Notes for people interested in setting up and running APC nodes

Version 1st March 89

This documented is intended to provide further information for people interested in setting up APC nodes in their own country. It is subject to constant revision so please request the most up to date version from Mitra (gn:mitra).

Summary

For the past 3 years there have been growing networks designed to provide to the peace, environment, human rights and development movements the same quality of communications as that available to governements, military and multi-nationals.

By the end of 1988 the Institute for Global Communications (EcoNet, PeaceNet) and GreenNet had linked their networks into what has become the model for the Association for Progressive Communications (APC) i.e. independant networks running nearly identical software and linking their information resources to provide an international information service with local support. Our slogan "Dial Locally, Act Globally" reflects this.

The most important things to understand from this document are the scale of the project you are considering undertaking and the level of support you can expect from the APC. We are totally committed to seeing a service available to progressive groups that is every bit as good as any of the commercial alternatives and what is more, available at considerably less cost to them. This entails each node in a certain level of commitment. The existing nodes have made a substantial and continuing commitment to support new nodes in their efforts to achieve this level of service.

Size of commitment

The experience of the progressive movement with computer communications has been mixed, in particular there have been a number of not very professional attempts to set up bulletin boards or small networks that have led to some dissillusionment within the movement with the technology. We believe that it is crucial both to the success of these movements and to their uptake of the technology that the services offered must be reliable, easy to use, comprehensive, well supported and inexpensive.

Financial

To build a worthwhile service will take a significant financial investment. Our current estimates for the cost of aquiring the neccessary equipment and running it for a year work out to around US$90,000, about half of this would be typical staff costs, which will of course depend on the local situation. A detailed break-down of the costs and options is included in this document.

Support requirements

The other main requirement of a communications service is a high degree of support. Many, if not the majority, of the users of the service are going to be

inexperienced with using computers or communications and are going to need a lot of hand-holding. For the service to run effectively there needs to be a phone number that they can call at most times (including evenings) to get help. Other work in running the network includes handling new users, sending invoices, recording payments etc etc. Do not underestimate this, at GreenNet we have someone spending 2 days a week handling purely the administration requirements for 600 users.

The other main staffing requirement is outreach. No matter how convinced you are of the benefits of computer communications, it is going to take a lot of work to convince enough organisations and individuals in your country to make the service self sufficient. We have found that this means doing a lot of demonstrations at the office, attending a lot of conferences and meetings and building links with the key organisations. Of course one advantage of working with the APC on this is that the other nodes will publicise your node to their users, who will encourage their branches in your country and the people they work with in that region to get online with you. This will probably be the main source of users for a new system in its first few months.

Technical

This section is to cover exactly what hardware and software is needed to run a node, some of the items are optional but you will probably find that most things are needed in the long run.

Brands

Most of the items are listed with a brand that we have found works. Wherever possible we try and use the same hardware across the network because this makes support that much easier. Please talk to Scott, Steve or Mitra before making any purchasing decisions.

Machine - hardware software, inc budget

This is an outline budget for an APC system, note that it is a bit out of date, please contact Mitra (gn:mitra) or Steve Fram (igc:steve) for an up to date version.

Basic equipment (required) :

IBM compatible 80386 based microcomputer (AT bus). Should include monitor, display adapter, and a 2 port serial I/O board. Mylex motherboards are reliable, standard, and inexpensive. $2500.00

Disk Controller : SCSI format.

(packaged with some 80386 computers). There are a myriad of compatibility problems associated with disks, disk formats, disk controllers, and UNIX releases. We are in the process of switching to SCSI (mar 89) to enable overlapped seeks and integrated tape-controllers. $200.00

4 Megabytes of static RAM. $2000.00

At least 300 megabytes of hard disk storage. $2000.00

Sixteen port serial I/O card. We are experimenting with a number of cards. Anvil Stallion is high performance, and promises to be reliable. $1200.00

Backup tape unit. Everex Stream 60 is reliable, and holds about 120MB on a 600 ft. cartridge tape. $800.00

Software (required)

UNIX operating system. IGC has been running Microport UNIX. ISO 386/ix and Bell Technologies V/386 are also available and it is possible that we may switch to a different system so ask first. $600.00

APC/UNIX conferencing/mail/database software. free; released by APC

Hardware (optional)

X25 communications card and software. Provides access through international and national Public Data Networks. Adax Inc., in Berkeley, CA (USA) supplies the card. $800.00

Local dial modems 2400 baud MNP, $300.00 each

Note that you will need either an X.25 card and/or local dial modems.

