

Network management of the college

[Business](#), [Management](#)



AN IT PROPOSAL FOR NETWORK MANAGEMENT OF THE COLLEGE OF COMPUTING AND INFORMATION SCIENCES(MAKERERE UNIVERSITY, UGANDA)

Introduction The College of Computing and Information Sciences (COCIS)

Makerere University in Uganda was established on 13th December 2010. It is made up of the School of Computing and Informatics Technology (CIT) and the East African School of Library and Information Science (EASLIS). COCIS is one of the largest computing and ICT training, information science, research and consultancy colleges in Africa.

It cuts across as a world class College and has maintained its place as an icon of excellence on the continent. It is committed to delivering excellent services in the area of Computing, Library, Records and Information Sciences and attracts both local and international students. COCIS boasts of the state of the art infrastructure including lecture theaters, giant computer laboratories, specialized computer laboratories and a college library.

The established academic staff strength of the College is about 300 teaching staff including 30 visiting and local professors. Over twenty of these staff members hold doctorate, with many others in advanced stages of completing their PhD studies. This merger has seen a pool of resources and facilities like computer laboratories, specialized laboratories, book libraries, journals, cameras, and personnel both administrative and academic staff.

To maximize productivity and efficiency, the college of computing and informatics technology (CoCIS) routinely relies on the network to support its operations ranging from E-learning activities on the E-Learning environment (Muele) to support services offered to students and staff, services like access to wireless internet, access to the internet through

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the Domain(CoCIS domain) The network topology used by the college is an extended star LAN that is used with network devices that filter frames or packets, like switches, and routers.

This topology significantly reduces the traffic on the wires by sending packets only to the wires of the destination. This network is managed by only four people or staff. This network is also being managed using tools like Nagios and solar winds for monitoring devices. Problems identified affecting the network Insufficient resources Under this there is limited human resources which include support staff and network administrators . there are only four network administrators for the whole college of which some of the are incompetent or not always available.

Limited number of Computers, most of the computers in the labs at the college are dwindling in numbers due to technical problems, a few switches and insufficient number of Ethernet cables of which some don't work, one of the servers at Block A has issues and It has really disrupted the network mainly during the access to the domain by the students. Low bandwidth The bandwidth that is provided for the college by the service providers (UTL) is not enough to cater for the students and staff that are the end users of the network.

Delayed Service delivery and network instability There is slow network connectivity in the labs and other areas of work in the college for example these days lecturers rarely access Muele(Makerere E-Learning environment) to upload Notes for students due to this problem. Network intrusion / unauthorized usage There is increased network access by unauthorized users on the Wireless network that increases the network traffic and hence

slowing down of the network which deprives the rightful users who are the students of the college from fully utilizing this resource.

Security issues The College faces security problems which include theft of network devices like cables, mouse, keyboards et cetera. Also to note that much as there are measures for security like cameras in some labs and strategic areas of the buildings, security men for the two blocks; they are not enough **Proposed Solutions to the above mentioned Problems at CoCIS** Network management being a complex and broad component in networking, it can be achieved through a number of networking frameworks.

So we recommend that if this college can use the following approaches, its network management can be eased and improved tremendously. **Fault management** The college network administrator should be able to identify all the network faults like no connection or slow connection , locate where the fault is , restore the service , identify the root cause of the fault and then find a resolution for the problem. This can be done proactively or reactively. Hence the network downtime is minimized highly. **Configuration management**

The network administrators of the college should be able to capture network and system configuration information of all network elements. (local, remote, automated and manual) , Map the network topology, Set up configuration parameters in management agents , track and document what changes are made to the network, where they are made and why they are made , Identify where upgrades need to be made so as to manage the network efficiently as they curb problems of delayed Service delivery and network instability (physical and logical configuration).

Accounting management Since there are limited resources like computers, human resources that is to say administrators of the network , distribution of these resources can be done optimally and fairly on the college so as the network is managed well . This makes the most effective use of the systems available, minimizing the cost of operation. Security Management Security measures should be adopted so that the network is protected against unauthorized users, and physical or electronic sabotage hence mitigating issues of network intrusion.

The security systems should also allow network administrators to control what each authorized student or staff can and cannot do with the system. Other security measure to adopt can be: -Physical security This can be done by providing enough security cameras in all the labs and other areas in the buildings of Block A and Block B, locking the computer labs and mounting servers on cabinets or racks that have locks.

Proposal to the top administrators to purchase enough Bandwidth to suit the growing numbers of users at the college. If there's enough bandwidth provided, it will cater for the slow connections on the network as earlier indicated. Purchase of needed network equipments like extended servers, routers, better tools for monitoring the network should also be done to stabilize the network infrastructure. CONCLUSION

The college of computing and information sciences needs to aim at putting the above mentioned measures into consideration and practice where possible so as to enable full utilization of resources which minimizes redundant resources, gives higher chance to students and staff to access resources on the network without inconveniences, quick service delivery for <https://assignbuster.com/network-management-of-the-college/>

the students and staff will be guaranteed reducing on the downtime experienced on a slower network and also curbing time delays in all the network operations.

References CIS. (n. d) Retrieved from Cis. mak. ac. ug: <http://cis.mak.ac.ug/about-cocis/history-a-facts/the-college.html> Makerere E-learning Environment (n. d) Retrieved from Muele: <http://muele.mak.ac.ug/>