

DESCRIPTION OF NUNet TOPOLOGY AND CONNECTIVITY –INITIAL & CURRENT STATUS

By Aminu Ibrahim <ibrahim@nuc.edu.ng>
2004-11-09

The National Universities Commission (NUC) started to plan an electronic communication network for Nigerian Universities on 16th October 1994, when a Committee was constituted to study the feasibility of introducing Email services.

The Email Committee subsequently presented its report to the first National Workshop on Electronic Networking of Nigerian Universities in October 1995. This workshop resolved on 31st October 1995, that the needs of the University System were far beyond email and that a computer-based Nigerian Universities Network (NUNet) should be established with a full Internet gateway at NUC, Abuja and five POPs to be located selected universities across the country. NUC and the Federal universities constituted their NUNet Committees as a further consequence of this Workshop.

INITIAL NUNET SETUP (Fig a)

At its conception in 1995, the Nigerian Universities Network (NUNet) was designed on the one hand to facilitate dial-up email connectivity between the National Universities Commission, NUC, and all Federally-owned universities and Inter-Universities Centres and between the Nigerian University System (NUC, Federal and State Universities and Inter-Universities Centres and other tertiary Institutions) and the outside world on the other hand using the Internet infrastructure.

To achieve this, an MOU was entered into with the International Centre for Theoretical Physics (ICTP) in 1996, Trieste, Italy to:

1. Assist in registering domain names for the NUC and all the Federal Universities and Inter-universities centre
2. To serve as the Mail eXchanger and relay for these Institutions
3. To train Network and system administrators on Linux system and network administration

Under this arrangement, dial-up UUCP mail servers on Linux boxes were installed at each of the initial 29 participating NUNet institutions and configured to periodically (at least 3 times daily) dial into the UUCP Email-gateway at the National Universities Commission secretariat in Abuja to forward and retrieve respective institutional mails using UUCP's "Store and Forward" mechanism.

The Email-gateway at the NUC on its part was configured to periodically dial into the NUNet UUCP mail server at the ICTP, forwarding and retrieving NUNet mails.

Further deployment and development of NUNet infrastructure and services was stalled from 1996 to 2000 because the sole National carrier announced plans to deploy the same internet infrastructure topology with 5 POPs and a gateway.

The absence of adequate and reliable telecommunication and electricity supply infrastructure in the remote locations where most of these universities are sited meant that while some universities could regularly dial-in to ship in and out their mails, others could not do that so frequently.

Similarly, the lack of Campus LANs and WANs in most universities has meant that NUNet services could not be distributed in the campuses.

CURRENT SETUP (Fig b)

In 2000, when the NUC acquired its own VSAT, the Email-gateways at the NUC and ICTP were reconfigured to relay outgoing and incoming NUNet mails between themselves via the VSAT link.

