30 Years of RFCs

Status of this Memo

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1. Introduction - Robert Braden

Thirty years ago today, the first Request for Comments document, RFC 1, was published at UCLA (ftp://ftp.isi.edu/in-notes/rfc1.txt). This was the first of a series that currently contains more than 2500 documents on computer networking, collected, archived, and edited by Jon Postel for 28 years. Jon has left us, but this 30th anniversary tribute to the RFC series is assembled in grateful admiration for his massive contribution.

The rest of this document contains a brief recollection from the present RFC Editor Joyce K. Reynolds, followed by recollections from three pioneers: Steve Crocker who wrote RFC 1, Vint Cerf whose long-range vision continues to guide us, and Jake Feinler who played a key role in the middle years of the RFC series.

2. Reflections - Joyce K. Reynolds

A very long time ago when I was dabbling in IP network number and protocol parameter assignments with Jon Postel, gateways were still "dumb", the Exterior Gateway Protocol (EGP) was in its infancy and TOPS-20 was in its heyday. I was aware of the Request for Comments (RFCs) document series, with Jon as the RFC Editor. I really didn't know much of the innerworkings of what the task entailed. It was Jon's job and he quietly went about publishing documents for the ARPANET community.

Meanwhile, Jon and I would have meetings in his office to go over our specific tasks of the day. One day, I began to notice that a pile of folders sitting to one side of his desk seemed to be growing. A few weeks later the pile had turned into two stacks of folders. I asked him what they were. Apparently, they contained documents for RFC publication. Jon was trying to keep up with the increasing quantity of submissions for RFC publication.

I mentioned to him one day that he should learn to let go of some of his work load and task it on to other people. He listened intently, but didn't comment. The very next day, Jon wheeled a computer stand into my office which was stacked with those documents from his desk intended for RFC publication. He had a big Cheshire cat grin on his face and stated, "I'm letting go!", and walked away.

At the top of the stack was a big red three ring notebook. Inside contained the "NLS Textbook", which was prepared at ISI by Jon, Lynne Sims and Linda Sato for use on ISI's TENEX and TOPS-20 systems. Upon reading its contents, I learned that the NLS system was designed to help people work with information on a computer. It included a wide range of tools, from a simple set of commands for writing, reading

and printing documents to sophisticated methods for retrieving and
communication information. NLS was the system Jon used to write,
edit and create the RFCs. Thus began my indoctrination to the RFC
publication series.

Operating systems and computers have changed over the years, but
Jon's perseverance about the consistency of the RFC style and quality
of the documents remained true. Unfortunately, Jon did not live to
see the 30th Anniversary of this series that he unfailingly nurtured.
Yet, the spirit of the RFC publication series continues as we
approach the new millennium. Jon would be proud.

3. The First Pebble: Publication of RFC 1 - Steve Crocker

RFC 1, "Host Software", issued thirty years ago on April 7, 1969
outlined some thoughts and initial experiments. It was a modest and
entirely forgettable memo, but it has significance because it was
part of a broad initiative whose impact is still with us today.

At the time RFC 1 was written, the ARPANET was still under design.
Bolt, Beranek and Newman had won the all-important contract to build
and operate the Interface Message Processors or "IMPs", the
forerunners of the modern routers. They were each the size of a
refrigerator and cost about $100,000 in 1969 dollars.

The network was scheduled to be deployed among the research sites
supported by ARPA's Information Processing Techniques Office (IPTO).
The first four nodes were to be at UCLA, SRI, University of
California, Santa Barbara and University of Utah. The first
installation, at UCLA, was set for September 1, 1969.

Although there had been considerable planning of the topology, leased
lines, modems and IMPs, there was little organization or planning
regarding network applications. It was assumed the research sites
would figure it out. This turned out to be a brilliant management
decision at ARPA.

