

# THE CATMAN'S LAIR

## HACKER RESOURCE FILES



<http://www.pryde-lands.com/catman/>

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## A History of Hacking

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Hacking has been around for more than a century. In the 1870s, several teenagers were flung off the country's brand new phone system by enraged authorities. Here's a peek at how busy hackers have been in the past 40 years.

**Prehistory (before 1969)** In the beginning there was the phone company --the brand-new Bell Telephone, to be precise. And there were nascent hackers. Of course in 1878 they weren't called hackers yet. Just practical jokers, teenage boys hired to run the switchboards who had an unfortunate predilection for disconnecting and misdirecting calls ("You're not my Cousin? Operator! Who's that snickering on the line? Hello?"). Now you know why the first transcontinental communications network hired female operators.

Flash forward to the first authentic computer hackers, circa the 1960s. Like the earlier generation of phone pranksters, MIT geeks had an insatiable curiosity about how things worked. In those days computers were mainframes, locked away in temperature-controlled, glassed-in lairs. It cost megabucks to run those slow-moving hunks of metal; programmers had limited access to the dinosaurs. So the smarter ones created what they called "hacks" -programming shortcuts – to complete computing tasks more quickly. Sometimes their shortcuts were more elegant than the original program.

Maybe the best hack of all time was created in 1969, when two employees at Bell Labs' think tank came up with an open set of rules to run machines on the computer frontier. Dennis Ritchie and Ken Thompson called their new standard operating system UNIX. It was a thing of beauty.

### 1928

Internet Growth	Backbones: None - Hosts: None
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- Early use of the word "punk" to signify a criminal

### 1934

- The Communications Act of 1934 is passed, it is the first effort to regulate the telephone industry at the federal level.

### 1934

- The first electronic digital computer, the [Atanasoff-Berry Computer](#) is created by John Vincent Atanasoff and Clifford Berry at Iowa State University with a \$7000 grant.

### 1940

- First electronic computers in US, UK, and Germany

## 1947

- John Bardeen, William Shockley, and Walter Brattain invent the transistor while at Bell Labs. They received the Nobel Prize in Physics in 1956 for their work.

## 1948

- The word "cybernetics" coined by Norbert Wiener

## 1955

- *The Naked Lunch* published

## 1957

- The USSR launches Sputnik, the first artificial earth satellite. In response, the United States forms the Advanced Research Projects Agency (ARPA) within the Department of Defense (DoD) to establish US lead in science and technology applicable to the military.

## 1960

- The word "cyborg" coined by Manfred Clynes
- "Spacewar" first videogame on PDP-1 at MIT
- Donald Bitzer initiates [PLATO](#) computer-based education project
- University facilities with huge mainframe computers, like MIT's artificial intelligence lab, become staging grounds for hackers. At first, "hacker" was a positive term for a person with a mastery of computers who could push programs beyond what they were designed to do.

## 1962

- RAND Paul Baran, of the RAND Corporation (a government agency), was commissioned by the U.S. Air Force to do a study on how it could maintain its command and control over its missiles and bombers, after a nuclear attack. This was to be a military research network that could survive a nuclear strike, decentralized so that if any locations (cities) in the U.S. were attacked, the military could still have control of nuclear arms for a counter-attack. Baran's finished document described several ways to accomplish this. His final proposal was a packet switched network.  
*"Packet switching is the breaking down of data into datagrams or packets that are labeled to indicate the origin and the destination of the information and the forwarding of these packets from one computer to another computer until the information arrives at its final destination computer. This was crucial to the realization of a computer network. If packets are lost at any given point, the message can be resent by the originator."*

## 1963

- Doug Engelbart's "A Conceptual Framework"
- Quillian lays AI groundwork for semantic nets
- ASCII 7-bit standard digitizes alphabet; first 'teletext'

## 1968

Internet Growth	Backbones: 50Kbps ARPANET - Hosts: 4
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- [\*Do Androids Dream of Electric Sheep\*](#) published
- ARPA awarded the ARPANET contract to BBN. BBN had selected a Honeywell minicomputer as the base on which they would build the switch. The physical network was constructed in 1969, linking four nodes: University of California at Los Angeles, SRI (in Stanford), University of California at Santa Barbara, and University of Utah. The network was wired together via 50 Kbps circuits.

