

The **Internet Protocol** *Journal*

The Internet Protocol Journal Sponsorship Prospectus

Version 5, September 2016

Postal Address:

743 Grand View Avenue
San Francisco, CA 94114-3509
USA

Phone: +1 415-550-9433

Mobile: +1 415-370-4628

Fax: +1 415-826-2008

E-mail: olejacobsen@me.com

E-mail: ole@protocoljournal.org

Web: www.protocoljournal.org

This page intentionally left blank.

Executive Summary

Following Cisco Systems' decision to stop publishing *The Internet Protocol Journal* (IPJ) in October 2013, many voices in the Internet technical community called for a continuation of the publication under a new management and funding model. This document presents an overview of the publication and describes a multi-stakeholder sponsorship mechanism through which IPJ will continue to serve its current and future readership. The journal was relaunched in September 2014 under a new umbrella organization, namely *The Internet Society* (ISOC), and has published quarterly since that time. The current list of supporters and sponsors can be found at the end of this document and also on our website at www.protocoljournal.org

General Overview and Philosophy

IPJ was published quarterly by Cisco Systems, Inc. from June 1998 until June 2013. IPJ, and its predecessor *ConneXions—The Interoperability Report*, published by Interop Company from 1987 to 1997, together cover nearly 30 years of Internet history up to the present day.

It is our goal to continually advance the state of Internet technology through the distribution of articles describing protocol development, standardization, implementation, deployment, operations, policy and governance. It is critical to the success of IPJ that it continues to operate in a *vendor-neutral* matter and not promote any specific products or services. Rather, IPJ focuses on issues facing the network designer or operator.

The Internet Protocol Journal serves as an informational and educational resource for engineering professionals involved in the design, development, and operation of public and private internets. Our objective is to maintain and sustain a vibrant community in which Internet technology and its application can be discussed, advanced and understood by those involved.

Since its inception, IPJ has been available at no cost in two formats: on paper, and online. A majority of IPJ's readers prefer the printed edition and tell us that this is because it is the most "portable" format, it allows them to write notes on the pages, and they like to save back issues for reference. We believe that IPJ should continue to be freely available online, as well as on paper.

A natural extension of our current publication formats would include tablet and smartphone editions (iBook, Kindle, ePub, etc). Developing such editions is a goal for IPJ going forward. Other interactive services that support the core mission of the IPJ may also be developed and provided in the future.

With respect to both the content and the delivery formats, we will need to carefully survey our current readership and consult with the sponsors in order to deliver the most appropriate material going forward. The re-launch of IPJ thus represents both a continuation of an existing journal as well as an opportunity to evolve its scope, format and audience.

The Journal

The Internet Protocol Journal is a quarterly technical publication containing tutorial articles (“What is...?”) as well as implementation/operation articles (“How to...”). The journal provides articles about all aspects of Internet technology. In addition to feature-length articles, IPJ contains technical updates, book reviews, announcements, opinion columns, and letters to the Editor. Topics include but are not limited to:

- Access and infrastructure technologies such as: ISDN, Gigabit Ethernet, SONET, ATM, xDSL, cable, fiber optics, satellite, wireless, and dial systems.
- Transport and interconnection functions such as: switching, routing, tunneling, protocol transition, multicast, and performance.
- Network management, administration, and security issues, including: authentication, privacy, encryption, monitoring, firewalls, troubleshooting, and mapping.
- Value-added systems and services such as: Virtual Private Networks, resource location, caching, client/server systems, distributed systems, network computing, and quality of service.
- Application and end-user issues such as: E-mail, Web authoring, server technologies and systems, electronic commerce, and application management.
- Legal, policy, regulatory and governance topics such as: copyright, content control, content liability, settlement charges, resource allocation, and trademark disputes in the context of internetworking.

The journal is presently available on paper and in PDF format. The IPJ website also contains all back issues, index files and links to other relevant information: **www.protocoljournal.org**

The primary target market for IPJ are those people interested in understanding and furthering the Internet and its technologies. This includes, but is not limited to, academics, corporate technologists, and interested individuals.