Previously, in the summer of 1968, a handful of graduate students and
staff members from the four sites were called together to discuss the
forthcoming network. There was only a basic outline. BBN had not
yet won the contract, and there was no technical specification for
the network's operation. At the first meeting, we scheduled future
meetings at each of the other laboratories, thus setting the stage
for today's thrice yearly movable feast. Over the next couple of
years, the group grew substantially and we found ourselves with
overflow crowds of fifty to a hundred people at Network Working Group
meetings. Compared to modern IETF meetings all over the world with
attendance in excess of 1,000 people and several dozen active working

groups, the early Network Working Groups were small and tame, but
they seemed large and only barely manageable at the time. One
tradition that doesn't seem to have changed at all is the spirit of
unrestrained participation in working group meetings.

Our initial group met a handful of times in the summer and fall of
1968 and winter 1969. Our earliest meetings were unhampered by
knowledge of what the network would look like or how it would
interact with the hosts. Depending on your point of view, this
either allowed us or forced us to think about broader and grander
topics. We recognized we would eventually have to get around to
dealing with message formats and other specific details of low-level
protocols, but our first thoughts focused on what applications the
network might support. In our view, the 50 kilobit per second
communication lines being used for the ARPANET seemed slow, and we
worried that it might be hard to provide high-quality interactive
service across the network. I wish we had not been so accurate!

When BBN issued its Host-IMP specification in spring 1969, our
freedom to wander over broad and grand topics ended. Before then,
however, we tried to consider the most general designs and the most
exciting applications. One thought that captured our imagination was
the idea of downloading a small interpretative program at the
beginning of a session. The downloaded program could then control
the interactions and make efficient use of the narrow bandwidth
between the user's local machine and the back-end system the user was
interacting with. Jeff Rulifson at SRI was the prime mover of this
line of thinking, and he took a crack at designing a Decode-Encode
Language (DEL) [RFC 5]. Michel Elie, visiting at UCLA from France,
worked on this idea further and published Proposal for a Network
Interchange Language (NIL) [RFC 51]. The emergence of Java and
ActiveX in the last few years finally brings those early ideas to
fruition, and we're not done yet. I think we will continue to see
striking advances in combining communication and computing.

I have already suggested that the early RFCs and the associated
Network Working Group laid the foundation for the Internet
Engineering Task Force. Two all-important aspects of the early work
deserve mention, although they're completely evident to anyone who
participates in the process today. First, the technical direction we
chose from the beginning was an open architecture based on multiple
layers of protocol. We were frankly too scared to imagine that we
could define an all-inclusive set of protocols that would serve
indefinitely. We envisioned a continual process of evolution and
addition, and obviously this is what's happened.

The RFCs themselves also represented a certain sense of fear. After several months of meetings, we felt obliged to write down our thoughts. We parceled out the work and wrote the initial batch of memos. In addition to participating in the technical design, I took on the administrative function of setting up a simple scheme for numbering and distributing the notes. Mindful that our group was informal, junior and unchartered, I wanted to emphasize these notes were the beginning of a dialog and not an assertion of control.

It's now been thirty years since the first RFCs were issued. At the time, I believed the notes were temporary and the entire series would die off in a year or so once the network was running. Thanks to the spectacular efforts of the entire community and the perseverance and dedication of Jon Postel, Joyce Reynolds and their crew, the humble series of Requests for Comments evolved and thrived. It became the mainstay for sharing technical designs in the Internet community and the archetype for other communities as well. Like the Sorcerer's Apprentice, we succeeded beyond our wildest dreams and our worst fears.

4. RFCs - The Great Conversation - Vint Cerf

A long time ago, in a network far, far away...

Considering the movement of planet Earth around the Sun and the Sun around the Milky Way galaxy, that first network IS far away in the relativistic sense. It takes 200 million years for the Sun to make its way around the galaxy, so thirty years is only an eyeblink on the galactic clock. But what a marvelous thirty years it has been! The RFCs document the odyssey of the ARPANET and, later, the Internet, as its creators and netizens explore, discover, build, re-build, argue and resolve questions of design, concepts and applications of computer networking.

It has been ultimately fascinating to watch the transformation of the RFCs themselves from their earliest, tentative dialog form to today's much more structured character. The growth of applications such as email, bulletin boards and the world wide web have had much to do with that transformation, but so has the scale and impact of the Internet on our social and economic fabric. As the Internet has taken on greater economic importance, the standards documented in the RFCs have become more important and the RFCs more formal. The dialog has moved to other venues as technology has changed and the working styles have adapted.