**Elder Days (1970-1979)** In the 1970s the cyber frontier was wide open. Hacking was all about exploring and figuring out how the wired world worked.

Around 1971 a Vietnam vet named John Draper discovered that the giveaway whistle in Cap'n Crunch cereal boxes perfectly reproduced a 2600 megahertz tone. Simply blow the whistle into a telephone receiver to make free calls; thanks for using AT&T.

Counterculture guru Abbie Hoffman (above) followed the captain's lead with The Youth International Party Line newsletter. This bible spread the word on how to get free phone service.

"Phreaking" didn't hurt anybody, the argument went, because phone calls emanated from an unlimited reservoir. Hoffman's publishing partner, Al Bell, changed the newsletter's name to TAP, for Technical Assistance Program. True believers have hoarded the mind-numbingly complex technical articles and worshiped them for two decades.

The only thing missing from the hacking scene was a virtual clubhouse. How would the best hackers ever meet? In 1978 two guys from Chicago, Randy Sousa and Ward Christiansen, created the first personal-computer bulletin-board system. It's still in operation today.

### **Early 1970s**

- John Draper makes a long-distance call for free by blowing a precise tone into a telephone that tells the phone system to open a line. Draper discovered the whistle as a give-away in a box of children's cereal. Draper, who later earns the handle "Captain Crunch," is arrested repeatedly for phone tampering throughout the 1970s.
- Yippie social movement starts YIPL/TAP (Youth International Party Line/Technical Assistance Program) magazine to help phone hackers (called "phreaks") make free long-distance calls.
- Two members of California's Homebrew Computer Club begin making "blue boxes," devices used to hack into the phone system. The members, who adopt handles "Berkeley Blue" (Steve Jobs) and "Oak Toebark" (Steve Wozniak), later go on to found Apple Computer.

## 1972

Internet Growth	Backbones: 50Kbps ARPANET - Hosts: 23
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- K.W. Jeter completes *Dr. Adder* (Spring)

- The first e-mail program was created by Ray Tomlinson of BBN.
- The Advanced Research Projects Agency (ARPA) was renamed The Defense Advanced Research Projects Agency (or DARPA)
- ARPANET was currently using the Network Control Protocol or NCP to transfer data. This allowed communications between hosts running on the same network.

## 1973

Internet Growth	Backbones: 50Kbps ARPANET - Hosts: 23+
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- "The Girl Who Was Plugged In" published in *New Dimensions 3*
- Development began on the protocol later to be called TCP/IP, it was developed by a group headed by Vinton Cerf from Stanford and Bob Kahn from DARPA. This new protocol was to allow diverse computer networks to interconnect and communicate with each other.
- [Gravity's Rainbow published](#)

## 1974

Internet Growth	Backbones: 50Kbps ARPANET - Hosts: 23+
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- First Use of term Internet by Vint Cerf and Bob Kahn in paper on Transmission Control Protocol.

## 1975

- Microsoft founded
- [Shockwave Rider published](#)

## 1976

Internet Growth	Backbones: 50Kbps ARPANET, plus satellite and radio connections - Hosts: 111+
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- The Ramones release first album; punk begins
- Dr. Robert M. Metcalfe develops Ethernet, which allowed coaxial cable to move data extremely fast. This was a crucial component to the development of LANs.
- The packet satellite project went into practical use. SATNET, Atlantic packet Satellite network, was born. This network linked the United States with Europe.
- Surprisingly, it used commercial Intelsat satellites that were owned by the International Telecommunications Satellite Organization, rather than government satellites.
- UUCP (Unix-to-Unix CoPy) developed at AT&T Bell Labs and distributed with UNIX one year later.
- The Department of Defense began to experiment with the TCP/IP protocol and soon decided to require it for use on ARPANET.

## •1977

- Apple Computers founded (April)
- "Fragments of a Hologram Rose" published in *Unearth* (summer)
- *Never Mind the Bullocks - Here's the Sex Pistols* released; punk gets notorious
- The Clash release first album; punk gets serious

## 1978

- Generation X, with Billy Idol on lead vocals, releases first album

## 1979

- The Clash release *London Calling*
- USENET (the decentralized news group network) was created by Steve Bellovin, a graduate student at University of North Carolina, and programmers Tom Truscott and Jim Ellis. It was based on UUCP.
- The Creation of BITNET, by IBM, "Because its Time Network", introduced the "store and forward" network. It was used for email and listservs.