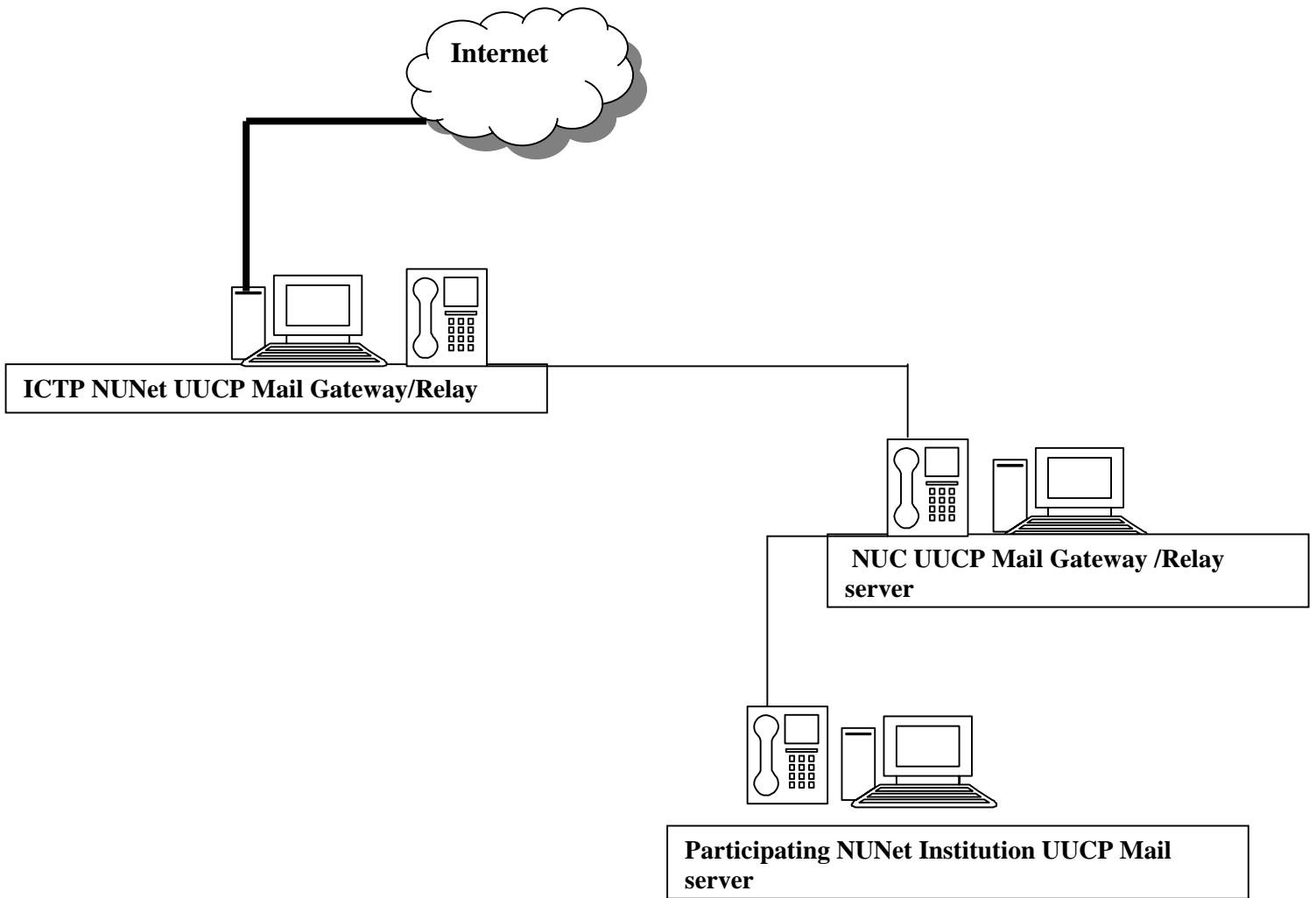
Also in 2000, as part of the preparations for an intervention (Nigerian University System Innovation Project, NUSIP), the World Bank commissioned a review of, and feasibility study on NUNet and the report (attached) provided conceptual plans and topology. The sum of USD 16.2 million (out of the total grant of \$100 m) was approved for the NUNet component of NUSIP, and an initial grant- in the form of a Project Preparation Facility (PPF) was actually released to embark on NUNet planning exercise in NUC and the Federal universities. Intranet Consultants and an International Internet Consultant were appointed, and the first Planning Workshop was held in March 2002. Unfortunately, disagreements arose between the World Bank and the NUC/Federal Ministry Education (which sought to change project components and modalities), and the entire project intervention was cancelled.

Since then, a majority of the federally-owned universities have also deployed their own VSAT earth stations but not many of them locally host their dns, web and SMTP web mail servers.

As much because email was (and remains) the only network service offered by NUNet as because of ignorance, shifting priorities of the NUC as the main driver of the project and the hate-love relationship existing between the NUC and the universities, the deployment of an Internet connection (via VSAT mostly) by a university is regarded as signal to drop out of the network. Accordingly, the institutional user-base of NUNet has dwindled with increasing deployments of VSATs. At the same time, the availability of free web-based mail services and lack of intranet services in the universities has hindered the building of true network communities even within the institutions, so that most campus networks are really not more than cybercafés.

SCHEMATIC REPRESENTATION OF NUNET

a) INITIAL NETWORK TOPOLOGY



b) PRESENT NETWORK TOPOLOGY

