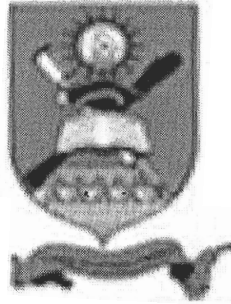


# **NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**



**FACULTY OF APPLIED SCIENCES**

**THE DEVELOPMENT OF A SIMPLE NAT  
TRAVERSAL PROTOCOL (SNTP)**

**BY**

**SABRE Z. DIDI**

**Supervisor: Mr. T. Nyathi**

**Co-Supervisor: Dr. S. B. Mangena**

*A dissertation submitted in partial fulfillment of the requirements for Degree of Master  
of Science in Computer Science*

**August 2009**

## ABSTRACT

This project presents a new method for Network Address Translator (NAT) Traversal in UDP called Simple NAT traversal Protocol (SNTP). Several techniques have been proposed for traversing NAT or firewall boxes in UDP. These techniques can establish UDP communication between hosts behind NATs. However, existing NAT traversal methods, including STUN, TURN and Skype cannot traverse symmetric NAT boxes. Our method uses a new port prediction method and TCP packet for session initiation providing 3-way handshake and dropping the packet before sending UDP packets. The client sends UDP echo pre-coded response that registers itself with the client NAT to the user before communication starts. The call placement results show that our method can be practically implemented for successful NAT traversal for real use.