**The Golden Age (1980-1989)** In 1981 IBM announced a new model –a stand-alone machine, fully loaded with a CPU, software, memory, utilities, storage. They called it the "personal computer." You could go anywhere and do anything with one of these hot rods. Soon kids abandoned their Chevys to explore the guts of a "Commie 64" or a "Trash-SO."

The 1983 movie *War Games* shone a flashlight onto the hidden face of hacking, and warned audiences nationwide that hackers could get into any computer system. Hackers gleaned a different message from the film. It implied that hacking could get you girls. Cute girls.

The territory was changing. More settlers were moving into the online world. ARPANET was morphing into the Internet, and the popularity of bulletin-board systems exploded. In Milwaukee a group of hackers calling themselves the 414's (their area code. Duh.) broke into systems at institutions ranging from the Los Alamos Laboratories to Manhattan's Memorial Sloan-Kettering Cancer Center. Then the cops put the arm on them.

### **Early 1980s**

- Author William Gibson coins the term "cyberspace" in a science fiction novel called *Neuromancer*.
- In one of the first arrests of hackers, the FBI busts the Milwaukee-based 414s (named after the local area code) after members are accused of 60 computer break-ins ranging from Memorial Sloan-Kettering Cancer Center to Los Alamos National Laboratory.
- Comprehensive Crime Control Act gives Secret Service jurisdiction over credit card and computer fraud.

- Two hacker groups form, the Legion of Doom in the United States and the Chaos Computer Club in Germany.
- 2600: The Hacker Quarterly is founded to share tips on phone and computer hacking.

### Late 1980s

- The Computer Fraud and Abuse Act gives more clout to federal authorities.
- Computer Emergency Response Team is formed by U.S. defense agencies. Based at Carnegie Mellon University in Pittsburgh, its mission is to investigate the growing volume of attacks on computer networks.
- At 25, veteran hacker Kevin Mitnick secretly monitors the e-mail of MCI and Digital Equipment security officials. He is convicted of damaging computers and stealing software and is sentenced to one year in prison.
- First National Bank of Chicago is the victim of a \$70-million computer heist.
- An Indiana hacker known as "Fry Guy" -- so named for hacking McDonald's -- is raided by law enforcement. A similar sweep occurs in Atlanta for Legion of Doom hackers known by the handles "Prophet," "Leftist" and "Urvile."

### 1980

- *City Come A-Walkin'* published
- [The Artificial Kid](#) published

### 1981

Internet Growth	Backbones: 50Kbps ARPANET, 56Kbps CSNET, plus satellite and radio connections - Hosts: 213
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- ["Johnny Mnemonic"](#) published in *Omni* (May)
- National Science Foundation created backbone called CSNET 56 Kbps network for institutions without access to ARPANET. Vinton Cerf proposed a plan for an inter-network connection between CSNET and the ARPANET.
- *Spacetime Donuts* published
- "The Gernsback Continuum " published in *Universe* 11
- ["True Names"](#) published
- Sterling introduces Gibson's ["Burning Chrome"](#) to the writer's workshop in Austin

### 1982

- *Software* published (Jan.)
- Gibson attends ArmadilloCon and reads the opening chapter of his work-in-progress, [Neuromancer](#). "Behind the Mirrorshade: A Look at Punk SF" panel held. (Oct.)
- [Blade Runner](#) released
- *Tron* released

## 1983

Internet Growth	Backbones: 50Kbps ARPANET, 56Kbps CSNET, plus satellite and radio connections - Hosts: 562
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- *Cheap Truth* begins publication
- Internet Activities Board (IAB) was created in 1983.
- On January 1st, every machine connected to ARPANET had to use TCP/IP. TCP/IP became the core Internet protocol and replaced NCP entirely.
- The University of Wisconsin created Domain Name System (DNS). This allowed packets to be directed to a domain name, which would be translated by the server database into the corresponding IP number. This made it much easier for people to access other servers, because they no longer had to remember numbers.
- Gibson, Sterling and Shiner visit Rudy Rucker in Lynchburg after Balticon;
- Virginia hasn't been this hip since Thomas Jefferson was alive
- *War Games* released
- The short story "Cyberpunk" by Bruce Bethke published in *Amazing Science Fiction Stories*; this is, allegedly, the first use of the term anywhere (Nov.)
- The word "transrealism" coined by Rudy Rucker who issues "A Transreal Manifesto" in *The Bulletin of the SFWA* (Winter)