IPJ fills a unique position of providing high quality materials written in a tutorial style by leading experts in the field in a timely manner. IPJ is well established and respected. The subscriber list for IPJ is entirely opt-in based. Since 1998, some 52,000 subscribers have signed up to receive IPJ. The journal’s editor has strong connections to organization such as the IETF and to the regional registries as well as the Japanese Internet technical community. For the last 18 years, the journal has been distributed at many Internet-related events such as:

- *Internet Engineering Task Force (IETF) meetings*
- *The Asia Pacific Regional Internet Conference on Operation Technologies (APRICOT)*
- *Internet Corporation for Assigned Names and Numbers (ICANN) meetings*
- *Regional Internet Registry (RIR) meetings (AFRINIC, APNIC, ARIN, LACNIC, and RIPE)*

Management and Organization

Ole J. Jacobsen, the Editor and Publisher of the journal, manages all aspects of its generation and distribution in coordination with numerous contractors.

IPJ has an *Editorial Advisory Board* with the following members:

Dr. Vint Cerf, VP and Chief Internet Evangelist
Google Inc, USA

Dr. Steve Crocker, Chairman
Internet Corporation for Assigned Names and Numbers

Dr. Jon Crowcroft, Marconi Professor of Communications Systems
University of Cambridge, England

Geoff Huston, Chief Scientist
Asia Pacific Network Information Centre, Australia

Olaf Kolkman, Chief Internet Technology Officer
The Internet Society

Dr. Jun Murai, Founder, WIDE Project, Dean and Professor
Faculty of Environmental and Information Studies, Keio University, Japan

Pindar Wong, Chairman and President Verifi Limited, Hong Kong

A second, non-public, *Article Review Panel* is used extensively to vet articles for accuracy, appropriateness and relevance. The process is similar to so called “peer-reviews” in the academic setting in that comments are sent back to authors anonymized.

We propose the addition of a new panel, namely a *Reader Feedback Panel*, recognizing the important role that our readership plays in the creation of IPJ.

With respect to the sponsors of the new IPJ, we encourage participation and communication about all aspects of the publication. From time to time we plan to arrange community events to foster such interactions. These events will typically be co-located with major Internet events such as IETF meetings.

Cisco and The Future of IPJ

“At this time, Cisco Systems has chosen to stop funding the production of the Internet Protocol Journal (IPJ). This is a decision based on business priorities, and is not a reflection on either the content of this journal, or the work of its editor and contributors.

Cisco Systems does appreciate the work put into the IPJ and its content. As such, we are willing to consider allowing the use of the journal name, and its subscriber list, by an entity that meets our specifications. While our final decision in any specific case could only be made when the particular parameters of a proposal are made clear, in general we can say that we are hoping to see the IPJ picked up by either an academic institution, regional network authority, or standards development organization with a track record in supporting innovative networking research, and a history of impartially presenting matters of interest to the networking industry.

—*Joel Bion SVP, Cisco Systems*
(E-mail dated October 7, 2013)

“TO OUR READERS

At this time, Cisco Systems, Inc. has decided not to continue publishing The Internet Protocol Journal (IPJ) effective immediately.

Cisco wishes to thank Ole Jacobsen, the Editor and Publisher of IPJ for his tireless and professional efforts to inform the community of the Internet, its varied protocols, and its impact upon the world through this publication. Cisco also wishes to thank the authors of the published articles, and all those who submitted articles. A special note of thanks goes to the IPJ Editorial Advisory Board and the article reviewers who have helped to maintain the very high standards of journalistic and technical quality of IPJ.

The online version of the Internet Protocol Journal will remain available for reference here, including all back issues in PDF and HTML format as well as the index files. The new IPJ website can be found at: <http://protocoljournal.org>”

(From the Cisco IPJ website)

A license agreement for the use of the journal title was signed with Cisco Systems in August 2014, and the first issue of IPJ under the new model was published in September 2014. In this model, ISOC provides administrative support for all financial matters, and the journal relies on the support from numerous individuals and organizations. We are sensitive to any industry competitive situations that may arise as a result of sponsorships, but we believe that an absolute insistence on a vendor-neutral editorial independence has allowed the journal to continue to serve the broadest possible audience “without fear or favor.”

