                          To Be "On" the Internet

Status of this Memo

Abstract

   The Internet permits different levels of access for consumers and
   providers of service. The nature of those differences is quite
   important in the capabilities They afford. Hence, it is appropriate
   to provide terminology that distinguishes among the range, so that
   the Internet community can gain some clarity when distinguishing
   whether a user (or an organization) is "on" the Internet. This
   document suggests four terms, for distinguishing the major classes of
   access.

1.   INTRODUCTION

   The Internet is many things to many people. It began as a technology
   and has grown into a global service. With the growth has come
   increased complexity in details of the technology and service,
   resulting in confusion when trying to determine whether a given user
   is "on" the Internet. Who is on the Internet? What capabilities do
   they have? This note is an attempt to aid Internet consumers and
   providers in determining the basic types of end-user access that
   distinguish critical differences in Internet attachment.

   The list was developed primarily for the perspective of users, rather
   than for the technical community. The definitions in this list take
   the perspective that users are primarily interested in application
   services. A curious implication is that some of the definitions do
   not rely on the direct use of the underlying Internet connectivity
   protocols, TCP/IP. For many technical discussions, therefore, these
   terms will not be appropriate.

2.   LABELS FOR INTERNET ACCESS

   The following definitions move from "most" to "least" Internet
   access, from the perspective of the user (consumer). The first term
   is primarily applicable to Internet service providers. The remaining
   terms are primarily applicable to consumers of Internet service.

   FULL ACCESS

      This is a permanent (full-time) Internet attachment running
      TCP/IP, primarily appropriate for allowing the Internet community
      to access application servers, operated by Internet service
      providers. Machines with Full access are directly visible to
      others attached to the Internet, such as through the Internet
      Protocol's ICMP Echo (ping) facility. The core of the Internet
      comprises those machines with Full access.

   CLIENT ACCESS

      The user runs applications that employ Internet application
      protocols directly on their own computer platform, but might not
      be running underlying Internet protocols (TCP/IP), might not have
      full-time access, such as through dial-up, or might have
      constrained access, such as through a firewall. When active,
      Client users might be visible to the general Internet, but such
      visibility cannot be predicted. For example, this means that most
      Client access users will not be detected during an empirical
      probing of systems "on" the Internet at any given moment, such as
      through the ICMP Echo facility.

   MEDIATED ACCESS

      The user runs no Internet applications on their own platform. An
      Internet service provider runs applications that use Internet
      protocols on the provider's platform, for the user. User has
      simplified access to the provider, such as dial-up terminal
      connectivity. For Mediated access, the user is on the Internet,
      but their computer platform is not. Instead, it is the computer
      of the mediating service (provider) which is on the Internet.

   MESSAGING ACCESS

      The user has no Internet access, except through electronic mail
      and through netnews, such as Usenet or a bulletin board service.
      Since messaging services can be used as a high-latency -- i.e.,
      slow -- transport service, the use of this level of access for
      mail-enabled services can be quite powerful, though not
      interactive.

3.   SAMPLE USAGE

     The test of a nomenclature is, of course, its application to real-
     life situations. Two simple cases involve home users. If a user
     accesses the Internet by running a terminal program on their PC and
     then dials up a public service which provides the Internet
     applications, then that user has Mediated Internet access. The
     public service has Client or Full access, but the user does not. On
     the other hand, users who access via SLIP or PPP are running Internet
     applications on their own PCs and they have Client Internet access.

     Many corporations now have a full-time link to the Internet. The
     link is based on TCP/IP and usually has a number of Internet servers
     running, for email exchange and for making public corporate data
     available to the rest of the world, such as through the World Wide
     Web and Gopher. Clearly, the corporation is "on" the Internet, with
     Full Internet access.

     What about a user in that corporation? Many corporations today
     separate their internal internet from the public Internet via a
     firewall. If a user from the internal internet has a desktop
     computer and reaches out to the Internet, through the firewall, by
     running any Internet applications, such as a Web browser, then that
     user has Client Internet access.

     Some corporations will not allow this, instead requiring all software
     which touches the public Internet to be run on specially-administered
     machines which are part of the corporation's firewall suite of
     services. Hence, users must make a terminal connection to the
     special machines, from there running the Internet applications. Such
     users have Mediated Internet access, the same as home users who dial
     up a public service.

4.   SECURITY CONSIDERATIONS

     This specification does NOT, itself, provide or define any security-
     related mechanisms. However it does describe scenarios with
     different security implications for users and providers. Readers of
     this discussion are cautioned to consider those implications when
     choosing a service.

5.   ACKNOWLEDGMENTS

     Development of these definitions was spurred by many public and
     private discussions in which confusion over Internet access reigned.
     Convergence on an initial set of three terms was the result of
     discussion on the Big-Internet mailing list, particularly from
     comments made by Alan Barret, Howard Berkowitz, Noel Chiappa, Steve

Goldstein, Iain Hanson, Gary Malkin, Bob McKisson, Tim O'Reilly, Dave
Piscitello and Bill Simpson. Eventually, the need for a fourth
category became evident and was discussed further with the
participants on the list. This does not mean that any of them
necessarily endorses the terms and definitions provided, merely that
their notes assisted my thinking on the topic. After the initial
round of public discussion, Smoot Carl-Mitchell and John Quarterman
of Texas Internet Consulting developed terminology for similar
categories and served to prompt modification of this set, described,
here, to distinguish between provider and consumer forms of access
and emphasize the role of Full access in defining the Internet core.

6.   Security Considerations

     Security issues are not discussed in this memo.

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