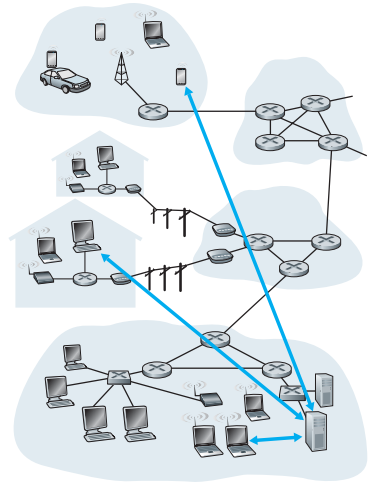


Ethical problems in P2P architectures

Eric Li
May 20, 2020

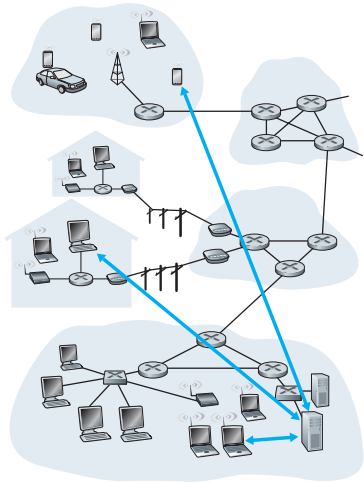


Client-server



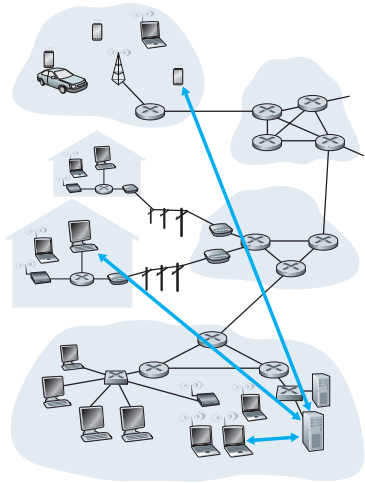
Client-server

- ▶ One (or a few) server
- ▶ Many clients



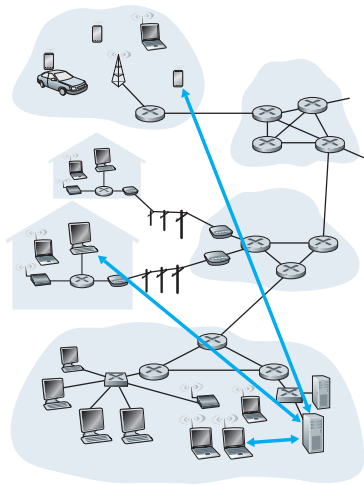
Client-server

- ▶ One (or a few) server
- ▶ Many clients
- ▶ Con: Single point of failure



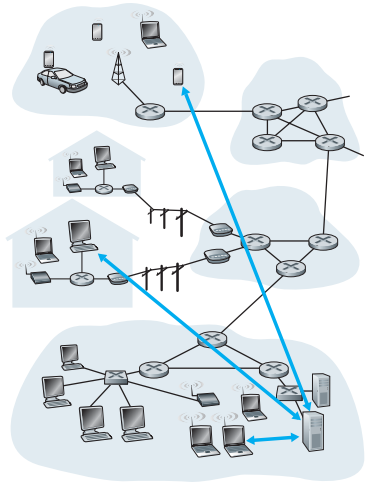
Client-server

- ▶ One (or a few) server
- ▶ Many clients
- ▶ Con: Single point of failure
- ▶ Con: Bandwidth bottleneck



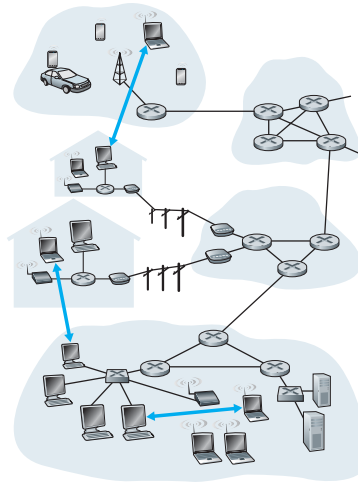
Client-server

- ▶ One (or a few) server
- ▶ Many clients
- ▶ Con: Single point of failure
- ▶ Con: Bandwidth bottle neck
- ▶ Pro: Monitor users



