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[1]):
  - TalkTalk Strict: 12982 blocked (13%)
  - Sky: 7006 blocked (7%)
  - TalkTalk Kidsafe: 5587 blocked (6%)
  - Virgin Media: 4320 blocked (4%)

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[1]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 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\\.ukispcourtorders\\.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."
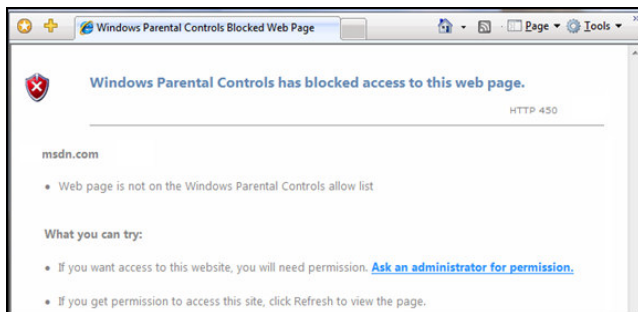- Machine readable transparency

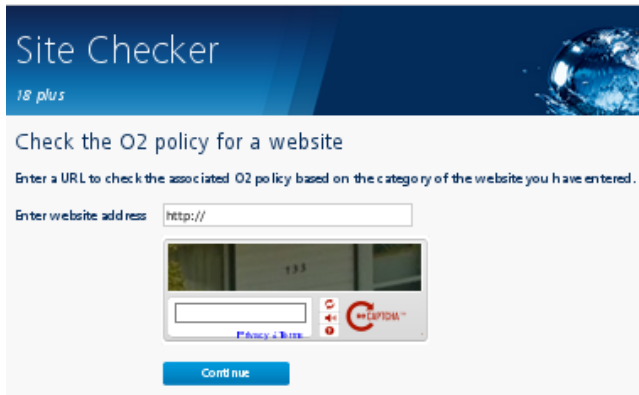# Solutions
HTTP 450 Blocked by Windows Parental Controls

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

Solutions
More Transparency

- Online lookup tools

Thanks

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