

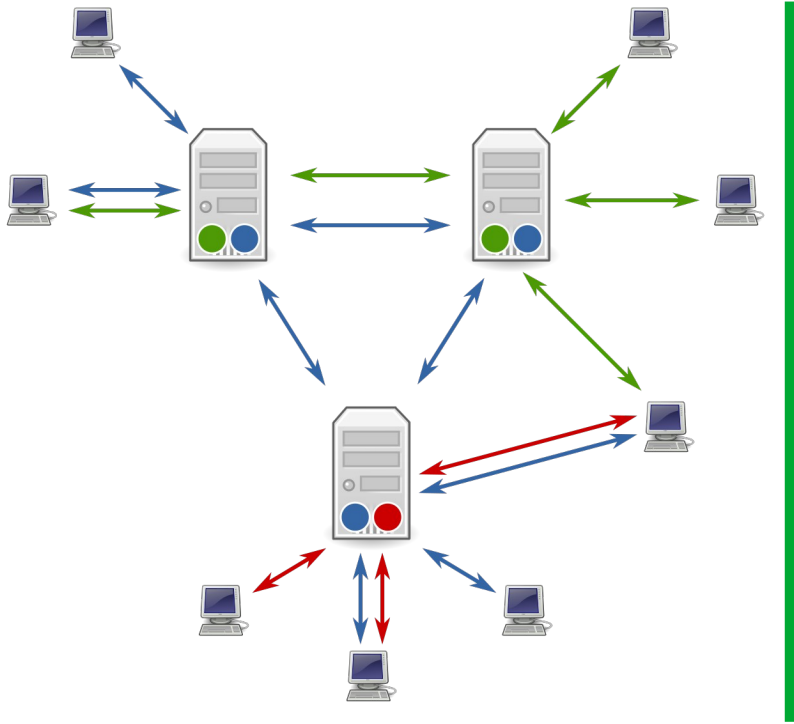


# Reviving Usenet



# Agenda

- What is Usenet
- The Rise and Fall of Usenet
- Back from the Dead?
- Questions to be Answered
- Stories from Usenet



What is Usenet?

# About Me

- Training Engineer at SUSE
- Board Member for B8MB
- Volunteer for Tor Project
- All around nerd

# What is Usenet?

Usenet is a worldwide distributed discussion network.

It is the original long-form messaging system that predates the Internet as we know it.

# How does it work?

Users read and send articles (messages) on a News server. That server exchanges articles with other News servers in the network. The collection of servers is known as the Usenet.

# Benefits of Usenet

- Decentralized
- Simplicity
- Anonymous
- Owned by no one
- Resilient
- Resistant to censorship

# Organization

Usenet is organized into Newsgroups. Each group is generally a topic for discussion for that group.

Newsgroups are organized into hierarchies.