Starting with the September 2014 issue, IPJ is published under the “CC BY-NC-ND” Creative Commons License in order to make it as widely available as possible.



The title “The Internet Protocol Journal” is a trademark of Cisco Systems, Inc. and/or its affiliates (“Cisco”), used under license. All other trademarks mentioned in this document or website are the property of their respective owners.

Financial Details

Production and Distribution Cost assuming a circulation of about 16,000 Printed Copies

Task	Quarterly	Annually
Lettershop*:	7,000	28,000
International postage/shipping:	15,000	60,000
Pre-Production costs:	6,000	24,000
Author Stipends:	3,000	12,000
Printing:	10,000	40,000
Totals:	41,000	164,000

* Lettershop includes domestic postage as well as domestic shipping, subscriber database maintenance, etc.

In addition to the above figures, IPJ incurs *annual* expenses of around \$70,000 in business expenses, as well as staff and overhead expenses of around \$130,000. All figures in USD.

NOTE: IPJ is published on a “cash-available” basis which could affect the publication frequency from time to time.

We believe that individual subscription fees for the printed edition *could* be considered in the future, depending on the size of the print subscriber base once it reaches “steady state.” In the meantime, we expect the costs to be under-written our supporters and sponsors, and we are also asking subscriber for a donation using a PayPal gateway.

As of September 2016, IPJ had approximately 15,000 print subscribers and 7,000 online subscribers. Online subscribers receive an e-mail notification whenever a new edition is available for download.



September 2014 Volume 17, Number 1

A Quarterly Technical Publication for Internet and Intranet Professionals

In This Issue

From the Editor 1

Gigabit Wi-Fi 2

A Question of DNS Protocols 11

Fragments 24

Call for Papers 26

Supporters and Sponsors 27

FROM THE EDITOR

It is with great pleasure and gratitude that I announce the re-launch of *The Internet Protocol Journal* (IPJ) after a hiatus of just over one year. To subscribe, send e-mail to ipj@protocoljournal.org and we will send you further information. Please bear with us as we deploy a new subscription system and web page.

The re-launch of IPJ is made possible by the support of The Internet Society, which provides administrative functions, and Cisco Systems, which allows us to use the subscriber list and journal name under license. Sponsorship for IPJ is provided by: Afllias; Asia Pacific Internet Association (APIA); Asia Pacific Network Information Centre (APNIC); Cisco Systems; Comcast; Dyn; Google, Inc.; The Internet Corporation for Assigned Names and Numbers (ICANN); Juniper Networks; LimeLight Networks; Netnod; Network Startup Resource Center (NSRC); Réseaux IP Européens Network Coordination Centre (RIPE NCC); Stichting Internet Domeinregistratie Nederland (SIDN); Team Cymru; Verisign Labs; Widely Integrated Distributed Environment (WIDE); 21Vianet Group; Dave Crocker; Jay Etchings; Dennis Jennings; Jim Johnston; Bill Manning; George Sadowsky; Helge Skrivervik; Rob Thomas; and Tom Vest. If you are interested in sponsoring IPJ, please contact us at ipj@protocoljournal.org

We have augmented our Editorial Advisory Board and welcome Fred Baker, Cisco Fellow, Cisco Systems; Steve Crocker, Chairman, ICANN; Geoff Huston, Chief Scientist, APNIC; and Olaf Kolman, Chief Internet Technology Officer, The Internet Society. Our thanks go to our outgoing members David Farber, Deepinder Sidhu, and Peter Løthberg. The complete Editorial Advisory Board is listed on the back cover.

The increasing demand for more bandwidth in all aspects of networking has led to technology changes in wide-area, local-area, and mobile networks. Newer, faster technologies have been developed and deployed. In our first article, William Stallings gives an overview of *Gigabit Wi-Fi*, also known as IEEE 802.11ac. This relatively new version of Wi-Fi promises transmission speeds of up to 3.2 Gbps.