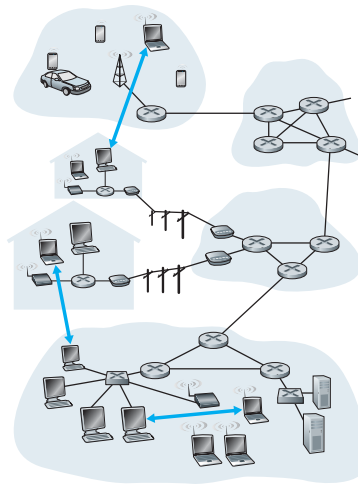
P2P

- P2P = Peer-to-Peer



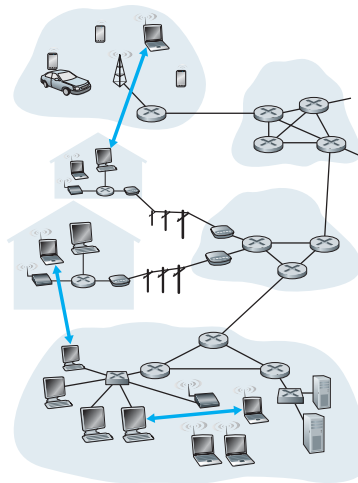
P2P

- ▶ P2P = Peer-to-Peer
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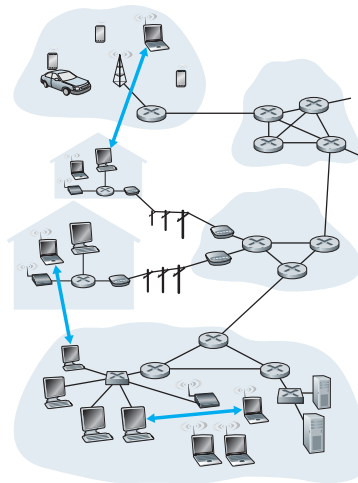
P2P

- ▶ P2P = Peer-to-Peer
- ▶ Client to client
- ▶ Server for finding peers



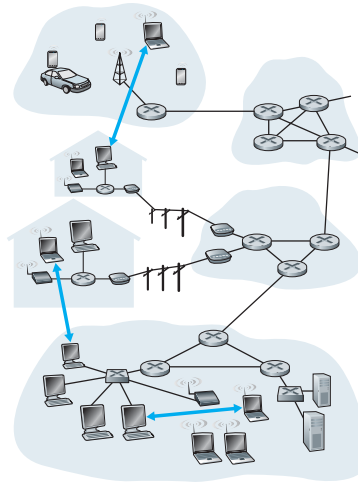
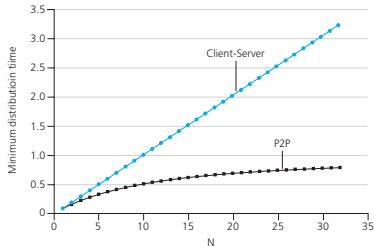
P2P

- ▶ P2P = Peer-to-Peer
- ▶ Client to client
- ▶ Server for finding peers
- ▶ No single point of failure

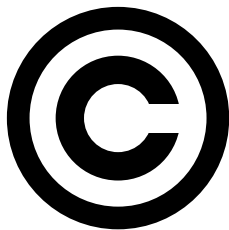


P2P

- ▶ P2P = Peer-to-Peer
- ▶ Client to client
- ▶ Server for finding peers
- ▶ No single point of failure
- ▶ Scalability

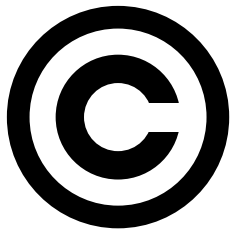


Copyright problems



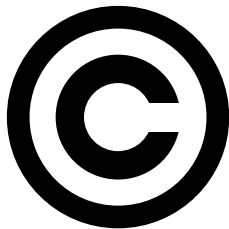
Copyright problems

- ▶ 2011: infringing content on BitTorrent = 11% Internet's traffic



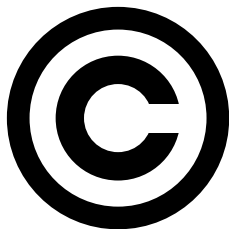
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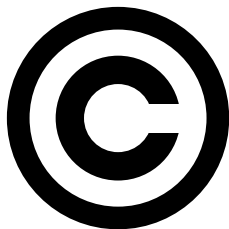
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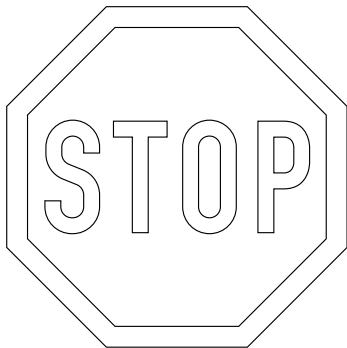


Copyright problems

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- ▶ Users' ethical choice
 - ▶ Realization
 - ▶ Subscription fee
 - ▶ Consumer rights
 - ▶ Reciprocity
- ▶ Difficult to stop

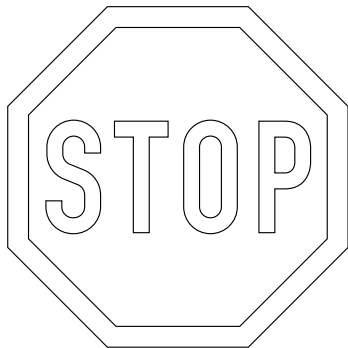


How to stop?