- alt.bitcoins is in the alt.\* hierarchy
- sci.crypt is in the sci.\* hierarchy



# The Usenet Big-8



**comp.\***

**sci.\***

**misc.\***

**soc.\***

**news.\***

**talk.\***

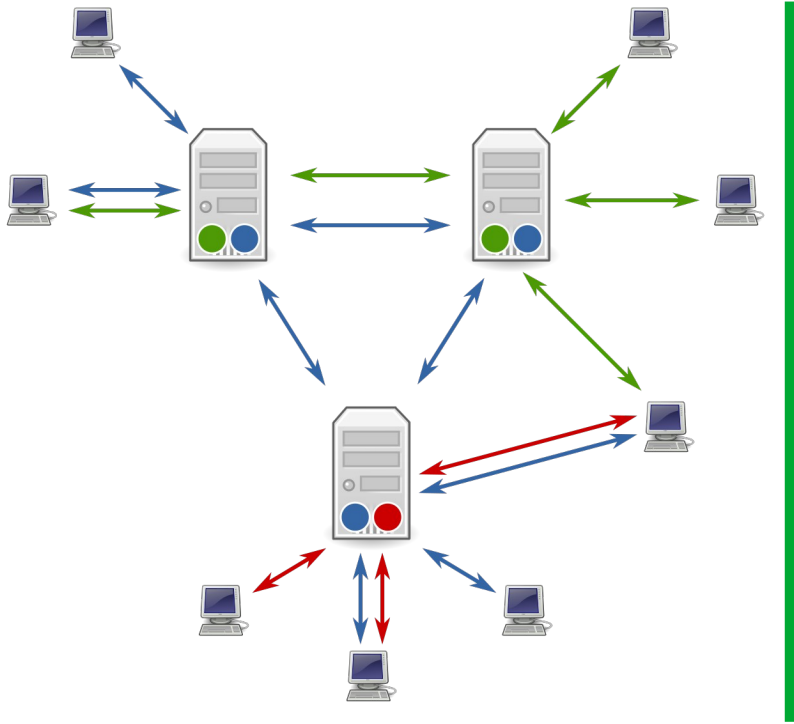
**rec.\***

**humanities.\***

# The Big-8 Management Board



- Creates well-named, well-used newsgroups in the Big-8 Usenet hierarchies
- Makes necessary adjustments to existing groups
- Removes groups that are not well-used
- Assists and encourages the support of a canonical Big-8 newsgroup list by Usenet sites




# The Rise and Fall of Usenet

# A Little History...

In 1980...

There was no Internet

There was only the ARPANET and few had access



It was commonly accepted at the time that to join the ARPANET took political connections and \$100,000.

# Better than email

Email had been around for years before Usenet, but it was limited to the people using the same computer

There was no way to directly talk to people outside with the ARPANET






<https://today.duke.edu/2010/05/usenet.html>



<https://www.cs.unc.edu/History/EarlyAdulthood.html>



# The Beginning



Year	Sites (approx)	Articles/Day (average)
1979	3	2
1980	15	10
1981	150	20
1982	400	50
1983	600	120
1984	900	225
1985	1300	375
1986	2500	500
1987	5000	1000
1988	11000	1800

"Managing Usenet" David Lawrence





**Complete aggregate news flow, worldwide**  
Line width proportional to directional effective flow volume

# The Eternal September



**WELCOME TO**  
**aol**  
The World's Most Popular  
Internet Online Service

**New!**  
 There's been a lot of press lately about "marginal behavior" in the online universe. Here's the skinny on the subject from a true Internet insider. [▶ read more...](#)

**New!**  
 Ready to jump into newsgroups? Newsgroup Scoop helps you find your home on Usenet. This week, read a review of [soc.genealogy.misc](#).  
[▶ read more...](#)

**Only on AOL**  
 Are you still getting the best deal for your online dollar? You are if you're an AOL member. [▶ read more...](#)

**Navigation Sidebar:**  
WELCOME  
WHAT'S NEW  
ONLY ON AOL  
TOUR AOL  
TRY AOL  
RANTS & SLANTS  
ABOUT THE COMPANY  
SEARCH  
CONTACT US  
SITE MAP  
AOL Member's Choice  
Check out the sites that are most popular with our members!

## **Google Acquires Usenet Discussion Service and Significant Assets from Deja.com**

### **Award-Winning Search Engine Launches Beta Version of Usenet Newsgroup Search**

**MOUNTAIN VIEW, Calif. - February 12, 2001** - Google Inc. today announced that it has acquired Deja.com's Usenet Discussion Service. This acquisition provides Google with Deja's entire Usenet archive (dating back to 1995), software, domain names including deja.com and dejanews.com, company trademarks, and other intellectual property. Financial terms of this transaction were not released.

Available now at <http://groups.google.com>, this powerful new Usenet search feature enables Google users to access the wealth of information contained in more than six months of Usenet newsgroup postings and message threads. Once the full Deja Usenet archive is added, users will be able to search and browse more than 500 million archived messages with the speed and efficiency of a Google search. In addition to expanding the amount of searchable data, Google will soon provide improved browsing capabilities and newsgroup posting.

## Google Acquires Deja's Usenet Archive

~ Google Releases Beta Service in Transition ~

### Search Groups

Google Search

[Usenet Advanced Search](#)

[Usenet Help](#)

Search Groups (Beta)  Search the Web

---

### Browse Groups

[alt.](#) (alternative)

Any conceivable topic...

[biz.](#) (business)

Business products, services, reviews...

[comp.](#) (computers)

Hardware, software, consumer info...

[humanities.](#) (humanities)

Fine art, literature, philosophy...

[misc.](#) (miscellaneous)

Employment, health, and much more...

[More groups...](#)

[news.](#) (news)

Info about Usenet news...