## 1984

Internet Growth	Backbones: 50Kbps ARPANET, 56Kbps CSNET, plus satellite and radio connections - Hosts: 1024
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- *Neuromancer* published; "cyberspace" coined
- The ARPANET was divided into two networks: MILNET and ARPANET. MILNET was to serve the needs of the military and ARPANET to support the advanced research component, Department of Defense continued to support both networks.
- Upgrade to CSNET was contracted to MCI. New circuits would be T1 lines, 1.5 Mbps which is twenty-five times faster than the old 56 Kbps lines. IBM would provide advanced routers and Merit would manage the network. New network was to be called NSFNET (National Science Foundation Network), and old lines were to remain called CSNET.
- *Dr. Adder* published
- *Decoder*, a film by Klaus Maeck, released
- *Frontera* published
- *Hackers: Heroes of the Computer Revolution* published
- In Japan, robots kill four humans in separate incidents
- *Terminator* released
- *2535* begins publication
- VPL Research Inc. founded by Jason Lanier
- Gardner Dozois, reviewing "hot new writers" for *The Washington Post*, refers to a group called "cyberpunks". The name sticks (Dec. 30)

## 1985

### Internet Growth

Backbones: 50Kbps ARPANET, 56Kbps CSNET, 1.544Mbps (T1) NSFNET, plus satellite and radio connections - Hosts: 1961

- *Schismatrix* published
- The National Science Foundation began deploying its new T1 lines, which would be finished by 1988.
- *20 Minutes into the Future* (aka Max Headroom) released
- *Eclipse* published
- Donna Haraway's "Manifesto for Cyborgs" published in *Socialist Review* (Apr.)
- Japanese translation of *Neuromancer* published (July)
- "Cyberpunks" panel convenes at the National SF Convention in Austin. Panelists are Rudy Rucker, John Shirley, Bruce Sterling, Lou Shiner, Pat Cadigan and Greg Bear (Aug. 31)
- "Slamdancing in SF" published in *REM* #2

## 1986

### Internet Growth

Backbones: 50Kbps ARPANET, 56Kbps CSNET, 1.544Mbps (T1) NSFNET, plus satellite and radio connections – Hosts: 2308

- *Burning Chrome* published
- The Internet Engineering Task Force or IETF was created to serve as a forum for technical coordination by contractors for DARPA working on ARPANET, US Defense Data Network (DDN), and the Internet core gateway system.
- *Hardwired* published
- "Pakistani Brain" virus infects IBM computers world-wide (Jan.)
- Rudy Rucker's "What is Cyberpunk?" appears in *REM* #3 (Feb.)
- *Count Zero* published (Mar.)
- Kim Stanley Robinson's parody "Down and Out in the year 2000" appears in *IASF* (Apr.)
- Norman Spinrad's "The Neuromantics" published in *IASF* (May)
- John Shirley confounds the elders at the Science Fiction Research Association panel "Cyberpunk or Cyberjunk" (June 28)
- *Cheap Truth* ceases publication (Aug.)
- Michael Swanwick's "A User's Guide to the Post Moderns" published in *IASF* (Nov.)
- *Mirrorshades* published (Dec.)
- *Interzone* reprints "the New Science Fiction" by Vincent Omniaveritas (Winter)

## 1987

### Internet Growth

Backbones: 50Kbps ARPANET, 56Kbps CSNET, 1.544Mbps (T1) NSFNET, plus satellite and radio connections - Hosts: 28,174

- First German translation of *Neuromancer* published by Heyne
- BITNET and CSNET merged to form the Corporation for Research and Educational Networking (CREN), another work of the National Science Foundation.
- *Science Fiction Eye* premieres with all cyberpunk issue
- *Robocop* released

- *Akira* released
- Bubble Gum Crisis begins in Japan
- *Decoder* magazine begins in Italy

