

# Censorship and Internet Engineering

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DRAFT

# Hello

- University of Aberdeen's Electronics Research Group
  - <http://www.erg.abdn.ac.uk/>
- Open Rights Group
  - <https://www.openrightsgroup.org/>

# Internet Measurements

- Measuring deployments
- Testing for path brokenness
- Real world environment

# Enter Censorship

- The UK government has pressured ISPs to filter traffic to prevent children and young people from seeing content that is deemed unsuitable
- Results from blocked.org.uk (Top 100,000 websites<sup>1</sup>):
  - TalkTalk Strict: 12982 blocked (13%)
  - Sky: 7006 blocked (7%)
  - TalkTalk Kidsafe: 5587 blocked (6%)
  - Virgin Media: 4320 blocked (4%)

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<sup>1</sup>From the Alexa top 1 million websites

# The Lists

- Each ISP has a different block list
- Each ISP may even have many different block lists
- The lists are not publicly available

The image displays three panels of website filtering settings, each with a title, two radio button options, and an 'Edit settings' link at the bottom.

- Kids Safe**
  - ☒ OFF: No website restrictions
  - ☐ ON: Help protect your kids from inappropriate websites
  - [Edit settings](#)
- Homework Time**
  - ☒ OFF: No website restrictions
  - ☐ ON: Set a time limit to block social networking and gaming websites
  - 4:30 pm to 6:00 pm  
Monday to Sunday**
  - [Edit settings](#)
- Virus Alert**
  - ☒ OFF: No website restrictions
  - ☐ ON: Block websites infected with viruses

# The Blocking

- Each ISP has a different way of dealing with requests for blocked content
- blocked.org.uk has complex rulesets for detecting blocked requests
- The blocks are not predictable

```
28     "isp": "BT",
29     "match": [
30         "re:url:^(http://blockpage\\.bt\\.com/pcstaticpage/blocked\\.html",
31         "re:url:^(http://www\\.ukispcourtoorders\\.co\\.uk/",
32             "re:body:^(<p> Error \\- site blocked </p>",
33             "re:body:^(<p> Error .*? site blocked</p>"
34     ],
35     "blocktype": [
36         "PARENTAL",
37         "COPYRIGHT",
38         "COPYRIGHT",
39         "COPYRIGHT"
40     ],
```

# Bad Science

- It's not possible to know easily when your experiment has been hijacked
- You end up measuring the ISP's filtering system and not the hosts you're really interested in

# Solutions

## HTTP 451 Unavailable For Legal Reasons

- draft-tbray-http-legally-restricted-status-05
- A new HTTP status code "for use when resource access is denied as a consequence of legal demands."
- Machine readable transparency



Что делать дальше?

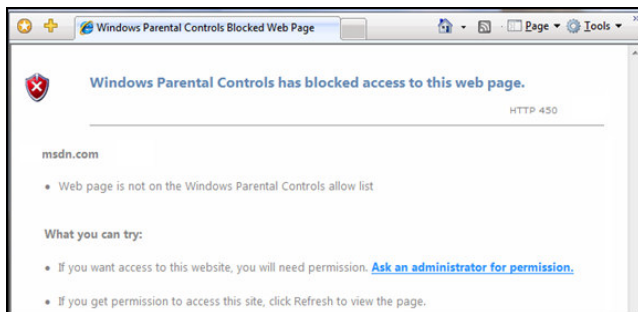
- Перейти на [главную](#)
- Почитать [Справку](#)



# Solutions

## HTTP 450 Blocked by Windows Parental Controls

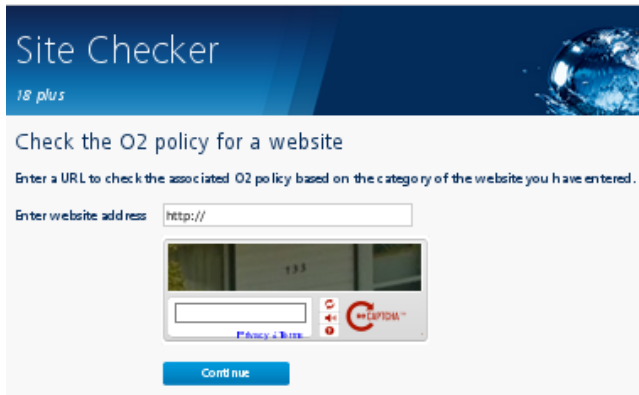
- Used by Microsoft
- Can be generalised to cover all parental controls and age restricted content filters



# Solutions

## More Transparency

- Online lookup tools



The screenshot shows a web application titled 'Site Checker' with a subtitle '18 plus'. The main heading is 'Check the O2 policy for a website'. Below this, a text prompt says 'Enter a URL to check the associated O2 policy based on the category of the website you have entered.' There is a text input field labeled 'Enter website address' containing 'http://'. Below the input field is a small video player showing a blurred image of a building. Under the video player is another text input field, a 'Privacy & Terms' link, and a red 'CAPTCHA' logo. At the bottom of the form is a blue 'Continue' button.

# Thanks

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