[rec.](#) (recreation)

Games, hobbies, sports...

[sci.](#) (science)

Applied science, social science...

[soc.](#) (society)

Social issues, culture...

[talk.](#) (talk)

Current issues and debates...

# AOL Pulls Plug on Newsgroup Service



By [By Brian McWilliams](#), Guest Columnist | Published 16 years ago

 Follow

 15 Comments

 Like 0

 Tweet

**PERSPECTIVE** The world's largest ISP is cutting off direct access to one of the oldest, coolest -- and strangest -- parts of the Internet.

America Online has quietly announced that it will discontinue providing member access to [Usenet newsgroups](#) next month. In recent days, AOL subscribers who access keyword "Newsgroups" are greeted with a pop-up message informing them of the change: "Please Note: The AOL Newsgroup service will be discontinued in early 2005."

According to a [notice](#) on AOL's Web site, the newsgroup shut-off will occur in February, severing subscribers from the thousands of discussion groups that make up Usenet.


AOL officials weren't immediately available to explain the newsgroup shutdown. The ISP's pop-up message advises subscribers that newsgroup services are available from third-party providers. The message also notes that users with separate high-speed connections may be able to arrange newsgroup access through their broadband provider. AOL users can read newsgroups over the Web using [Google Groups](#), the message said.

# 3 top ISPs to block access to sources of child porn

Verizon, Time Warner Cable, Sprint also agree to use a quick response system, provide \$1.12M to fund further efforts

By Linda Rosencrance

June 10, 2008 12:00 PM ET

 Add a comment



---

Computerworld - [Verizon Communications Inc.](#), Time Warner Cable Inc. and [Sprint Nextel Corp.](#) have signed an agreement with [New York Attorney General Andrew Cuomo](#) to shut down access to two major sources of child pornography.

This is the first time that three of the world's largest Internet service providers have agreed to eliminate access to child pornography newsgroups, which are major suppliers of the illegal images, according to a [statement](#) from Cuomo's office. The ISPs have also agreed to purge their servers of child pornography Web sites identified by the National Center for Missing & Exploited Children, the Cuomo said in the statement.

"Our strategy was somewhat of a different strategy than most law enforcement agencies take. Rather than going after the individual user, our strategy was to go toward the supplier side," Cuomo said at a press conference today. "If you have a pool of users and the pool keeps refilling, rather than trying to empty the pool with a bucket, go turn off the faucet and stop the flow of material."

An undercover investigation by the attorney general's office found that "newsgroups" -- online public bulletin boards where users can upload and download files -- are a major source of online child pornography, the statement said. Because users access newsgroups through their ISPs, Verizon, Time Warner Cable and Sprint have agreed to completely block access to all child pornography newsgroups.



# A PIECE OF INTERNET HISTORY

Duke to shut Usenet server, home to the first electronic newsgroups

---

CARA BONNETT

SHARE THIS STORY



This week marks the end of an era for one of the earliest pieces of Internet history, which got its start at Duke more than 30 years ago.

On May 20, Duke will shut down its Usenet server, which provides access to a worldwide electronic discussion network of newsgroups started in 1979 by two Duke graduate students, Tom Truscott and Jim Ellis.

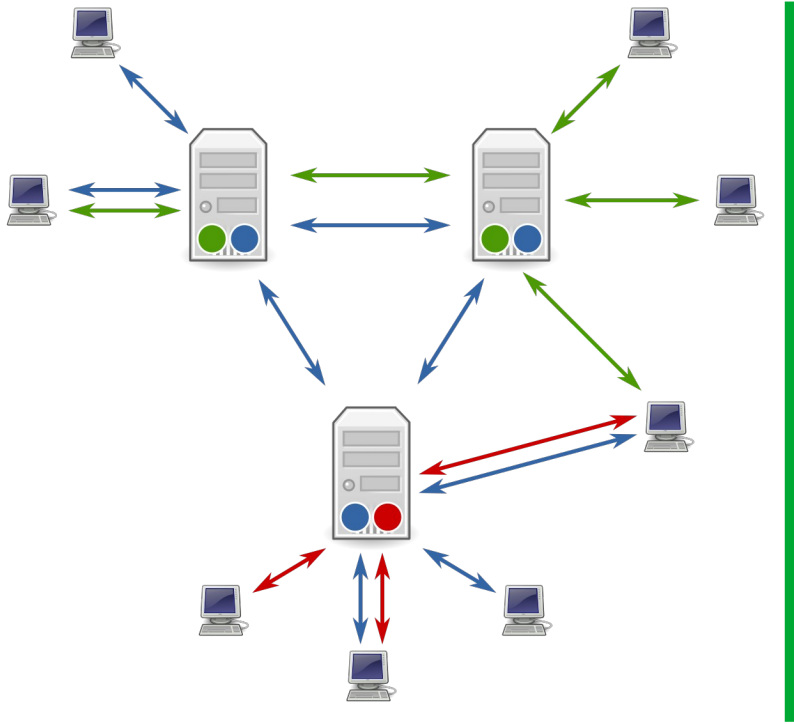
Working with a graduate student at UNC-Chapel Hill, they came up with a simple program to exchange messages and files between computers at Duke and UNC using telephone modems.