Terminals, as needed for staff use. $400.00 each

Error correcting modem for exchanging bulk conference and mail data, "Trailblazer" modems from Telebit provide about 9600 BPS throughput on clean lines; less on noisy lines. They cost as little as $600.00 each. $600.00

Additional hard disk storage. $9.00 per Megabyte

Additional Memory, recommended 4mbytes $2000.00

Laser printer, to print large numbers of invoices and also for producing publicity material $3000.00

Optional Software

INFORMIX SQL Database Software, The APC software provides a user interface for database queries. $3000.00

Lines

X.25 lines in most countries the costs to the individual users. They also make it easier for users in other countries to access you and may be the best way to link to other nodes. The cost and minimum monthly commitment varies substantially from country to country and may depend on the distance of the node from the PTT's nearest access point. Typical costs for installation and one years rental charges $8000

Phone lines may also be appropriate for local users to call directly and for developing country users to access you. Again these costs can vary widely, so we have estimated $500 for installation and one year's rental per line.

Totals

Basic Hardware $8700

Required Software $600

Optional Hardware (Say 4 terminals and 8 modems)	$1100 - $9200
Optional Software	$0 - $3000
Lines (Say 8 direct-dial lines)	$500 - $12000
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Grand Total	$10900 - $33500

Inter-node transfer

One of the main features of the network is the parallel conferencing and inter-system electronic mail. We have about 400 networked conferences on GreenNet , (IGC have about 1000 but this includes a lot of academic or private conferences). These are updated automatically from each other about every 30 minutes, (more when both US and England are awake - less at other times). At the same times we exchange mail between the systems.

There are a number of methods that can be used to effect this transfer, at the moment we use X.25 but have just completed an investigation of other methods, of linking machines, in particular we are experimenting with the use of spare satellite bandwidth. The network is designed so that we can use just about any method to make the link. It is expected that for most nodes the cheapest method will be high speed (Telebit) direct dial links.

We have now agreed to pool the costs of data transfer, this will help new nodes with the costs of transferring conferences. These conferences are a big marketing tool for the network and are an invaluable means of mobilizing people world-wide.

Software Licence

The software that makes up the APC distribution comes in three main types. Standard packages, like Unix and Informix which you will need to purchase, public domain tools, and code written by programmers at one of the networks. This latter is what makes the APC software work, several person-years have gone into it's development and it is continuously being enhanced. This software is not in the public domain, nor is it sold. It is licensed, free of charge, to networks becoming part of the APC network.

APC

What exactly is the Association for Progressive Communications or APC? In effect it is an association of nodes, supporting each other in building communications for groups in the broad area of environment, peace, human rights and development.

Organisation

At the moment the APC isn't formalized into an organisation. At a meeting between IGC and GN in San Francisco in October 88 it was felt that we should hold off formalizing the organisation until there were more than just GN and IGC with experience of running a network. There will be a meeting in Summer 89 to formalize whatever organisation those networks, which are then operational,

think is appropriate, to decide what activities are appropriate to that organisation and to agree a budget.

Joint facilities

Until that period the existing networks, have agreed to commit at least 10% of their budget to supporting new networks and to joint activities. Including the following.

Data Transfer

In order to minimize the total cost and to spread the cost of data distribution more evenly across the total user-base we have agreed to pool the costs of transferring conferences between nodes, for instance we might find it most effective for GN (England) to call IGC (USA) by X.25, for IGC to call Brazil via Packet Radio satellite and for Sweden to make a direct Telebit call to London. However the expensive link across the Atlantic shouldn't be paid for only by GreenNet but shared between all the nodes.

A project at IGC is investigating newer and cheaper technologies for linking the nodes - including lobbying for the free use of spare satellite time.

Note that for administrative efficiency all data transfer costs will be paid by APC with each node passing back to APC the revenue generated by charging for the mail component of this.

Gateways

The philosophy of the networks includes providing links to other networks, commercial and academic. These links are made both by direct links between our nodes and other nodes and by using the services of third-party gateway servers. These links are made in the most economic way from a network perspective. At the moment GN links into GeoNet, Telecom Gold and Greenlink while IGC calls Dasnet and thence to most other commercial networks. Both IGC and GN call Usenet systems in their own countries. Both GN and IGC also call Telex and Fax services.

