

Current Status of the OAS/RedHUCyT Networking Projects

Saul Hahn, Ph.D.

Organization of American States

Department of Scientific and Technological Affairs

Basic Sciences and Networking Coordinator

1889 F Street, N.W. Washington, D.C. 20006,

shahn@umd5.umd.edu

Introduction

Academic networking in Latin America and the Caribbean (AL&C), as in other parts of the world, has become an essential tool for the advancement of education, science and technology.

Access to the Internet, the largest computer network in the world, with over thirteen million users and more than 1.3 million interconnected computers, is becoming a necessity. The vast amount of information resources available, most of them free makes the connection even more attractive for the countries in our region. Interactive access to libraries, specialized data bases, distributing computing and the potential use of very powerful systems like supercomputers, and remote access to experimental facilities(eg. sophisticated telescopes or advanced research facilities), are of great importance for the development of science and technology. This is becoming so important that countries are being classified according to those that have access to the Internet and those that don't. Many countries are looking at this connectivity as a means to improve their development and thus reduce the gap between the developed and developing worlds.

CUNET and the RedHUCyT Project

With the help of the Organization of American States (OAS), the University of Puerto Rico and CRACIN, the **Caribbean Universities Network project (CUNet)** has been established. It allows e-mail and limited data base access to many

of the Caribbean Countries. It uses commuted telephone lines to access a node located at the University of Puerto Rico. This node is interconnected to Florida, via a fiber optic link, with full Internet access.

CUNET has an estimated 600 users. Jamaica alone having over 250 at the University of the West Indies and the College of Arts, Science and Technology (CAST). Traffic in CUNET has been increasing at a fast rate. Suriname, for example, reports a daily data transfer of 2 Megabytes and about 350 users mostly at the University of Suriname and at the Telecommunications Research Center.

Current operational nodes are : Barbados, Dominican Republic, Grenada, Trinidad and Tobago, Jamaica, Puerto Rico, Saint Lucia, and Suriname. Nodes in a testing stage include: Antigua and Barbuda, Bahamas, Belize, Dominica, Saint Kitts and Nevis, Saint Vincent and the Grenadines.

In 1991 the OAS established the Project "**Hemisphere Wide Inter-University Scientific and Technological Information Network**", **RedHUCyT**, an acronym in Spanish for Red Hemisferica Inter-Universitaria de Informacion Cientifica y Tecnologica.

RedHUCyT has become a leading project in LA&C to help integrate a network in the region. Several meetings and workshops have been co-organized and co-sponsored:

- First Interamerican Networking Workshop, in Rio, co-organized with CNPq, Brazil. More than 130 key networking specialists attended, as well as many International Organizations and agencies.

- II Latin American and Caribbean Workshop, convoked by CONACYT, Mexico, in Guadalajara, December 1992. Twenty countries participated.

-First Latin American School of Networks, Merida, Venezuela. Organized by Universidad de los Andes and CONICYT, Venezuela, August, 1992

-Workshop for Networking Administrators, Lima, Peru. Organized by Red Cientifica Peruana (RCP) and co-sponsored with UNDP, March, 1993

-CRNet , the Costa Rican National Network, Workshop for Costa Rican and Central American participants. Organized by CRNet and cosponsored with the University of Costa Rica, April, 1993.

The III LA&C Networking workshop will be held in Caracas in October of this year.

In addition, and as an integral part of CUNet activities two seminars were co-organized and co-sponsored: The First and Second Caribbean Academic and Scientific Network-Workshop in collaboration with the University of Puerto Rico and CRACIN. They were held in San Juan Puerto Rico, with the participation of most of the Caribbean Countries.

Other major projects sponsored by RedHUCyT currently underway are:

-the CUNet project

- the Central American Project which will become the backbone for these countries through the Central American microwave network, COMTELCA.

Nicaragua is expected to be connected to Costa Rica soon. Panama, already connected to Bitnet through Costa Rica, is expected to connect to the Internet via CRNet . Guatemala and Honduras are considering satellite links to the US through projects MAYANET and Inter-TEGUS, respectively, which are being considered for partial funding by the OAS.

-for the Andean backbone, RedHUCyT is considering the purchase of earth stations and or other equipment for Bolivia, Colombia, Peru and Venezuela, to establish a link with the NSF Internet node in Homestead, Fla, using the PanAmsat PAS-1 satellite. Talks have also been held with Chile to define specific activities to be financed by the OAS.

RedHUCyT has already approved the purchase of equipment including an IBM RISC 6000 for the Ecuadorian Network ECUANet that will help expand service to many more institutions. ECUANet 's infrastructure, provided for by the Banco del Pacifico, is comprised of several satellite dishes located in the cities of Galapagos (where Internet access is being provided to the Charles Darwin Biological Station), Guayaquil, Quito, and Ambato.

- In Argentina, RedHUCyT has a project to help strengthen the node at the Secretaria de Ciencia y Tecnica and their network RECYT (which currently provides access, mostly e-mail, to over 2000 users). A project to interlink , Uruguay and Paraguay (and possibly Brazil and Chile) is under consideration.

Smaller countries like Costa Rica , which just last month became connected to the Internet use a 64Kbps satellite link to the NSF node in Homestead, Florida. They can now access the supercomputing center at the University of Florida with whom

they have established an agreement, or any other facility around the world. The OAS is partially funding this link .

Mexico was the first country in Latin America to be connected to the Internet. This came about through the interest of astronomers who require the continuous transfer of large packets of information and need to coordinate observations in real time with other countries. Using the Morelos satellite, a link was established between the Universidad Nacional Autonoma de Mexico (UNAM), and the National Center for Atmospheric Research in Boulder, Colorado.

Through special funding, the OAS earlier approved an earth station for the National Research Council for Science and Technology of Mexico (CONACyT) which has also a connection to Boulder.

The Instituto Tecnologico de Monterrey also established the first Bitnet node in Latin America. Currently, under the leadership of CONACYT, a project by which many universities will connect is being established in Mexico. It will be built around an E1 (2Mbps) fiber optic link to the US.

The growth of networks in Latin America has had a spectacular development in the past 15 months. Costa Rica, Chile (with two independent 64Kbps links to the US), Ecuador, and Venezuela are some examples of the countries that have obtained Internet access during this period. Brazil improved speed of access considerably and is developing a vast network within the country.

Argentina has limited access to the Internet through a 19.6 Kbps established link shared with the Ministry of Foreign Relations, to the University of Maryland in the US. Other projects are underway .

Besides the Internet, many other networks have recently been established in LA&C. They use less expensive technologies, based on personal computers and specialized communication programs (UUCP, Fidonet), which provide good e-mail access to other networks including Internet. A good example, is the Red Cientifica Peruana in Peru (RCP) which in one year has had a very impressive growth and is expected to connect soon to the Internet.

The RedHUCyT project has established coordination with other leading agencies in relation to major networking efforts, including agencies from the United Nations such as UNEP and UNDP. Particular close collaboration has been established with the National Science Foundation (NSF).