In our second article, Geoff Huston describes several Denial-of-Service attacks that were launched using the *Domain Name System* (DNS) as the attack vector and discusses details of DNS protocol interactions.

This journal will continue to cover all aspects of internetworking just as it always has. We welcome your feedback and suggestions!

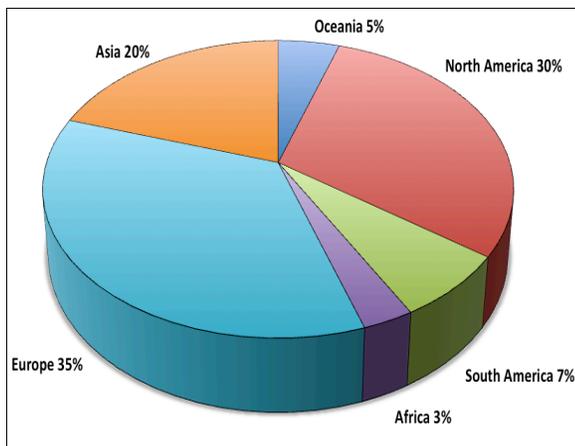
—Ole J. Jacobsen, Editor and Publisher
ole@protocoljournal.org

You can download IPJ back issues and find subscription information at: www.protocoljournal.org

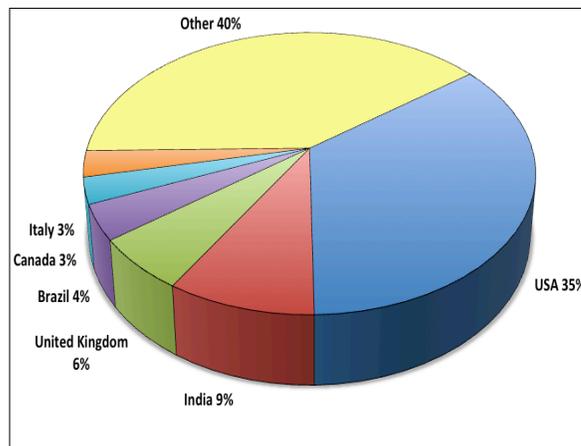
ISSN 1944-1134

Reader Demographics and Feedback

The following diagrams show the relative distribution of IPJ by region and countries:



Worldwide Distribution



Top Countries

Survey

In 2006, Socratic Research, Inc. in San Francisco conducted a survey of IPJ readers. A total of 2,042 respondents participated in this study from 13,371 e-mail invitations sent out for a participation rate of 15%. The following is a brief summary of the survey results:

- Almost all of the current subscribers were reading and preferred the paper version. Today, this rate is still high at nearly 70% but notably down from 96% in 2006. While paper remains the preferred format, we see a slow shift from paper towards online subscriptions.
- Almost all of the readers are very satisfied/satisfied with the paper version and only half are very satisfied/satisfied with the online version.
- Paper readers read their copies cover to cover at a significantly higher rate than do online readers.
- If IPJ was *only* available online over half of all readers would read it less thoroughly than they do now.
- If IPJ was available free online, but a fee was charged for the paper version, 15% would not read it at all. 20% would pay for the paper version.
- Among those indicating willingness to pay for the paper version, a subscription fee of \$16 would appeal to 60% of readers. The average reader is willing to pay about \$10 for an annual subscription.

Reasons readers prefer paper:

- | | |
|---|-----|
| • Easier to take with me, no computer needed | 94% |
| • Can write notes on pages | 51% |
| • Easy to pass on to colleagues | 37% |
| • I save my printed copy for reference | 60% |
| • I don't have a printer to print the PDF version | 6% |
| • My network access does not allow reading online | 3% |
| • Other | 13% |

Reasons readers prefer online:

- | | |
|--|-----|
| • I can read a new issue as soon as it is posted | 54% |
| • I can search the online version | 58% |
| • I can follow links to references etc. | 66% |
| • Copy can't be misplaced/lost with other papers | 42% |
| • Other | 18% |