Hiding in the history of the RFCs is the history of human
institutions for achieving cooperative work. And also hiding in that
history are some heroes that haven't been acknowledged. On this
thirtieth anniversary, I am grateful for the opportunity to
acknowledge some of them. It would be possible to fill a book with
such names - mostly of the authors of the RFCs, but as this must be a
brief contribution, I want to mention four of them in particular:
Steve Crocker, Jon Postel, Joyce K. Reynolds and Bob Braden.

Steve Crocker is a modest man and would likely never make the
observation that while the contents of RFC 1 might have been entirely
forgettable, the act of writing RFC 1 was indicative of the brave and
ultimately clear-visioned leadership that he brought to a journey
into the unknown. There were no guides in those days - computer
networking was new and few historical milestones prepared us for what
lay ahead. Steve's ability to accommodate a diversity of views, to
synthesize them into coherence and, like Tom Sawyer, to persuade
others that they wanted to devote their time to working on the
problems that lay in the path of progress can be found in the early
RFCs and in the Network Working Group meetings that Steve led.

In the later work on Internet, I did my best to emulate the framework
that Steve invented: the International Network Working Group (INWG)
and its INWG Notes, the Internet Working Group and its Internet
Experiment Notes (IENs) were brazen knock-offs of Steve's
organizational vision and style.

It is doubtful that the RFCs would be the quality body of material
they are today were it not for Jonathan Postel's devotion to them
from the start. Somehow, Jon knew, even thirty years ago that it
might be important to document what was done and why, to say nothing
of trying to capture the debate for the benefit of future networkers
wondering how we'd reached some of the conclusions we did (and
probably shake their heads...).

Jon was the network's Boswell, but it was his devotion to quality and
his remarkable mix of technical and editing skills that permeate many
of the more monumental RFCs that dealt with what we now consider the
TCP/IP standards. Many bad design decisions were re-worked thanks to
Jon's stubborn determination that we all get it "right" - as the
editor, he simply would not let something go out that didn't meet his
personal quality filter. There were times when we moaned and
complained, hollered and harangued, but in the end, most of the time,
Jon was right and we knew it.

Joyce K. Reynolds was at Jon's side for much of the time that Jon was
the RFC editor and as has been observed, they functioned in unison
like a matched pair of superconducting electrons - and
superconductors they were of the RFC series. For all practical
purposes, it was impossible to tell which of the two had edited any
particular RFC. Joyce's passion for quality has matched Jon's and
continues to this day. And she has the same subtle, puckish sense of
humor that emerged at unexpected moments in Jon's stewardship. One
example that affected me personally was Joyce's assignment of number
2468 to the RFC written to remember Jon. I never would have thought
of that, and it was done so subtly that it didn't even ring a bell
until someone sent me an email asking whether this was a coincidence.
In analog to classical mystery stories, the editor did it.

Another unsung hero in the RFC saga is Bob Braden - another man whose
modesty belies contributions of long-standing and monumental
proportions. It is my speculation that much of the quality of the
RFCs can be traced to consultations among the USC/ISI team, including
Jon, Joyce and Bob among others. Of course, RFC 1122 and 1123 stand
as two enormous contributions to the clarity of the Internet
standards. For that task alone, Bob deserves tremendous appreciation,
but he has led the End-to-End Research Group for many years out of
which has come some of the most important RFCs that refine our
understanding of optimal implementation of the protocols, especially
TCP.

When the RFCs were first produced, they had an almost 19th century
character to them - letters exchanged in public debating the merits
of various design choices for protocols in the ARPANET. As email and
bulletin boards emerged from the fertile fabric of the network, the
far-flung participants in this historic dialog began to make
increasing use of the online medium to carry out the discussion -
reducing the need for documenting the debate in the RFCs and, in some
respects, leaving historians somewhat impoverished in the process.
RFCs slowly became conclusions rather than debates.