The "Users Network," Usenet for short, grew into an international electronic discussion forum with more than 120,000 newsgroups dedicated to various topics, from local dining to computer programming languages. Each group had a distinctive name such as soc.history or sci.math.

# Spam

Subject	Score	Author	Lines	Date
<b>BUY YOUR PRESCRIPTION PILLS WITHOUT PRESCRIPTION</b> 🍷 (adderall,hydromorphone,hydrocod...	-9999	#Adderall, #Oxycodone, #vyvanse, #Xanax <keysto...	101	Mar 19 2019
<b>Where to Order Pills :-Lyrica , Vyvanse , OxyContin , Xanax-2mg, Oxycodone , Ritalin, Adderall xr, Dil...</b>	-9999	#Adderall, #Oxycodone, #vyvanse, #Xanax <keysto...	101	Mar 17 2019
<b>Where to Order online :-Lyrica , Vyvanse , OxyContin , Xanax 2mg, Suboxone, Oxycodone , Ritalin, Ad...</b>	-9999	#Adderall, #Oxycodone, #vyvanse, #Xanax <keysto...	102	Mar 16 2019
<b>Best online pharmacy to buy adderall</b>  { Wickr id: intermeds247 } Order vyvanse from secured sourc...	-9999	#Adderall, #Oxycodone, #vyvanse, #Xanax <keysto...	101	Mar 16 2019
<b>Us congress hearing of maan alsaan Money laundry ... قضية الكونغرس لغسيل الأموال للمليادير</b>	-9999	lolo sami <loveu4ever.earth@gmail.com>	21	Mar 10 2019
<b>Best online pharmacy to buy adderall</b>  { Wickr id: intermeds247 } Order vyvanse from secured sourc...	-9999	#Adderall, #Oxycodone, #vyvanse, #Xanax <keysto...	102	Mar 08 2019
<b>PHARMACEUTICAL STORE</b> ♥♥♥.♥contact:+1(318)996-1772 ♥♥♥ Whatsapp or Wickr ID: legitvendo...	-9999	"Website / References Available" <johnsonlander11...	124	Mar 08 2019
<b>PHARMACEUTICAL STORE</b> ♥♥♥.♥contact:+1(318)996-1772 ♥♥♥ Whatsapp or Wickr ID: legitvendo...	-9999	"Website / References Available" <johnsonlander11...	123	Mar 08 2019
<b>STORE</b> ♥♥♥.♥contact:+1(318)996-1772 ♥♥♥ Whatsapp or Wickr ID: legitvendo2019 .....📄📄📄📄📄 ...	-9999	"Website / References Available" <johnsonlander11...	0	Mar 05 2019
The free.* FAQ (version 2.0.1)	-9999	tskirvin@killfile.org (Tim Skirvin)	338	Mar 01 2019
<b>New Open Contract Positions-----BI Analyst &amp; BI Developer-----NYC, NY &amp; Sunnysvale, CA</b>	-9999	kirantoj.1.4.3@gmail.com	54	Feb 27 2019
<b>Best online pharmacy to buy adderall</b>  { Wickr id: intermeds247 } Order vyvanse from secured sourc...	-9999	Painkillers - Stimulants - AntiAnxiety pills <keysto...	81	Feb 24 2019
<b>Best online store to Order painkillers , adhd and xanax online   adderall , Nembutal ,Email: keystone...</b>	-9999	Painkillers - Stimulants - AntiAnxiety pills <keysto...	81	Feb 23 2019
<b>♥♥♥AMAZING PHARMACEUTICAL STORE</b> ♥♥♥.♥contact:+1(318)996-1772 ♥♥♥ Whatsapp or Wickr ...	-9999	"Website / References Available" <johnsonlander11...	124	Feb 23 2019