Stated reasons for IPJ readership satisfaction:

- Helps keep you current with networking and Internet technologies 94%
- Gives you practical information that you can use in your job 88%
- Helps you to make better-informed decisions and solutions for your company 69%
- Helps you to make better-informed decisions and solutions for your customers' use 66%
- Helps you sell technology solutions to internal decision makers 59%
- Helps you sell technology solutions to customers 50%
- Gives you innovative ideas you can implement in your own network 81%

Praise for IPJ—A Small Sample of Feedback Received

“ I think IPJ is a really valuable publication concerning network subjects. It's useful for the expert reader, but also helps “newbies” to understand things that otherwise will need hours of Internet searching for documentation. Thanks for doing such a great work and for your time.

—*Dayron Armas Peña, Havana, Cuba*

“ I'd like to thank you for the very informative and useful IPJ. I've used IPJ over the years and it's a resource that definitely has its use in the very dynamic world of IP. My big thanks to Ole for his dedication to this endeavor and the very insightful articles on Fragments which does not only touch technical issues but policy ones as well.

—*Jose (Jon) E. Perez, Jr., Pendle Hill, Australia*

“ I just wanted to send a short note to say thank you for sending the IPJ out to me. The journal is a very valuable source of information for me as I push to complete a final year MSc in Management of Information Systems as well as an extremely valuable reference to me in my regular working life as a program/project manager (particular during a couple of SOX compliancy tasks recently). I've just got and read through the December edition and enjoyed the DDoS article very much. Your work is much appreciated, long may it continue.

—*Tom Hogarty, Dublin, Ireland*

“ In my work, I read many technical papers. Few have I enjoyed as much as your paper in the September 2004 *Internet Protocol Journal*, titled “Anatomy: A Look Inside Network Address Translators.” Everything about it, including your writing style, were superb. I feel confident that you received many similar notes after it was published. I just wanted to add my bit too. Thank you for taking the time to write it, and for doing such an excellent job.

—*David Stoler, Chief Cryptographer, Apani Networks*

“ IPJ has been an invaluable tool in my career, and I was teaching a colleague again just yesterday about it. Thank you so very much for the *amazing* work all these years.

—*Kevin Long*

“ I've been reading IPJ for the last 13 years. Thanks to the team for all of the time and effort that has gone into writing, editing, and producing IPJ. Before blogging, YouTube, and Twitter, IPJ was one of the things that made IT interesting to me, and one of the reasons that I can now count myself as a Network Engineer. Thanks again!

—*Jonathan Davis*

“ Thank you very much for the work done. I used IPJ as reference in my work and in college. My thanks to all the staff and writers who collaborated with their articles.

—*Nicolas Pereyra Molinas, Paraguay*

Sponsorship Levels and Benefits

Funding for the new IPJ is provided by corporations, individuals and organizations with an interest in supporting IPJ's ongoing mission of providing timely information about all aspects of Internet deployment and development.

By sponsoring IPJ you will:

- Help ensure that a well-respected and well established technical journal can continue to serve its current and future readership.
- Contribute to a sustainable business model which allows the journal to evolve and develop new and innovative publication and distribution methods.
- Become part of a community of readers, authors and supporting organizations that fosters a continuing dialog about the Internet and its evolution.
- Demonstrate your commitment to IPJ and the Internet to more than 20,000 readers worldwide.

The following categories of *annual* sponsorship have been established:

Individual:	any amount
Corporate Subscription:	\$2,500*
Emerald:	\$5,000 – \$24,999
Sapphire:	\$25,000 – \$49,999
Ruby:	\$50,000 – \$99,999
Diamond:	\$100,000 and above

Benefits: All sponsors will be acknowledged in IPJ as well on its website. Additional benefits commensurate with each sponsorship level will be developed after consultation with the stakeholders and could include such services as special reprints and a quantity of printed journals for use by stakeholders at events or for internal distribution.

* A Corporate Subscription includes up to 100 copies of IPJ shipped to an organization in bulk. Additional shipping costs may be incurred for certain destinations and delivery speeds.