Jon permitted publication of items other than purely technical
documents in this series. Hence one finds poetry, humor (especially
the April 1 RFCs which are as funny today as they were when they were
published), and reprints of valuable reference material mixed into
the documents prepared by the network working groups.

In the early 1970s, the Advanced Research Projects Agency was
conducting several parallel research programs into packet switching
technology, after the stunning success of this idea in the ARPANET.
Among these were the Packet Radio Network, the Atlantic Packet
Satellite Network and the Internet projects. These each spawned note
series akin to but parallel to the RFCs. PRNET Notes, ARPA Satellite

System Notes (bearing the obvious and unfortunate acronym...),
Internet Experiment Notes (IENs), and so on. After the Internet
protocols were mandated to be used on the ARPANET and other DARPA-
sponsored networks in January 1983 (SATNET actually converted before
that), Internet- related notes were merged into the RFC series. For a
time, after the Internet project seemed destined to bear fruit, IENs
were published in parallel with RFCs. A few voices, Danny Cohen's in
particular (who was then at USC/ISI with Jon Postel) suggested that
separate series were a mistake and that it would be a lot easier to
maintain and to search a single series. Hindsight seems to have
proven Danny right as the RFC series, with its dedicated editors,
seems to have borne the test of time far better than its more
ephemeral counterparts.

As the organizations associated with Internet continued to evolve,
one sees the RFCs adapting to changed circumstances. Perhaps the most
powerful influence can be seen from the evolution of the Internet
Engineering Task Force from just one of several task forces whose
chairpersons formed the Internet Activities Board to the dominant,
global Internet Standards development organization, managed by its
Internet Engineering Steering Group and operating under the auspices
of the Internet Society. The process of producing "standards-track"
RFCs is now far more rigorous than it once was, carries far more
impact on a burgeoning industry, and has spawned its own, relatively
informal "Internet Drafts" series of short-lived documents forming
the working set of the IETF working groups.

The dialogue that once characterized the early RFCs has given way to
thrice-annual face-to-face meetings of the IETF and enormous
quantities of email, as well as a growing amount of group-interactive
work through chat rooms, shared white boards and even more elaborate
multicast conferences. The parallelism and the increasing quantity of
transient dialogue surrounding the evolution of the Internet has made
the task of technology historians considerably more difficult,
although one can sense a counter-balancing through the phenomenal
amount of information accumulating in the World Wide Web. Even casual
searches often turn up some surprising and sometimes embarrassing old
memoranda - a number of which were once paper but which have been
rendered into bits by some enterprising volunteer.

The RFCs, begun so tentatively thirty years ago, and persistently
edited and maintained by Jon Postel and his colleagues at USC/ISI,
tell a remarkable story of exploration, achievement, and dedication
by a growing mass of internauts who will not sleep until the Internet
truly is for everyone. It is in that spirit that this remembrance is
offered, and in particular, in memory of our much loved colleague,
Jon Postel, without whose personal commitment to this archive, the
story might have been vastly different and not nearly as remarkable.

5. Reflecting on 30 years of RFCs - Jake Feinler

   By now we know that the first RFC was published on April 7, 1969 by
   Steve Crocker. It was entitled "Host Software". The second RFC was
   published on April 9, 1969 by Bill Duvall of SRI International (then
   called Stanford Research Institute or SRI), and it too was entitled
   "Host Software". RFC 2 was a response to suggestions made in RFC 1-
   -and so the dialog began.

   Steve proposed 2 experiments in RFC 1:

   "1) SRI is currently modifying their on-line retrieval system which
   will be the major software component of the Network Documentation
   Center [or The SRI NIC as it soon came to be known] so that it can be
   modified with Model 35 teletypes. The control of the teletypes will
   be written in DEL [Decode-Encode Language]. All sites will write DEL
   compilers and use NLS [SRI Doug Engelbart's oNLine System] through
   the DEL program".

   "2) SRI will write a DEL front end for full NLS, graphics included.
   UCLA and UTAH will use NLS with graphics".