## 1988

Internet Growth	Backbones: 50Kbps ARPANET, 56Kbps CSNET, 1.544Mbps (T1) NSFNET, plus satellite and radio connections - Hosts: 56,000
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- In England, Max Dowhham's "Cyberpunk: the Final Solution" published in *Vague*
- Soon after the completion of the T1 NSFNET backbone, traffic increased so quickly that plans immediately began on upgrading the network again.
- Merit and its partners formed a not for profit corporation called ANS, Advanced Network Systems, which was to conduct research into high speed networking. It soon came up with the concept of the T3, a 45 Mbps line. NSF quickly adopted the new network and by the end of 1991 all of its sites were connected by this new backbone.
- [Islands in the Net](#) published
- *Mississippi Review* entire issue published devoted to cyberpunk; academic colonization of the Movement begins in earnest
- *Metrophage* published
- *Shatter* graphic novel published
- *Going GaGa* begins publication
- *boING boING* begins publication
- [Wetware](#) published (Apr.)
- The Internet worm strikes (Nov.)
- *Mona Lisa Overdrive* published (Nov.)

## 1989

- "Fiction 2000" conference held in Leeds (June)
- *Mondo 2000* begins publication
- *Neuromancer: The Graphic Novel* published
- [The Cuckoo's Egg](#) published
- *Semiotext(e):SF* published
- *Crystal Express* published
- *Tetsuo: The Iron Man* released
- Timothy Leary interviews William Gibson
- *Phrack* #24 distributed containing the E911 document hacked from BellSouth (Feb. 24)

**The Great Hacker War (1990-1994)** To pinpoint the start of the Great Hacker War, you'd probably have to go back to 1984, when a guy calling himself Lex Luthor founded the Legion of Doom. Named after a Saturday morning cartoon, the LOD had the reputation of attracting the best of the best -- until one of the gang's brightest young acolytes, a kid named Phiber, feuded with Legion of Doomer Erik Bloodaxe and got tossed out of the clubhouse. Phiber's friends formed a rival group, the Masters of Deception.

Starting in 1990 LOD and MOD engaged in almost two years of online warfare – jamming phone lines, monitoring calls, trespassing in each other's private computers. Then the Feds cracked down. For Phiber and friends, that meant jail. End of an era. Crackdown (1986-present)

With the government online, the fun ended. Just to show that they meant business, Congress passed a law enacted in 1986 called the Federal Computer Fraud and Abuse Act. Translation-. A felony gets you five.

Then along came Robert Morris with his Internet worm in 1988. Crashing 6,000 Net-linked computers earned Morris the distinction of being the first person convicted under the Act's computer-crime provision. Translation-. a \$10,000 fine and too many hours of community service.

Soon you needed a scorecard to keep up with the arrests. That same year Kevin Mitnick broke into the Digital Equipment Company's computer network; he was nabbed and sentenced to a year in jail. Then Kevin #2 -- Kevin Poulsen --was indicted on phone tampering charges. Kevin #2 went on the lam and avoided the long arm of the law for 17 months.

Operation Sundevil was the name the government gave to its ham-handed 1990 attempt to crackdown on hackers across the country, including the Legion of Doom. It didn't work. But the following year Crackdown Redux resulted in jail sentences for four members of the Masters of Deception. Phiber Optik spent a year in federal prison.

Some people just couldn't learn from their mistakes, though. In Feb. 1995 Kevin Mitnick was arrested again. This time the FBI accused him of stealing 20,000 credit card numbers. He sat in jail for more than a year before pleading guilty in April 1996 to illegal use of stolen cellular telephone numbers.

### **Early 1990s**

- After AT&T long-distance service crashes on Martin Luther King Jr. Day, law enforcement starts a national crackdown on hackers. The feds nab St. Louis' "Knight Lightning" and in New York grab Masters of Deception trio "Phiber Optik," "Acid Phreak" and "Scorpion." Fellow hacker "Eric Bloodaxe" is picked up in Austin, Texas.
- Operation Sundevil, a special team of Secret Service agents and members of Arizona's organized crime unit, conducts raids in 12 major cities, including Miami.
- A 17-month search ends in the capture of hacker Kevin Lee Poulsen ("Dark Dante"), who is indicted for stealing military documents.
- Hackers break into Griffith Air Force Base, then peewwte computers at NASA and the Korean Atomic Research Institute. Scotland Yard nabs "Data Stream," a 16-year-old British teenager who curls up in the fetal position when seized.
- A Texas A&M professor receives death threats after a hacker logs on to his computer from off-campus and sends 20,000 racist e-mail messages using his Internet address.
- In a highly publicized case, Kevin Mitnick is arrested (again), this time in Raleigh, N.C., after he is tracked down via computer by Tsutomu Shimomura at the San Diego Supercomputer Center.

