



ISOC PILLAR EDUCATION

Since its inception, the Internet Society (ISOC) has played a leading role in transferring network technology through education. In fact, ISOC spearheaded one of the Internet's principal training efforts and, through its education initiatives, has contributed significantly to the creation of national and regional networks around the world. Moreover, working in collaboration with numerous international partners and sponsors, ISOC's education programmes have catalysed the deployment of computer networks throughout the developing world.

ISOC's train-the-trainer strategy—wherein students from previous workshops teach subsequent education programmes—helps foster sustainable regional training mechanisms and promotes a culture of collegiality among network operators and engineers. The resulting collaboration facilitates a human network of competent engineers and system administrators who cooperate technically, thereby helping us achieve our goal of developing stable international networks.

Funding for these efforts was provided by ISOC organisation members as well as ISOC's Education Platinum Sponsors: Qualys and the Swedish International Development Coordination Agency.

ISOC-SUPPORTED ACTIVITIES

AIT Multicast Workshop: Held by the Asian Institute of Technology in Pathumtani, Thailand (18–20 May 2003)

ISOC provided funding for the Network Startup Resource Centre (NSRC) to pay costs associated with shipping routing equipment to a multicast workshop at the Internetworking Research Laboratory of the Asian Institute of Technology. Workshop participants were network engineers from education and research networks in the Asia-Pacific region. Students learned to engineer multicast into their networks and successfully facilitated multicast throughout the Thai research network. The curriculum was modeled on a multicast workshop taught at the University of Oregon for the Internet2 community in June 2002.

African Network Operators Group (AfNOG) 2003: One-week technical workshop in Kampala, Uganda (9–13 June 2003)

The Africa Network Operators' Group (AfNOG) Workshop offers advanced training to operators of existing Internet service providers (ISPs) in Africa, who are successfully developing and enhancing a national Internet with regional and international connectivity. In 2003, 43 participants from 18 African countries attended the workshop, and 84 attended the AfNOG and African Network Information Centre (AfriNIC) meetings. The five-day training workshop was followed by the AfNOG 2003 meeting, consisting of a variety of short, technical presentations and interactive discussions.

AfNOG 2003 also saw the introduction of a new workshop on country-code

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top-level-domain distributed operations. Thanks to the workshop, participants are ready to develop and maintain scalable services and routing networks in their countries. They were also provided with sufficient training material to enable them to train other technical professionals in their community. Conference participants were also prepared with the skills to develop and maintain large networked systems in their home countries. And they'll train the trainers who carry technologies further into the emerging networks.

Many of the African instructors at AfNOG 2003 were participants in the annual INET/NTW educational workshops organised by the Internet Society and the NSRC from 1993 to 2000. This demonstrates major progress toward fulfilling the goal shared by AfNOG, ISOC, and the NSRC to train a critical mass of professionals in network infrastructure and services, who go on to teach others in their home country and region what they have learned in the educational workshops. Funding was provided by the Swedish International Development Cooperation Agency as well as by ISOC/PIR (www.afnog.org).

La Fundación Escuela Latinoamericana de Redes (EsLaRed) and the Internet Workshop for Latin America and the Caribbean (WALC): Held in Merida, Venezuela (20–24 October 2003)

Since 1992, the Latin American Networking School (Escuela Latinoamericana de Redes, EsLaRed) has been conducting hands-on technical training for engineers and network professionals in Brazil, the Dominican Republic, Mexico, and Venezuela. In 2003 the institution's annual event (WALC) was on the verge of being suspended due to lack of funding. Financial support by ISOC/PIR prompted InfoDev of the World Bank to provide

additional funding to make the event possible. ISOC's support has been crucial in obtaining support in the form of book and equipment donations, which have greatly enhanced WALC training.

In 2003 the Network Startup Resource Centre (NSRC) provided technical assistance for the routing track at WALC 2003 by providing a full routing kit that is on loan to the NSRC from Cisco Systems, as well as running a virtual lab at the University of Oregon for participants in the routing track. The NSRC also facilitated donations of technical reference books from Addison-Wesley, Cisco Press, O'Reilly and Associates, and Prentice Hall for workshop participants and paid the shipping costs of getting the books to Venezuela.

ISOC Launches Workshop Resource Centre

In February 2004 the Internet Society launched its Workshop Resource Centre (WRC), a Web-based portal supporting organisers of network technology workshops worldwide. The WRC serves as a repository for sharing multilingual network training materials as well as a range of planning tools and information for trainers on setting up and organising workshops. It also provides access to a directory of trainers and lists of their competences and encourages interaction among members of the training community (ws.edu.isoc.org).