   RFC 2, issued 2 days later, proposed detailed procedures for
   connecting to the NLS documentation system across the network. Steve
   may think RFC 1 was an "entirely forgettable" document; however, as
   an information person, I beg to differ with him. The concepts
   presented in this first dialog were mind boggling, and eventually led
   to the kind of network interchange we are all using on the web today.
   (Fortunately, we have graduated beyond DEL and Model 35 teletypes!)

   RFC 1 was, I believe, a paper document. RFC 2 was produced online
   via the SRI NLS system and was entered into the online SRI NLS
   Journal. However, it was probably mailed to each recipient via snail
   mail by the NIC, as email and the File Transfer Protocol (FTP) had
   not yet been invented.

   RFC 3, again by Steve Crocker, was entitled, "Documentation
   Conventions;" and we see that already the need for a few ground rules
   was surfacing. More ground-breaking concepts were introduced in this
   RFC. It stated that:

   "The Network Working Group (NWG) is concerned with the HOST software,
   the strategies for using the network, and the initial experiments
   with the network. Documentation of the NWG's effort is through notes
   such as this. Notes may be produced at any site by anybody and
   included in this series".

It goes on to say:

"The content of a NWG note may be any thought, suggestion,
etc.related to the Host software or other aspect of the network.
Notes are encouraged to be timely rather than polished.
Philosophical positions without examples or other specifics, specific
suggestions or implementation techniques without introductory or
background explanation, and explicit questions without any attempted
answers are all acceptable. The minimum length for a NWG note is one
sentence".

"These standards (or lack of them) are stated explicitly for two
reasons. First, there is a tendency to view a written statement as
discussion of considerably less than authoritative ideas. Second,
there is a natural hesitancy to publish something unpolished, and we
hope to ease this inhibition".

Steve asked that this RFC be sent to a distribution list consisting
of:

        Bob Kahn, BBN
        Larry Roberts, ARPA
        Steve Carr, UCLA
        Jeff Rulifson, UTAH
        Ron Stoughton, UCSB
        Steve Crocker, UCLA

Thus by the time the third RFC was published, many of the concepts of
how to do business in this new networking environment had been
established--there would be a working group of implementers (NWG)
actually discussing and trying things out; ideas were to be free-
wheeling; communications would be informal; documents would be
deposited (online when possible) at the NIC and distributed freely to
members of the working group; and anyone with something to contribute
could come to the party. With this one document a swath was
instantly cut through miles of red tape and pedantic process. Was
this radical for the times or what! And we were only up to RFC 3!

Many more RFCs followed and the SRI NLS Journal became the
bibliographic search service of the ARPANET. It differed from other
search services of the time in one important respect: when you got a
"hit" searching the journal online, not only did you get a citation
telling you such things as the author and title; you got an
associated little string of text called a "link". If you used a
command called "jump to link", voila! you got the full text of the
document. You did not have to go to the library, or send an order
off to an issuing agency to get a copy of the document, as was the
custom with other search services of the time. The whole document

itself was right there immediately!

Also, any document submitted to the journal could not be changed.
New versions could be submitted, and these superceded old versions,
but again the new versions could not be changed. Each document was
given a unique identifying number, so it was easy to track. These
features were useful in a fast-moving environment. Documents often
went through several drafts before they were finally issued as an RFC
or other official document, and being able to track versions was very
useful.

The SRI NLS Journal was revolutionary for the time; however, access
to it online presented several operational problems. Host computers
were small and crowded, and the network was growing by leaps and
bounds; so connections had to be timed out and broken to give
everyone a chance at access. Also, the rest of the world was still a
paper world (and there were no scanners or laser printers, folks!),
so the NIC still did a brisk business sending out paper documents to
requestors.

By 1972 when I became Principal Investigator for the NIC project, the
ARPANET was growing rapidly, and more and more hosts were being
attached to it. Each host was required to have a technical contact
known as the Technical Liaison, and most of the Liaison were also
members of the NWG. Each Liaison was sent a set of documents by the
NIC called "functional documents" which included the Protocol
Handbook (first issued by BBN and later published by the NIC.) The
content of the Protocol Handbook was made up of key RFCs and a
document called "BBN 1822" which specified the Host-to-Imp protocol.