## 1990

### Internet Growth

Backbones: 56Kbps CSNET, 1.544Mbps (T1) NSFNET, plus satellite and radio connections  
- Hosts: 313,000

- *The Difference Engine* published
- While the T3 lines were being constructed, the Department of Defense disbanded the ARPANET and it was replaced by the NSFNET backbone. The original 50Kbs lines of ARPANET were taken out of service.
- Tim Berners-Lee and CERN in Geneva implements a hypertext system to provide efficient information access to the members of the international high-energy physics community.
- *Hardware* released
- EFF founded
- Secret Service raids Steven Jackson Games in Austin (Mar. 1)
- *Harper's Magazine* publishes "Is Computer Hacking a Crime?", a transcript of a WELL conference during which Phiber Optik hacks the TRW database and distributes John Barlow's credit history (Mar.)
- Operation Sun Devil (May 7-9)
- Paul Di Filippo's "Ribofunk" published in *boING boING#2* (Winter)
- In England, *The Hardcore* special "Cyberpunk is Dead" issue published (Winter)

## 1991

### Internet Growth

Backbones: Partial 45Mbps (T3) NSFNET, a few private backbones, plus satellite and radio connections - Hosts: 617,000

- *Postmodernism, or, The Cultural Logic of Late Capitalism* published
- CSNET (which consisted of 56Kbps lines) was discontinued having fulfilled its important early role in the provision of academic networking service. A key feature of CREN is that its operational costs are fully met through dues paid by its member organizations.
- The NSF established a new network, named NREN, the National Research and Education Network. The purpose of this network is to conduct high speed networking research. It was not to be used as a commercial network, nor was it to be used to send a lot of the data that the Internet now transfers.
- *Storming the Reality Studio* published
- *Synners* published
- *Terminator 2* released
- *The Silicon Man* published
- *Transreal!* published
- U.S. intelligence agents reportedly cripple Iraqi air defense computers with a virus during the Gulf War (Jan)
- Lewis Shiner announces in the Op-Ed pages of the *New York Times* that he has resigned from cyberpunk (Jan.7)
- Steven Jackson Games sues the Secret Service (May 1)
- "Michelangelo" virus media panic begins (Dec.)

## 1992

### Internet Growth

Backbones: 45Mbps (T3) NSFNET, private interconnected backbones consisting mainly of 56Kbps, 1.544Mbps, plus satellite and radio connections - Hosts: 1,136,000

- EFF moves to Washington D.C. and is immediately compromised
- Internet Society is chartered.
- World-Wide Web released by CERN.
- NSFNET backbone upgraded to T3 (44.736Mbps)

- [The Hacker Crackdown](#) published
- [Snow Crash](#) published
- *Mondo 2000: A User's Guide to the New Edge* published
- *Lawnmower Man* released
- "Michelangelo" doomsday; nothing happens (Mar. 6)
- Jaron Lanier loses his patents to his creditors (Nov)

## 1993

Internet Growth	Backbones: 45Mbps (T3) NSFNET, private interconnected backbones consisting mainly of 56Kbps, 1.544Mbps, and 45Mbps lines, plus satellite and radio connections - Hosts: 2,056,000
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- *Wired* begins publication
- InterNIC created by NSF to provide specific Internet services: directory and database services (by AT&T), registration services (by Network Solutions Inc.), and information services (by General Atomics/CERFnet).
- Marc Andreessen and NCSA and the University of Illinois develops a graphical user interface to the WWW, called "Mosaic for X".
- *Virtual Light* published
- *Fringe Ware Review* begins publication
- Nemesis released. Gibson will later praise the film as "sort of early Gibson meets Terminator 2 ... it has a few bits that are just brilliant Cyberpunk."
- Bubble Gum Crisis released in the West
- *Time Magazine* "Cyberpunk" cover story; real cyberpunks outraged (Feb. 8)
- Court rules in favor of Steven Jackson Games, Secret Service ordered to pay damages (Feb.)
- *Wild Palms* premieres (May 16)
- Billy Idol's new album *Cyberpunk* released; real cyberpunks outraged (July)
- [Flame Wars; The Discourse of Cyberculture](#) published