The Workshop Resource Centre highlights ISOC's commitment to sustainable Internet technology education initiatives. It not only allows ISOC to bring the education materials used in these programmes to a much wider audience than was previously possible but also provides a single source of valuable resources and tools for trainers and workshop organisers.

Development of the ISOC Workshop Resource Centre was made possible thanks to sponsorship by Qualys Inc. (www.qualys.com) as well as support from the Public Interest Registry (www.pir.org). Specific features of the ISOC Workshop Resource Centre enable users to:



Photo courtesy of Philip Hazel

- Upload and download materials for network training workshops
- Find tools and checklists to plan education programmes
- Search for potential workshop instructors
- Review archived presentations and teaching materials from various events around the world
- Participate in online planning discussions for upcoming events
- Obtain peer review for lab exercises and curricula
- Locate sources for lab equipment and technical books

Technical development of the ISOC Workshop Resource Centre was carried out by a team from the Network Startup Resource Centre (www.nsrc.org) at the University of Oregon. Materials come from courses and instructors around the globe and are updated regularly.

Southeast Asia Regional Training Centre

The Asia Institute of Technology (AIT) in Bangkok has proposed to establish a regional training centre. In collaboration with AIT and the NSRC, ISOC's educational team is assisting with development of the concept and working to strengthen regional collaboration. The NSRC has provided a small library of technical reference books and some networking equipment.

South Asia Network Operators Group (SANOG), SANOG III: 15–22 January 2004, Bangalore, India

SANOG offers a regional forum to discuss operational issues and provides a regional training mechanism for data operators in the South Asia region, including Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. ISOC provided funding to support the January 2004 training workshop organised by SANOG in Bangalore, India. The funding enabled participants from several countries to participate in the two workshop tracks. ISOC also helped to pay the cost of shipping technical books that were sent for workshop participants by the Network Startup Resource Centre in cooperation with Cisco Press and O'Reilly & Associates (www.sanog.org).

ISOC Supports NSRC Workshops in Ecuador

ISOC provided support for the shipping of workshop routing kits and donated books for a series of workshops that the NSRC conducted in Ecuador with the nascent R&E network. With support from ISOC, the National Science Foundation, and Cisco Systems, the NSRC provided technical assistance and hands-on training for the Consorcio Ecuatoriano para el Desarrollo de Internet Avanzado (CEDIA) and the Fundación para la

Ciencia y la Tecnología (FUNDACYT) to help develop Ecuador's national research and education network.

The Internet Society's educational programmes contribute significantly to the proliferation and diffusion of networks in developing economies by helping local network engineers establish initial Internet connections and networks in their respective countries. ISOC plans to build on that foundation to enhance its programmes for and its contributions to today's Internet.

TUTORIALS AT WSIS

Two World Summit on the Information Society workshops took place in December 2003. "The Internet: How It Works, Why It Works, Who Makes It Work" offered insight into how the multiple facets of the Internet have evolved by means of participation by the technical community, the business community, civil society, governments, and academia, among others. Participants learned more about the factors that contributed to the success of the Internet, including the transparent and inclusive way in which it was developed. The workshop also offered insights into such organisations as ICANN as well as the role of ccTLDs, gTLDs, and RIRs in relation to the Domain Name System. Speakers discussed the work of the technical community, such as the IETF, and the important work of such organisations as ISOC. The workshop also brought to light how all interested parties, including governments, can and do participate in some of these organisations, and how decisions are reached.

"The New Internet (IPv6) Workshop" was introduced by Rosa Delgado and successfully raised awareness of IPv6 and educated WSIS stakeholders—including nonprofit organisations and

commercial entities—on the IPv6 infrastructure. Speakers discussed various aspects of IPv6—which offers virtually unlimited address space, increased quality of service support, and embedded Internet protocol security (www.isoc.org/isoc/conferences/wsis).

ISOC supports both the WSIS process and mutual efforts to enhance IPv6 awareness, to build expertise and consultation activities in different geographic regions, and to develop technical and public policy.

In the coming year, ISOC plans to continue assisting engineers, Internet service providers, trainers, and network operators in the less-connected parts of the world by expanding support for its tremendously successful regional initiatives. In collaboration with its many international partners, ISOC will make available and transfer the necessary tools, technology, information, and training necessary for an increase in connectivity, for strengthening Internet networking operations, and for building mechanisms for the continued successful global development of the Internet.