Joint technical development

The APC software represents a major investment in programmer-time. There is a continual effort to improve it and keep it meeting the ever expanding demands of the users. This work is pooled, at present being carried out by one full-time person at IGC (shared between Steve and Scott) and half-time by Jeremy at GN.

Major development work at present includes:

Porting the software to the 386

The biggest task this year has been porting the software from the Plexus to IBM compatible 386 machines running Unix. This work gives both a speed up to IGC and GN and, more importantly brings the cost of new nodes down substantially.

Databases

The APC software supports conferences and electronic mail, recently a database interface has been produced which enables the APC node to support

a relational database in a way that allows the user to make powerful queries of the database without having to understand the complexities of database query languages. This project was held up to enable the software port to happen but will be made available to the users very soon.

Languages

A major project being anticipated is to change the software to support multiple languages, at the moment we are seeking funds, either from the Canadian governement or the EEC to enable this work to happen.

Administrative tools

The next major project is to automate the administrative tools. At the moment the support of users requires a considerable understanding of some of the more arcane aspects of Unix., this is handled by the support of new nodes by staff at existing ones. As we move towards having more and more nodes being started, and since we do not anticipate these new nodes having Unix experts on staff, it is essential to produce tools that enable this work to be done by non-technical staff.

General and technical support

At the moment there is a need to help new nodes to succeed, IGC and GN have agreed that Mitra should work full-time until the meeting in Summer 89 on support of emerging nodes.

Fund-raising

Although none of the networks are financial well-off there is a potential to raise funds for new nodes. The APC is working to try and raise funds for the whole network. Most of this work is happening at IGC to try and raise money in the US where there is most grant-money available. It is hoped in particular to raise money for the common APC functions and for helping new nodes in developing countries.

Constitution

There is a constitution drawn up to establish a certain set of mutual agreements, this is attached below or can be provided on request. the intention of the constitution is to allow each node to rely on the others for certain things and therefore allow each node to in effect "market" their node on the basis of its international connections.

Although the consitution has been agreed in principle by IGC, GN, Web and PNS (see below) it is still open to modification. In particular it is anticipated that it will be formally adopted at the Summer 89 meeting.

Some key parts of the constitution are:

Independance

Each node operates independantly within the agreed principles, sets its own policy and priorities.

Financial contribution

Each node will contribute a proportion of its net turnover (income and grants less X25 access costs) to the joint activities. At the moment IGC and GN have agreed to contribute at least 10% until the Summer meeting.

Non-profit

Each node will be a non-profit entity, although there is nothing to prevent the node doing commercial work to cross-subsidise the non-commercial users. In fact the restrictions on the software being sold to commercial networks is partly intended to allow nodes to use commercial work for this purpose.

Sites

Following is a list of nodes and intended nodes, this list is being extended all the time.

Existing Sites

Sites in operation at the moment are:

GreenNet, England

About 600 users, 50% in England, 50% mostly in the rest of Europe. Operational since October 85, initially on GeoNet but moving onto its own Plexus in November 87. Currently growing at about 15% per month. Contact: Viv Kendon (gn:viv) or Jeremy Mortimer (gn:jeremy)

Institute for Global Communications (EcoNet and PeaceNet) USA

About 3000 users, mostly in the USA. Adding about 100 users per month. Contact Geoff Sears (igc:gsears), Mark Graham (igc:mgraham) or Bill Leland (igc:bleland)

First phase - by Feb 89

The next few nodes should be operational early in 1989

Web, Canada

The Web has been running for about two years with about 200 users. It currently operates on Picospan software under Xenix but is transferring to the APC software March 89 in order to be able to share conferences with the rest of the nodes. Contact: Mike Jensen or Rory O'Brian (igc:web)

PeaceNet Sweden

A new network, formed by people from SPAS & FOR, the two main Swedish Peace groups. Contact: Jim Walch or Greger Hatt (gn:pns), should be online April or May 89.

Alternex, Brazil

A project of IBASE, an NGO documentation centre, should be online mid-April 89. Contact Carlos Afonso (igc:ibase)

Second Phase

There is also discussion at various stages with organisations in the following countries.

Kenya
Nicaragua
Australia
Mexico
Philippines

Enclosures

Some or all of the following should be included with this pack, if you want any of these in particular then email or call Mitra.

History of IGC and GreenNet
Technical Notes on the APC networks
List of APC conferences
List of some of the organisations on APC networks