



SPECIAL COLLECTION

LIBRARY USE ONLY

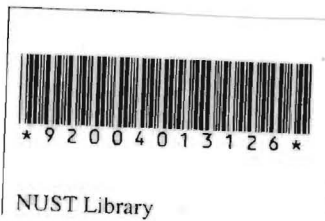
**National University of Science and Technology**  
**Zimbabwe**

**National University of Science and Technology**  
**Faculty of Applied Sciences**  
**Department of Computer Science**

**Research Topic:**

**Design and Implementation of a Data Network Access**

**Auditor**



**PREPARED BY :** T AFADZWA E BIMBA  
**REG NUMBER :** N005 725 M  
**PROGRAMME :** BSc (Honors) COMPUTER SCIENCE  
**SUPERVISOR :** MR T NYATHI

LIBRARY		
NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY		
P.O. BOX 346 BULAWAYO ZIMBABWE		
DATE	ACCESSION	CLASS No
6/11/10	SC 09/200	TK51055 B1M

**AUGUST 2009**

*This Report is submitted in partial fulfillment of the requirements of the Bachelor of Science Honors Degree in Computer Science*

## **ABSTRACT**

The increasing complexity and importance of communication networks has given rise to a steadily high demand for advanced network management tools. Network Management in general consists of two activities: monitoring and controlling. The monitoring part concerns observing and analysing the status and behaviour of the network devices, and is therefore fundamental for network management. Unfortunately the existing network monitoring paradigms have some drawbacks that prevent it from satisfactory performance. Some related problems are that these approaches are characterised by high bandwidth degradation and communication overheads which almost cripples the network. As a result, a huge amount of raw data have to be transferred from network elements to the central management station for further processing, causing heavy traffic, manager overload and long operations delay. In this work the researcher take advantage of some unique features of the Java technology and present a framework for network monitoring that does not involve the use of agents and central managers. Instead the use of a desktop application operating in promiscuous mode is implemented here to gather and manage all the data generated on the network.