The NWG informed the NIC as to which documents should be included in
the handbook; and the NIC assembled, published, and distributed the
book. Alex McKenzie of BBN helped the NIC with the first version of
the handbook, but soon a young fellow, newly out of grad school,
named Jon Postel joined the NWG and became the NIC's contact and
ARPA's spokesperson for what should be issued in the Protocol
Handbook.

No one who is familiar with the RFCs can think of them without
thinking of Dr. Jonathan Postel. He was "Mister RFC" to most of us.
Jon worked at SRI in the seventies and had the office next to mine.
We were both members of Doug Engelbart's Augmentation Research
Center. Not only was Jon a brilliant computer scientist, he also
cared deeply about the process of disseminating information and
establishing a methodology for working in a networking environment.
We often had conversations way into the wee hours talking about ways
to do this "right". The network owes Jon a debt of gratitude for his
dedication to the perpetuation of the RFCs. His work, along with

that of his staff, the NWG, the IETF, the various NICs, and CNRI to
keep this set of documents viable over the years was, and continues
to be, a labor of love.

Jon left SRI in 1976 to join USC-ISI, but by that time the die was
cast, and the RFCs, NWG, Liaison, and the NIC were part of the
network's way of doing business. However, the SRI NLS Journal system
was becoming too big for its host computer and could not handle the
number of users trying to access it. Email and FTP had been
implemented by now, so the NIC developed methodology for delivering
information to users via distributed information servers across the
network. A user could request an RFC by email from his host computer
and have it automatically delivered to his mailbox. Users could also
purchase hardcopy subscriptions to the RFCs and copies of the
Protocol Handbook, if they did not have network access.

The NIC worked with Jon, ARPA, DCA, NSF, other NICs, and other
agencies to have secondary reference sets of RFCs easily accessible
to implementers throughout the world. The RFCs were also shared
freely with official standards bodies, manufacturers and vendors,
other working groups, and universities. None of the RFCs were ever
restricted or classified. This was no mean feat when you consider
that they were being funded by DoD during the height of the Cold War.

Many of us worked very hard in the early days to establish the RFCs
as the official set of technical notes for the development of the
Internet. This was not an easy job. There were suggestions for many
parallel efforts and splinter groups. There were naysayers all along
the way because this was a new way of doing things, and the ARPANET
was "coloring outside the lines" so to speak. Jon, as Editor-in-
Chief was criticized because the RFCs were not issued by an
"official" standards body, and the NIC was criticized because it was
not an "official" document issuing agency. We both strived to marry
the new way of doing business with the old, and fortunately were
usually supported by our government sponsors, who themselves were
breaking new ground.

Many RFCs were the end result of months of heated discussion and
implementation. Authoring one of them was not for the faint of
heart. Feelings often ran high as to what was the "right" way to go.
Heated arguments sometimes ensued. Usually they were confined to
substance, but sometimes they got personal. Jon would often step in
and arbitrate. Eventually the NWG or the Sponsors had to say, "It's
a wrap. Issue a final RFC". Jon, as Editor-in-Chief of the RFCs,
often took merciless flak from those who wanted to continue
discussing and implementing, or those whose ideas were left on the
cutting room floor. Somehow he always managed to get past these
controversies with style and grace and move on. We owe him and

others, who served on the NWG or authored RFCs, an extreme debt of
gratitude for their contributions and dedication.

At no time was the controversy worse than it was when DoD adopted
TCP/IP as its official host-to-host protocols for communications
networks. In March 1982, a military directive was issued by the
Under Secretary of Defense, Richard DeLauer. It simply stated that
the use of TCP and IP was mandatory for DoD communications networks.
Bear in mind that a military directive is not something you discuss -
the time for discussion is long over when one is issued. Rather a
military directive is something you DO. The ARPANET and its
successor, the Defense Data Network, were military networks, so the
gauntlet was down and the race was on to prove whether the new
technology could do the job on a real operational network. You have
no idea what chaos and controversy that little 2-page directive
caused on the network. (But that's a story for another time.)
However, that directive, along with RFCs 791 and 793 (IP and TCP)
gave the RFCs as a group of technical documents stature and
recognition throughout the world. (And yes, TCP/IP certainly did do
the job!)