<b>♥♥♥AMAZING PHARMACEUTICAL STORE</b> ♥♥♥.♥contact:+1(318)996-1772 ♥♥♥ Whatsapp or Wickr ...	-9999	"Website / References Available" <johnsonlander11...	124	Feb 23 2019
<b>^ where to Order Vyvanse ,Adderall xr, OxyContin , lyrica , concerta , Suboxone , Percs , Ritalin , Xelo...</b>	-9999	Painkillers - Stimulants - AntiAnxiety pills <keysto...	82	Feb 23 2019
<b>^ where to Order Vyvanse ,Adderall xr, OxyContin , lyrica , concerta , Suboxone , Percs , Ritalin , Xelo...</b>	-9999	Painkillers - Stimulants - AntiAnxiety pills <keysto...	82	Feb 23 2019
<b>♥♥♥AMAZING PHARMACEUTICAL STORE</b> ♥♥♥.♥contact:+1(318)996-1772 ♥♥♥ Whatsapp or Wickr ...	-9999	"Website / References Available" <johnsonlander11...	126	Feb 20 2019
<b>♥♥♥AMAZING PHARMACEUTICAL STORE</b> ♥♥♥.♥contact:+1(318)996-1772 ♥♥♥ Whatsapp or Wickr ...	-9999	"Website / References Available" <johnsonlander11...	126	Feb 20 2019
<b>Buy Prescription Drugs Securely online</b> 🍷 (adderall,Klonopin,hydrocodone, alprazolam Xanax,Dila...	-9999	Painkillers - Stimulants - AntiAnxiety pills <keysto...	75	Feb 16 2019
<b>Norco , Oxymorphone pills and powder morphine, Watson540, Valium, Oxycodone, MDMA, Opana, O...</b>	-9999	Painkillers - Stimulants - AntiAnxiety pills <keysto...	76	Feb 15 2019
<b>Order real</b> 🍷 OxyContin , vyvanse , HYDROCODONE, concerta, PERCOCET, Seconal , ROXICODONE, o...	-9999	Painkillers - Stimulants - AntiAnxiety pills <keysto...	75	Feb 14 2019
<b>Order Vyvanse ,Adderall xr, OxyContin , lyrica , concerta , Suboxone , Percs , Ritalin , Xeloda, Advair ...</b>	-9999	Painkillers - Stimulants - AntiAnxiety pills <keysto...	76	Feb 14 2019
<b>Discreet &amp; Reliable Services</b> 🍷. # Buy Painkillers  Anti-Anxiety  Anti-Depression  Weight-loss  Pain...	-9999	Painkillers - Stimulants - AntiAnxiety pills <keysto...	75	Feb 13 2019
<b>Us congress hearing of maan alsaan Money laundry ... قضية الكونغرس لغسيل الأموال للمليادير</b>	-9999	lolo sami <loveu4ever.earth@gmail.com>	16	Feb 11 2019
<b>♥♥♥AMAZING PHARMACEUTICAL STORE</b> ♥♥♥.♥contact:+1(318)996-1772 ♥♥♥ Whatsapp Order O...	-9999	"Website / References Available" <johnsonlander11...	0	Feb 10 2019
<b>♥♥♥AMAZING PHARMACEUTICAL STORE</b> ♥♥♥.♥contact:+1(318)996-1772 ♥♥♥ Whatsapp .....R...	-9999	"Website / References Available" <johnsonlander11...	0	Feb 10 2019





Back from the Dead?

# Dead Board

Sometime in 2017, all of the members of the Big-8 Management board stepped down or had their memberships lapse without anyone to take up the mantle

# Dead Board

Without the Big-8 board, no new newsgroups could be created, old ones could not be removed, and changes could not be made to existing newsgroups.

# Dead Board

Groups that had once been moderated were now completely silent without a moderator.

It looked like the death of much of the Usenet was finally at hand.