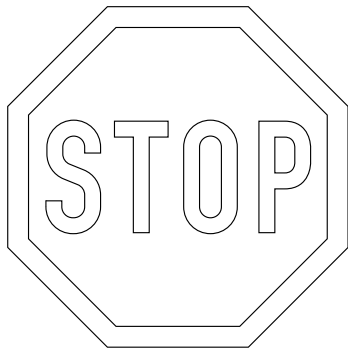
How to stop?

- ▶ Ban the technology



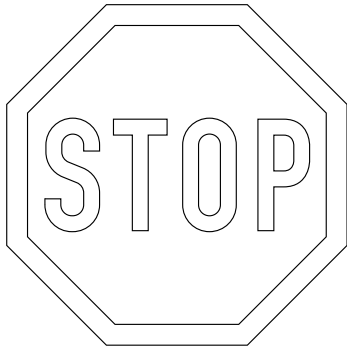
How to stop?

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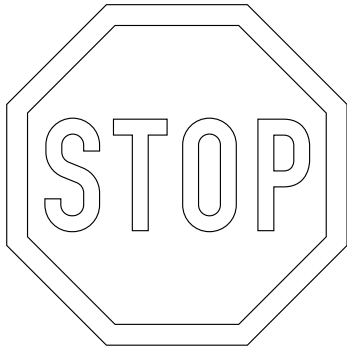
How to stop?

- ▶ Ban the technology
 - ▶ Sony doctrine
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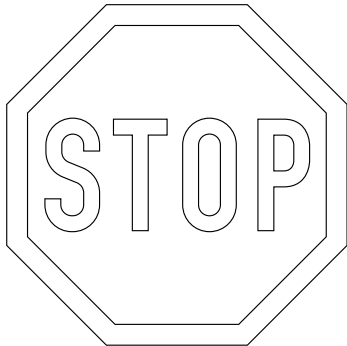
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 - ▶ Sony doctrine
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 - ▶ Cut Internet service
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 - ▶ Educate customers
- ▶ Revolutionary ways
 - ▶ Change business model



Surveillance

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- ▶ Easy to track other users in P2P
 - ▶ Crawling DHT (distributed hash table)
 - ▶ “Popularity of P2P networks stems from the principles of **anonymity and freedom.**”
- ▶ Government, RIAA, MPAA: Use fake users to track
 - ▶ RIAA = Recording Industry Association of America
 - ▶ MPAA = Motion Picture Association of America

Effect on ISP

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 - ▶ Universities

The screenshot shows the UC Davis Office of Research website. The header includes the UC Davis logo and navigation links. The main content area is titled "The Digital Millennium Copyright Act (DMCA)" and includes a section "In This Section" with links to "Learn About Copyright", "Using Copyright-Protected Materials", "Distributing UC Davis' s Copyright-Protected Work", "The Digital Millennium Copyright Act (DMCA)", "DMCA HEOA Information", "Copyright Web Resources", and "Using UC Davis' s Copyrights". The main text discusses the consequences of violating copyright law and provides a list of rights to make copies, distribute copies, make derivative works, perform publicly, and display publicly.

UC DAVIS
OFFICE OF RESEARCH

ABOUT US RESEARCH INDUSTRY ENGAGEMENT PROPOSALS/GRANTS/CONTRACTS POLICIES/COMPLIANCE OFFICES RESOURCES CONTACT US

Browse: Home / Industry Engagement / Innovation Access / For Researchers & Faculty / Learn About Copyright / The Digital Millennium Copyright Act (DMCA)

In This Section

- [Learn About Copyright](#)
- [Using Copyright-Protected Materials](#)
- [Distributing UC Davis' s Copyright-Protected Work](#)
- [The Digital Millennium Copyright Act \(DMCA\)](#)
- [DMCA HEOA Information](#)
- [Copyright Web Resources](#)
- [Using UC Davis' s Copyrights](#)

The Digital Millennium Copyright Act (DMCA)

If you want to download music, movies, TV, textbooks, or images ...

Determining that your actions comply with copyright law is up to you, not the websites or software. The consequences of violating copyright via P2P at UCD include loss of internet privileges for 2 weeks, which can make studies difficult, especially during exams.

So, how to avoid the trap? A little information should help, starting with the fact that people don't get busted under the DMCA for downloading - it's for uploading, **usually when you have no idea your computer is doing it.**

The copyrights are the rights to:

- Make copies (which downloading and uploading are)
- Distribute copies (which uploading is)
- Make derivative works, such as changing formats
- Perform publicly (think plays, dance, music)
- Display publicly (think artwork)

Leeching

- ▶ Leeching: downloading without uploading

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 - ▶ Save bandwidth

Leeching

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Xunlei's proprietary P2P network

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- ▶ Weak encryption
- ▶ Wrap other P2P networks



A lot more to be discussed

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- ▶ Spreading virus

A lot more to be discussed

- ▶ Spreading virus
- ▶ Windows 10: P2P by default
- ▶ ...

Thank you

Thanks: L^AT_EX, Beamer, TikZ, B_IB_TE_X, ImageMagick, ghostscript,
Inkscape, GIMP, FFmpeg, VLC media player, Audacity,
eSpeak, CSIF

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