-attacks-free-dos-attacking-tools/’
3. An Evolutionary Approach to Intrusion Detection System using Genetic Algorithm

‘http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.414.887&rep=rep1&type=pdf’

1. <http://www.uniformserver.com/>
2. <http://www.cisco.com/web/about/ac123/ac147/archived_issues/ipj_7-4/dos_attacks.html>