# A Thread from Reddit

 **r/usenet** · Posted by u/Capitan\_Picard 8 months ago 

## Big 8 Management Board

I thought some of you might be interested in this. This is an email that I wrote earlier today. I will post again if I get a reply.

Dear Big 8 board,

I was interested in created a new comp.\* newsgroup. However, the latest message in the news.groups.proposals mailing list is from 2018.

I would like to know what is the status of the Big 8 board. Has this organization been decommissioned? If not, I will submit a new RFD, possibly the first in nearly 2 years, and I would like to blog about my experience and try to garner new curiosity about Usenet on Reddit and other places.

Thank you for your time.



# A Glimmer of Hope

Shortly after contacting former board members, we were asked by them if we could tell a little about ourselves with the goal of taking over the board.

# My Goals for the B8MB

- See the B8MB staffed with active volunteers.
- Make contacts with current Usenet providers to ensure that the canonical list of Big-8 newsgroups is observed and used.
- Begin accepting RFD's for new newsgroups. **Growth is life!**
- Begin auditing unused, outdated newsgroups
- Make contacts with journalists, YouTubers, and others in the IT world to get the word out that Usenet is in fact alive and well and to drive new users to it.

# Handing over the keys

**Subject:** Status of the Big 8 Management Board  
**From:** board@big-8.org (Big 8 Management Board)  
▼ **Date:** Thu, 30 Apr 2020 01:06:49 EDT  
**User-Agent:** MacSOUP/2.8.5 (ea919cf118) (Mac OS 10.14.6)  
**Followup-To:** news.groups

This is an official communication from the Big-8 Management Board. Please note that followups are set to news.groups.

After a careful review of the Big 8 Management Board's activity and process, all remaining members of the Big 8 Management Board opted not to consider re-election and instead have voted to install two new volunteers as the new members of the Big 8 Management Board. These two volunteers are:

Tristan Miller Jason Evans

We believe these volunteers have the technical and social skills necessary to maintain the Big-8. Please give them your support while they develop their vision for the future mission and goals of the Big 8 Board.

Kathy Morgan, Chairperson Emeritus Bill Horne, former Chairperson

# Work...

Over the next few weeks, I set up a new web and mail server for our own needs.

And then the web server where the website had been hosted crashed before we were able to access it.

# Another Member

**Subject:** Status of the Big-8 Management Board

**From:** Jason Evans <jsevans@big-8.org>

**Date:** Wed, 22 Jul 2020 08:43:37 EDT

**NewsGroups:** news.announce.newgroups,news.groups

**User-Agent:** Pan/0.146 (Hic habitat felicitas; 8107378 git@gitlab.gnome.org:GNOME/pan.git)

**Followup-To:** news.groups

This is an official communication from the Big-8 Management Board. Please note that followups are set to news.groups.

After a careful review of the Big-8 Management Board's activity and process, on May 8, 2020, a new member was voted in to the Board:

Rayner Lucas

We believe that he has the technical and social skills necessary to help maintain the Big-8. Please give him your support while we continue the vision, mission, and goals of the Big-8 Board.

Jason Evans, Co-chair Tristan Miller, Co-chair

# Progress and Successes



Usenet Big-8  
Management Board



[About the Board](#) ▾

[About Usenet](#) ▾

[Policies and guides](#) ▾

[Reference library](#) ▾



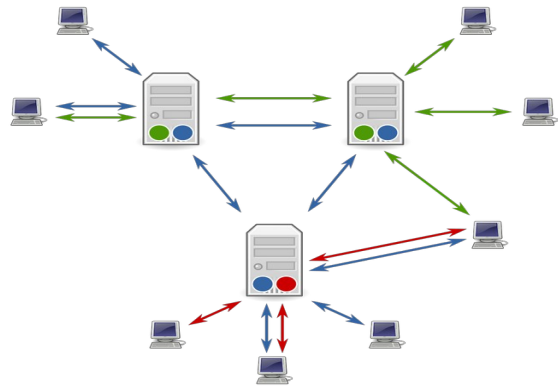
## The Usenet Big-8 Management Board

- creates well-named, well-used newsgroups in the Big-8 Usenet hierarchies,
- makes necessary adjustments to existing groups,
- removes groups that are not well-used, and
- assists and encourages the support of a canonical Big-8 newsgroup list by Usenet sites.