## 1994

Internet Growth	Backbones: 145Mbps (ATM) NSFNET, private interconnected backbones consisting mainly of 56Kbps, 1.544Mbps, and 45Mbps lines, plus satellite and radio connections - Hosts: 3,864,000
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- No major changes were made to the physical network. The most significant thing that happened was the growth. Many new networks were added to the NSF backbone. Hundreds of thousands of new hosts were added to the INTERNET during this time period.
- Pizza Hut offers pizza ordering on its Web page.
- First Virtual, the first cyberbank, opens.
- ATM (Asynchronous Transmission Mode, 145Mbps) backbone is installed on NSFNET.
- [The Hacker and the Ants](#) published
- [Data Trash](#) published
- *Cyberia* published
- "VNS Manifesto" published in *Unnatural: Techno-theory for a Contaminated Culture*
- Phiber Optic begins serving a 13 month sentence for computer intrusion and conspiracy (Jan.)
- In Paris, "Cyber SM" gives first public demonstration of virtual sexuality, S&M style (Jan.)
- *Line Noiz* e-zine distributes results of its opinion poll "Does Cyberpunk Still Exist?"; no conclusions, as usual (Aug. 12)
- Western news media reports two thirds of Russian computer users have encountered viruses, 85% of those viruses were Russian made (Nov.)

**Zero Tolerance (1994-present)** Seeing Mitnick being led off in chains on national TV soured the public's romance with online outlaws. Not users were terrified of hackers using tools like "password sniffers" to ferret out private information, or "spoofing," which tricked a machine into giving a hacker access.

Call it the end of anarchy, the death of the frontier. Hackers were no longer considered romantic antiheroes, kooky eccentrics who just wanted to learn things. A burgeoning online economy with the promise of conducting the world's business over the Net needed protection. Suddenly hackers were crooks.

In the summer of 1994 a gang masterminded by a Russian hacker broke into Citibank's computers and made unauthorized transfers totaling more than \$10 million from customers' accounts. Citibank recovered all but about \$400,000, but the scare sealed the deal. The hackers' arrests created a fraud vacuum out there in cyberspace.

### **Late 1990s**

- Hackers break into and deface federal Web sites, including the U.S. Department of Justice, U.S. Air Force, CIA, NASA and others.
- Report by the General Accounting Office finds Defense Department computers sustained 250,000 attacks by hackers in 1995 alone.
- A Canadian hacker group called the Brotherhood, angry at hackers being falsely accused of electronically stalking a Canadian family, break into the Canadian Broadcasting Corp. Web site and leave message: "The media are liars." Family's own 15-year-old son eventually is identified as stalking culprit.
- Hackers pierce security in Microsoft's NT operating system to illustrate its weaknesses.
- Popular Internet search engine Yahoo! is hit by hackers claiming a "logic bomb" will go off in the PCs of Yahoo!'s users on Christmas Day 1997 unless Kevin Mitnick is released from prison. "There is no virus," Yahoo! spokeswoman Diane Hunt said.
- Anti-hacker ad runs during Super Bowl XXXII. The Network Associates ad, costing \$1.3-million for 30 seconds, shows two Russian missile silo crewmen worrying that a computer order to launch missiles may have come from a hacker. They decide to blow up the world anyway.
- In January, the federal Bureau of Labor Statistics is inundated for days with hundreds of thousands of fake information requests, a hacker attack called "spamming."
- Hackers break into United Nation's Children Fund Web site, threatening a "holocaust" if Kevin Mitnick is not freed.
- Hackers claim to have broken into a Pentagon network and stolen software for a military satellite system. They threaten to sell the software to terrorists.
- The U.S. Justice Department unveils National Infrastructure Protection Center, which is given a mission to protect the nation's telecommunications, technology and transportation systems from hackers.
- Hacker group L0pht, in testimony before Congress, warns it could shut down nationwide access to the Internet in less than 30 minutes. The group urges stronger security measures.