Jon and I were both government contractors, so of course followed the
directions of our contracting officers. He was mainly under contract
to ARPA, whereas the NIC was mainly under contract to DCA. BBN was
another key contractor. For the most part we all worked as a team.
However, there was frequent turnover in military personnel assigned
to both the ARPANET and the DDN, and we all collaborated to try to
get all the new participants informed as to what was available to
them when they joined the network. We also tried to foster
collaboration rather than duplication of effort, when it was
appropriate. The NWG (or IETF as it is now known) and the RFCs
became the main vehicles for interagency collaboration as the DoD
protocols began to be used on other government, academic, and
commercial networks.

I left SRI and the NIC project in 1989. At that time there were
about 30,000 hosts on what was becoming known as the Internet, and
just over a 1000 RFCs had been issued. Today there are millions of
hosts on the Internet, and we are well past the 3000 mark for RFCs.
It was great fun to be a part of what turned out to be a
technological revolution.   It is heartwarming to see that the RFCs
are still being issued by the IETF, and that they are still largely
based on ideas that have been discussed and implemented; that the
concepts of online working groups and distributed information servers
are a way of life; that those little "links" (officially known as
hypertext) have revolutionized the delivery of documents; and that
the government, academia, and business are now all playing the same
game for fun and profit. (Oh yes, I'm happy to see that Steve's idea

for integrated text and graphics has finally come to fruition,
although that work took a little longer than 2 days.)

6. Favorite RFCs -- The First 30 Years - Celeste Anderson

Five years ago, Jon Postel and I had wanted to publish a 25th RFC
anniversary book, but, alas, we were both too busy working on other
projects. We determined then that we should commemorate the
thirtieth anniversary by collecting together thirty "RFC Editors'
Choice" RFCs based on original ideas expressed throughout the first
30 years of their existence.

Jon's untimely death in October 1998 prevented us from completing
this goal. We did, however, start to put online some of the early
RFCs, including RFC 1. We weren't sure whether we were going to try
to make them look as close to the typewritten originals as possible,
or to make a few adjustments and format them according to the latest
RFC style. Those of you who still have your copies of RFC 1 will
note the concessions we made to NROFF the online version. The hand-
drawn diagrams of the early RFCs also present interesting challenges
for conversion into ASCII format.

There are still opportunities to assist the RFC Editor to put many of
the early RFCs online. Check the URL:
http://www.rfc-editor.org/rfc-online.html for more information on this
project.

In memory of Jon, we are compiling a book for publication next year
of "Favorite RFCs -- The First 30 Years".

We have set up a web interface at

        http://www.rfc-editor.org/voterfc.html

for tabulating votes and recording the responses. We will accept
email as well. Please send your email responses to: voterfc@isi.edu.
We prefer votes accompanied by explanations for the vote choice.

We reserve the right to add to the list several RFCs that Jon Postel
had already selected for the collection. Voting closes December 31,
1999.

7. Security Considerations

   Security issues are not discussed in this commemorative RFC.

8. Acknowledgments

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10. APPENDIX - RFC 1

   The cover page said at the top:

      "Network Working Group
       Request for Comments"

   and then came an internal UCLA distribution list:

      V. Cerf, S. Crocker, M. Elie, G. Estrin, G. Fultz, A. Gomez,
      D. Karas, L. Kleinrock, J. Postel, M. Wingfield, R. Braden,
      and W. Kehl.

   followed by an "Off Campus" distribution list:

      A. Bhushan (MIT), S. Carr (Utah), G. Cole (SDC), W. English (SRI),
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      P. Rovner (MIT), and R. Stoughton (UCSB).

   The following title page had

      "Network Working Group
       Request for Comments: 1"

   at the top, and then:

                HOST SOFTWARE

                STEVE CROCKER
                7 APRIL 1969

11. Full Copyright Statement