### Latest news

- [2020-08-15: Big-8 Management Board Website and Meeting Minutes](#)
- [2020-07-22: Big-8 Management Board - Current Membership & Composition](#)
- [2020-04-30: Big-8 Management Board - Current Membership & Composition](#)

[Archived announcements](#)



Questions to be Answered



Why are we doing this?

Does anyone even care about Usenet anymore?

Why should anyone care?






Why are we doing this?



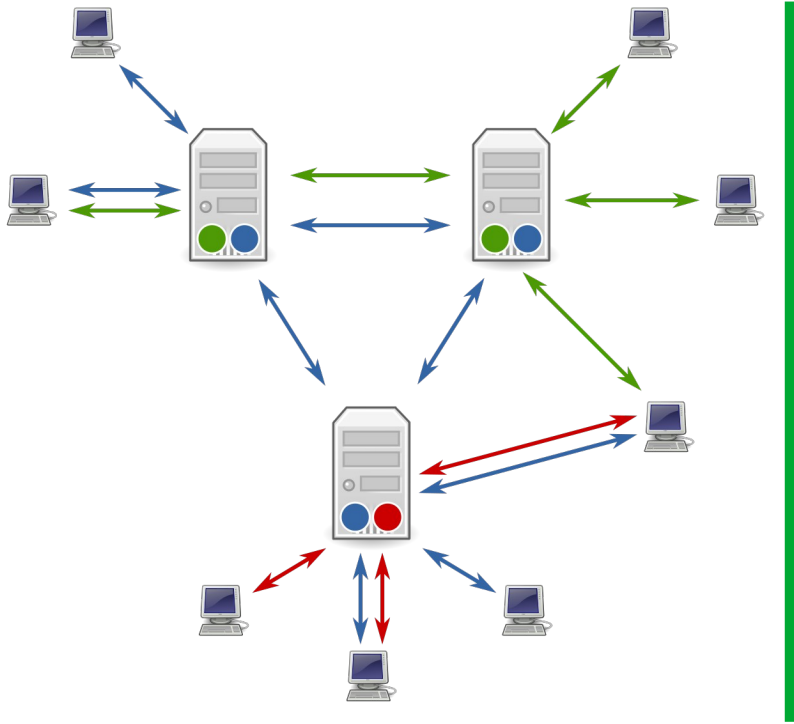
Does anyone even care about Usenet anymore?



Why should anyone care?

# The Future

- Spread the word
- Keep on being a normal and stable board



Stories from Usenet

# What is Usenet?

"Usenet is like a herd of performing elephants with diarrhea. Massive, difficult to redirect, awe-inspiring, entertaining, and a source of mind-boggling amounts of excrement when you least expect it."

– Gene Spafford, 1992



# A Grad Student from Finland

# a (free) operating system

I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu) for 386(486) AT clones.

...

I've currently ported bash(1.08) and gcc(1.40), and things seem to work.

This implies that I'll get something practical within a few months, and I'd like to know what features most people would want. Any suggestions are welcome, but I won't promise I'll implement them :-)



# Subject: LINUX is obsolete

As most of you know, for me MINIX is a hobby, something that I do in the evening when I get bored writing books and there are no major wars, revolutions, or senate hearings being televised live on CNN. My real job is a professor and researcher in the area of operating systems.

As a result of my occupation, **I think I know a bit about where operating are going in the next decade or so.**



Kremvax

# From Russia with Love

From: chernenko@kremvax.UUCP (K. Chernenko)

Newsgroups: net.general,eunet.general,net.politics,eunet.politics

Subject: USSR on Usenet

Date: Sun, 1-Apr-84 11:02:52 EST

Well, today, 840401, this is at last the Socialist Union of Soviet Republics joining the Usenet network and saying hallo to everybody.

One reason for us to join this network has been to have a means of having an open discussion forum with the American and European people and making clear to them our strong efforts towards attaining peaceful coexistence between the people of the Soviet Union and those of the United States and Europe.

We have been informed that on this network many people have given strong anti-Russian opinions, but we believe they have been misguided by their leaders, especially the American administration, who is seeking for war and domination of the world.

By well informing those people from our side we hope to have a possibility to make clear to them our intentions and ideas.