## 1995

Internet Growth	Backbones: 145Mbps (ATM) NSFNET (now private), private interconnected backbones consisting mainly of 56Kbps, 1.544Mbps, 45Mbps, 155Mbps lines in construction, plus satellite and radio connections - Hosts: 6,642,000
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- The National Science Foundation announced that as of April 30, 1995 it would no longer allow direct access to the NSF backbone. The National Science Foundation contracted with four companies that would be providers of access to the NSF backbone (Merit). These companies would then sell connections to groups, organizations, and companies.
- \$50 annual fee is imposed on domains, excluding .edu and .gov domains which are still funded by the National Science Foundation.
- *Diamond Age* published
- EFF retreats to San Francisco
- *The Cyberpunk Handbook* published; cynical opportunism reaches new low
- *Wired* UK edition begins (March)
- *Synthetic Pleasures* released
- *The Net* released
- *Hackers* released
- From Australia, *Geekgirl* debuts on the Net (Jan.)
- Kevin Metnick arrested by the FBI for numerous computer crimes (Feb. 15)
- Italian police raid BITS Against the Empire BBS accusing the computer group of subversion (Feb. 28)
- *The Steampunk Trilogy* published (Apr.)
- *VR 5* premiers (May 24)
- Virtual Futures conference meets at Warwick University (May 26-28)
- *Johnny Mnemonic* released (May 26)
- Arthur & Marilouise Kroker publish "Johnny Mnemonic: The Day Cyberpunk Died" in *Ctheory* (Jun.)
- K.W. Jeter's *Blade Runner 2: The Edge of Human* published-- to the consternation of all (Nov.)

## 1996

Internet Growth	Backbones: 145Mbps (ATM) NSFNET (now private), private interconnected backbones consisting mainly of 56Kbps, 1.544Mbps, 45Mbps, and 155Mbps lines, plus satellite and radio connections - Hosts: over 15,000,000, and growing rapidly
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- *Escape Velocity: Cyberculture at the End of the Century* published
- Most Internet traffic is carried by backbones of independent ISPs, including MCI, AT&T, Sprint, UUnet, BBN planet, ANS, and more.
- Currently the Internet Society, the group that controls the INTERNET, is trying to figure out new TCP/IP to be able to have billions of addresses, rather than the limited system of today. The problem that has arisen is that it is not known how both the old and the new addressing systems will be able to work at the same time during a transition period.
- *Ribofunk!* collection published (Mar.)
- Datableed - the second Virtual Futures conference meets (May)
- *Holy Fire* Published (July)
- *Idoru* published (Sept.)
- Kyoko Date, the virtual girl, activated
- *Hacking the Future* by Arthur & Marilouise Kroker published
- Clinton signs Communications Decency Act into US law (Feb. 8)

- *Wired* magazine, as a preliminary action to a planned IPO, files a prospectus with the SEC valuing itself at \$447 million -- 17 times greater than its actual revenues. Much derision follows in the financial press (May 30)
- *Wired* magazine's IPO tanks (Oct. 24)
- Blade Runner 3: Replicants Night by K.W. Jeter published -- for no good reason (Nov)

## 1997

- [\*Freeware\*](#) published (April)
- *Wired* UK edition folds (Feb)
- US Supreme Court rules Communications Decency Act unconstitutional (Jun 26)
- Blade Runner computer game released by Westwood (Nov)

## 1998

- Gibson / Maddox episode, "Kill Switch" premiers on The X-Files (Feb 15)

### **Early Millenium (Resurrection of TigerTeams)**

The year 2000....let's face it a majority of the next decade will involve the evolution of business on the internet. The average consumer is easily persuaded to use their credit card on the internet for purchases due to discounts and cybertheft insurance policies offered by most credit cards. Hackdom will also evolve. You might call it the "CyberSpace Year of the Tiger".

In the 1980's, tigerteams were used to secure computer networks. The need for network security specialists has resurrected. Business has tested the waters of cyberspace and redesigned day to day business transactions to involve the resources of the internet ; security has become a major issue and concern. Today corporate espionage is not necessary – your competition can be taken offline with a floodping or email worm:

- Mafiaboy floodping of major websites such as Yahoo, eBay, etc
- Lovebug email virus released and cripples business activities for days

Golden Age Hackers are being called upon by the industry to design measures of security that will prevent companies from being crippled by a "proggie" (immature individual with an automated program that performs functions they could not perform on their own)