Host Accounting and Administrative Procedures

A plan must be formulated and agreed upon for the development of a
Host accounting system in the ARPA Network. Such a plan should take
into consideration both current Host accounting practices and new
technical contributions. This document is an early attempt to
identify the issues concerning Host accounting. It is being
distributed as a working document on which further discussions may be
based and, as such, does not represent, nor is intended to represent,
a position on any of these issues.

The method of network operation and the potential for its growth are
relevant factors to be considered in formulating a plan for Host
accounting. For example, the answers to the following questions
provide a useful background for reference:

   1. Who or what operates the Network?

   2. What is the criteria upon which new sites should be
       incorporated into the Network?

   3. What regulations, if any, apply to the connection of non-ARPA
       sites?

   4. What is the relation, if any, between the ARPA Network and
       common carrier services?

   5. What procedures are required to bring new sites on board and
       up to speed?

   6. What is the most effective way to characterize their
       resources?

   7. What usage of other Network resources do they anticipate?

   8. What procedures will be required for a typical user to obtain
       access to that Host?

   9. What is their charging policy and for what items?

   10. Are their rates in accordance with government standards?

Assumptions Regarding the Network

   I have made several assumptions in this presentation that should
   simplify and, hopefully, clarify the framework in which the
   accounting issues reside. Any one of these assumptions may be
   subject to challenge.

   1. Subnet Considerations

      1.1 That some entity, government or private, will undertake to
          operate the subnet and will act as a cost center for the
          subnet.

      1.2 That the total cost of operating the subnet (equipment,
          development, maintenance, service and other administrative
          costs) will be assumed by the cost center which will be
          reimbursed by the Host sites or directly by ARPA on both a
          connect and usage basis.

      1.3 That the subnet will be initially operated as part of a
          private government-sponsored resource-sharing network for the
          use of its participants in obtaining computer services and not
          as a common carrier for the sale of communication services.

      1.4 That both ARPA and non-ARPA supported contractors will
          eventually be allowed to connect. The use of the subnet may
          be administered to support resource-sharing activities.

   2. Host Considerations

      2.1 That each serving Host will make arrangements for use of its
          facilities and arrange to obtain payment either from its own
          ARPA contract, directly from the using Host, or from the using
          Host via an intermediate mechanism.

      2.2 That each prospective Host site will make available (in some
          way to be designated) figures on cost of usage for relevant
          facilities such as cpu, storage, connect time, peripherals,
          etc. It will further indicate, where appropriate, the status
          of equipment (such as government-furnished, leased, or
          privately owned) and whether the rates are in accord with
          government standards.

      2.3 That the implementation of standard automated accounting
          procedures involving the use of the Network will be deferred
          until non-automated procedures have been understood and
          stabilized. Early experimentation in this area is
          appropriate, however.

2.4 That no major change in current Host accounting procedures
    should be required initially.

3. Both Host and Subnet Considerations

3.1 That two kinds of traffic into the Network will be measured by
    the network, namely traffic to Hosts at other sites and
    traffic to Hosts at the same site.

3.2 The Network cost center will record traffic out of each Host
    but will not initially keep records of traffic on a Host/Host
    basis or on a link or socket basis. Each Host will be
    responsible for distributing the cost of Network usage among
    the appropriate users.

3.3 That some form of duplication, verification, or backup of
    accounting information may become desirable.

3.4 Understanding the relationship between service, improvement,
    reliability and cost should be the responsibility of the
    Network operator, but that feedback from the Host sites in
    this area is absolutely essential.

Suggested Topics

The following set of topics are introduced for discussion among the
network community.

1. Current Practices

1.1 What constitutes current Host accounting procedures? How is it
    accomplished and what is accounted for?

2. Administrative Procedures

2.1 What access arrangements for network users are either planned
    or envisioned at each site?

2.2 Are security or authenticity provisions required for network
    usage and if so, what is the nature of that requirement?

2.3 Should Host accounting and network accounting be completely
    independent of each other or not? If not, in what way should
    they be made independent?

2.4 What long range billing procedures are desirable?

3. Charging Policies

   3.1 What procedures are required for a Host to determine the most
       cost effective way to run a job on the Network? In this
       regard, is it helpful to try to categorize resources for
       costing purposes?

   3.2 Should some classes of Host activity be exempt from
       accounting?

   3.3 Is it desirable to achieve standardized rates for specific
       classes of activity, and if so how should those rates be
       determined?

4. Technical Aspects

   4.1 Should Host accounting information eventually flow via the
       Network? Should it be accessible to a user or a Host in real-
       time? If so, what should flow online?

   4.2 What accounting mechanisms, if any, are needed to deal with
       events, from which recovery or continuation is not possible
       that result from use of the Network and lack of proximity to
       the computer? To what extent are the procedures in current use
       for remote users from the dial-up network applicable?

   4.3 For what classes of Host Network activity, if any, is
       conventional logging-in not a desirable long-range strategy?

This list of topics is not intended to be complete or even very
specific. Suggestions for additional topics are not only welcomed
but encouraged.

        [This RFC was put into machine readable form for entry]
          [into the online RFC archives by Sergio Kleiman]