Some of those in the Western world, who believe in the truth of what we say have made possible our entry on this network; to them we are very grateful. We hereby invite you to freely give your comments and opinions.

Here are the data for our backbone site:

Name: moskvax

Organization: Moscow Institute for International Affairs


Contact: K. Chernenko

And now, let's open a flask of Vodka and have a drink on our entry on this network. So:

NA ZDAROVJE!

--


K. Chernenko, Moscow, USSR



This isn't funny. I hope you get so much mail in response to this that you're reading it for a week straight. F\*\*k you.



get out of our network!!!




If your net contact is used as another channel for government-authored propaganda, not too many of us will be interested in reading your messages.



Wow!

Is this for real? Honest-to-god Russia? Gee. I never thought that I'd see it. Does this imply that Unix is behind the Iron curtain?




I want to voice my support of those who feel that the "April Fool's" joke about the USSR on the USENET was bad form. Particularly when it appeared in what many of us had come to rely on as the authoritative source for nnews[sic] about the network.





Welcome! [From an isolated CIA outpost]



Does anyone seriously doubt that Chernenko, who has no expertise in foreign policy, and probably can't speak, let alone write, in another language, would post something to the net? That joke was in good taste. **Anyone who feels taken in by that joke should ask him/herself why the net is so central to his/her life.**



Cypherpunks

# Untraceable Digital Cash

From: tcmay@got.net (Tim May)

Subject: Untraceable Digital Cash, Information Markets, and BlackNet

Date: 1997/02/24

Newsgroups: alt.cypherpunks,comp.org.eff.talk,alt.privacy

A copy of my paper "Untraceable Digital Cash, Information Markets, and BlackNet is now at this URL: [www.law.miami.edu/~froomkin/articles/tcmay.htm](http://www.law.miami.edu/~froomkin/articles/tcmay.htm)

This is my position paper for the panel discussion "Governmental and Social Implications of Digital Money" at the upcoming Computers, Freedom, and Privacy (CFP) Conference in San Francisco, March 11-14, 1997.

This paper summarizes several of the ideas I often focus on. A much longer version of this paper is slated to appear later this year in the new Vernor Vinge re-issue of "True Names." My paper, "True Nyms and Crypto Anarchy," deals with the issues of pseudonyms, digital money, and crypto anarchy at length.

--Tim May



More Projects

# Security and Privacy

From: kelly@well.sf.ca.us (Kelly Goen)

Newsgroups: alt.sources

Subject: Pretty Good Privacy(tm) Email Privacy Module Sources 1/5

Date: 6 Jun 91 21:07:36 GMT

This is release file 1/5 of Phil Zimmermans Pretty Good Privacy(tm) An RSA/Hybrid Email Privacy System release under the aegis of Copyleft. Although the source code and Binaries are totally Freeware, the algorithms embedded within are Patented Items. PK Partners of Sunnyvale, California is the current holder of the Patents. To utilize this software for other than educational purposes(i.e. Real Life Usage) you should Contact PK Partners and obtain Licensing. The author accepts no liability for your actions in either case. Contact Information for PK Partners is given in the documentation.

section 1 of uuencode 2.8 of file pgp10src.zip by R.E.M.

# Movie Lover

Newsgroups: rec.arts.movies,alt.cult-movies  
From: c...@hplb.hpl.hp.com (Colin Needham)  
Subject: MOVIE DATABASE: version 2.6 now available  
Date: Fri, 13 Aug 1993 06:12:41 GMT

This is a note to announce that version 2.6 of the movie database is now available. This version has a fully automatic installation script which will be posted in a separate article. The package uses the information contained on the various rec.arts.movies lists to create and search a massive movie database.

New features are:

- \* support for the new miscellaneous cast lists - more than doubling the size of the cast databases!
- \* automatic support for compressed database files - thanks to Timo Lamminjoki for this change.
- \* easy installation: a script automatically downloads all the files and creates the databases for you!
- \* a number of minor bug fixes including one in 'gendb' which caused problems on some machines. If you were affected, try this new version.

# Special thanks to

- Tristan Miller
- Rayner Lucas
- Todd M. McComb
- r/Usenet
- Steven Bellovin
- Kathy Morgan
- Bill Horne
- alt.folklore.computers



Your Text Here

2020



Thank You



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