We hope we can count on your support!



Ole J. Jacobsen, Editor and Publisher

Supporters and Sponsors

Supporters:



Diamond Sponsors:



Ruby Sponsor:



Sapphire Sponsors:

Emerald Sponsors:



Corporate Subscribers:



For more information about sponsorship, please contact sponsor@protocoljournal.org

Individual Sponsors:

Fabrizio Accatino, Scott Aitken, Matteo D'Ambrosio, Danish Ansari, John Bigrow, Axel Boeger, Kevin Breit, Ilia Bromberg, Christophe Brun, Gareth Bryan, Jon Harald Bøvre, Olivier Cahagne, Roberto Canonico, Lj Cemerar, Dave Chapman, Stefanos Charchalakis, Greg Chisholm, Narelle Clark, Steve Corbató, Dave Crocker, Morgan Davis, Freek Dijkstra, Geert Van Dijk, Karlheinz Dölger, Peter Robert Egli, George Ehlers, Peter Eisses, Torbjörn Eklöv, ERNW GmbH, ESdatCo, Mikhail Evstiounin, Christopher Forsyth, Edward Gallagher, Chris Gamboni, Xosé Bravo Garcia, Serge Van Ginderachter, Greg Goddard, Octavio Alfageme Gorostiaga, Barry Greene, Geert Jan de Groot, Gulf Coast Shots, Martin Hannigan, John Hardin, Headcrafts SRLS, Edward Hotard, Bill Huber, Hagen Hultzsich, Karsten Iwen, David Jaffe, Dennis Jennings, Jim Johnston, Jonatan Jonasson, Daniel Jones, Amar Joshi, Merike Kaeo, David Kekar, Shan Ali Khan, Nabeel Khatri, Henry Kluge, Alexander Kogan, Terje Krogdahl, Bobby Krupczak, Warren Kumari, Darrell Lack, Yan Landriault, Markus Langenmair, Fred Langham, Richard Lamb, Tracy LaQuey Parker, Sergio Loreti, Guillermo a Loyola, Hannes Lubich, Dan Lynch, Alexis Madriz, Michael Malik, Yogesh Mangar, Bill Manning, Harold March, David Martin, Gabriel Marroquin, Carles Mateu, Juan Jose Marin Martinez, Brian McCullough, Carsten Melberg, Bart Jan Menkveld, William Mills, Andrea Montefusco, Fernando Montenegro, Tariq Mustafa, Stuart Nadin, Krishna Natarajan, Darryl Newman, Ovidiu Obersterescu, Mike O'Connor, Carlos Astor Araujo Palmeira, Alexis Panagopoulos, Manuel Uruena Pascual, Dipesh Patel, Dan Paynter, Chris Perkins, Rob Pirnie, Blahoslav Popela, Tim Pozar, David Raistrick, Priyan R Rajeevan, Paul Rathbone, Justin Richards, Mark Risinger, Ron Rockrohr, Carlos Rodrigues, Boudhayan Roychowdhury, Babak Saberi, George Sadowsky, Scott Sandefur, Arturas Satkovskis, Phil Scarr, Jeroen Van Ingen Schenau, Roger Schwartz, SeenThere, Scott Seifel, Yaron Sheffer, Tj Shumway, Thorsten Sideboard, Helge Skrivervik, Darren Sleeth, Mark Smith, Job Sniijders, Peter Spekreijse, Thayumanavan Sridhar, Matthew Stenberg, Clinton Stevens, Viktor Sudakov, Edward-W. Suor, Roman Tarasov, Phil Tweedie, Unitek Engineering AG, John Urbanek, Martin Urwaleck, Betsy Vanderpool, Surendran Vangadasalam, Alejandro Vennera, Luca Ventura, Tom Vest, Andrew Webster, Jd Wegner, Rick Wesson, Peter Whimp, Pindar Wong, Bernd Zeimetz.

(Latest list can always be found on our website)

For more information about sponsorship, please contact [**sponsor@protocoljournal.org**](mailto:sponsor@protocoljournal.org)

The
Internet Protocol *Journal*

