

HTTP Status Code 451 for Legally
Withheld Content:
Hackathon Overview and Human
Rights Considerations



Outline



- Last weekend's hackathon overview
 - Awarded **Best New Work**
- Introduction to HTTP 451 status code
- Hackathon implementations
- Implementation Report Draft
- HRC RFC7725 Draft
- Future Plans
- Discussion

Hackathon overview

Team

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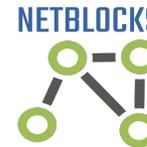
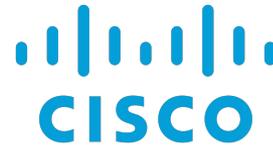
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Brief introduction to HTTP 451

HTTP 451



- Access to resource denied because of legal demand
- Blocking server might not be origin server
- Response should include details of legal demand

Purpose



- Making Internet censorship more transparent
- Reporting and tracking censorship easier
- Previously used status code 403 was not applicable



Уважаемые пользователи!

Мы приносим свои извинения, но доступ к запрашиваемому ресурсу ограничен по решению органов государственной власти.

Возможные причины ограничения доступа:

Доступ ограничен по решению суда или по иным основаниям, установленным законодательством Российской Федерации.

Сетевой адрес, позволяющий идентифицировать сайт в сети «Интернет», включен в Единый Реестр доменных имен, указателей страниц сайтов в сети «Интернет» и сетевых адресов, позволяющих идентифицировать сайты в сети «Интернет», содержащие информацию, распространение которой в Российской Федерации запрещено.

Проверить наличие сетевого адреса в Едином реестре можно в разделе «Просмотр реестра» на сайте <http://eais.rkn.gov.ru>

Сетевой адрес, позволяющий идентифицировать сайт в сети «Интернет», включен в Реестр доменных имен, указателей страниц сайтов в сети «Интернет» и сетевых адресов, позволяющих идентифицировать сайты в сети «Интернет», содержащие информацию, распространяемую с нарушением исключительных прав.

Проверить наличие сетевого адреса в Реестре можно в разделе «Просмотр реестра» на сайте rkn.gov.ru

Федеральный список экстремистских материалов <http://minjust.ru/extremist-materials>

- Failed to load resource: the server responded with a status of 404 (Not Found) [/favicon.ico](#)
- Failed to load resource: the server responded with a status of 451 (Unavailable For Legal Reasons) [217.107.194.17/](#)

> |

Highlights from Chrome 59 update

CSS and JS code coverage

Find unused CSS and JS with the new Coverage drawer.

Full-page screenshots

Take a screenshot of the entire page, from the top of the viewport to the bottom.

URL	Type	Total Bytes	Unused Bytes
/script_foot_closure	JS	385 963	255 341 (66.2 %)
/jquery_ui-bundle	JS	241 682	217 071 (89.8 %)
tr_.../script_foot.js	JS	231 291	156 748 (67.8 %)
https://develop...	CS...	185 663	122 783 (66.1 %)
/dovsite-google-bi	CSS	129 754	104 360 (80.4 %)
/js=AAZYYTmYE	JS	138 015	89 170 (71.1 %)
/cb-gsp/loaded_c	JS	122 055	81 356 (66.7 %)

Hackathon implementations

Implementations



- **Block Crawler**
 - Node-based asynchronous recursing web crawler
 - Recognizes 451 status and metadata, reports to collector
- **WordPress Plugin**
 - Plugin for WordPress CMS
 - Allows a site operator to block content using 451 for specific countries & context
- **Block Collector**
 - Reporting endpoint
 - Accepts 451 status reports from crawlers, browser plugin, and wp-plugin
- **Browser Extension**
 - Chrome extension (portable)
 - Recognizes 451 status, displays info, report to collector
- **Alternative Crawler**
 - Python desktop app
 - Records status, 451 or otherwise

Screenshot: Block Crawler

451

```
$ node index.js --mode reddit http://redditlist.com/nsfw
```

```
{"date":"2017-07-16T11:45:41.273Z","creator":"block-crawler","version":"0.1","url":"http://reddit.com/r/twinks","status":451,"statusText":"Unavailable For Legal Reasons","blockedBy":{"rel":"blocked-by","url":"https://reddit.com"}}
```

```
{"date":"2017-07-16T11:45:56.535Z","creator":"block-crawler","version":"0.1","url":"http://reddit.com/r/gaypornhunters","status":451,"statusText":"Unavailable For Legal Reasons","blockedBy":{"rel":"blocked-by","url":"https://reddit.com"}}
```

```
{"date":"2017-07-16T11:46:25.706Z","creator":"block-crawler","version":"0.1","url":"http://reddit.com/r/gayporn","status":451,"statusText":"Unavailable For Legal Reasons","blockedBy":{"rel":"blocked-by","url":"https://reddit.com"}}
```

Screenshot: WordPress plugin

451

Configure blocking / Error 451 ▲

If you have to enable blocking of this content, please check the box.

Add comma-separated list of country codes where this page shall be blocked. When left empty, the content shall be blocked from all locations.

Please specify the URL of the authority has requested the block.

You may optionally specify a description so that visitors know why the page is blocked.

Settings Error Code 451

Reporting Settings

If you wish to report censorship instances to a public collector please add the URL here.

Example: <https://registry.wirecdn.com/report>

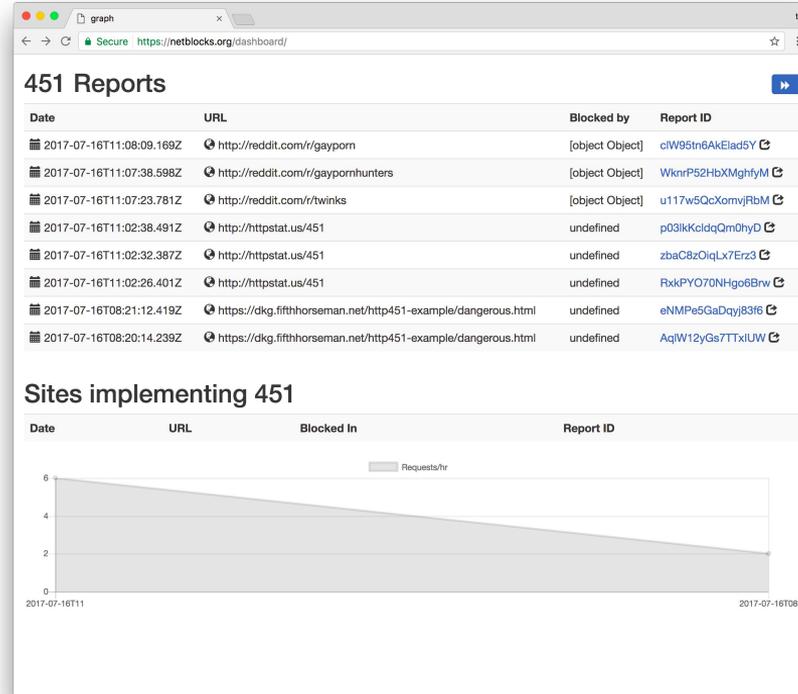
Enabling this will send the following information to the collector:

- Site Home URL
- Date and time
- Blocked URL
- Description of blocking (If provided)
- URL of Authority requesting the blocking (If provided)
- List of Countries where Content is Blocked

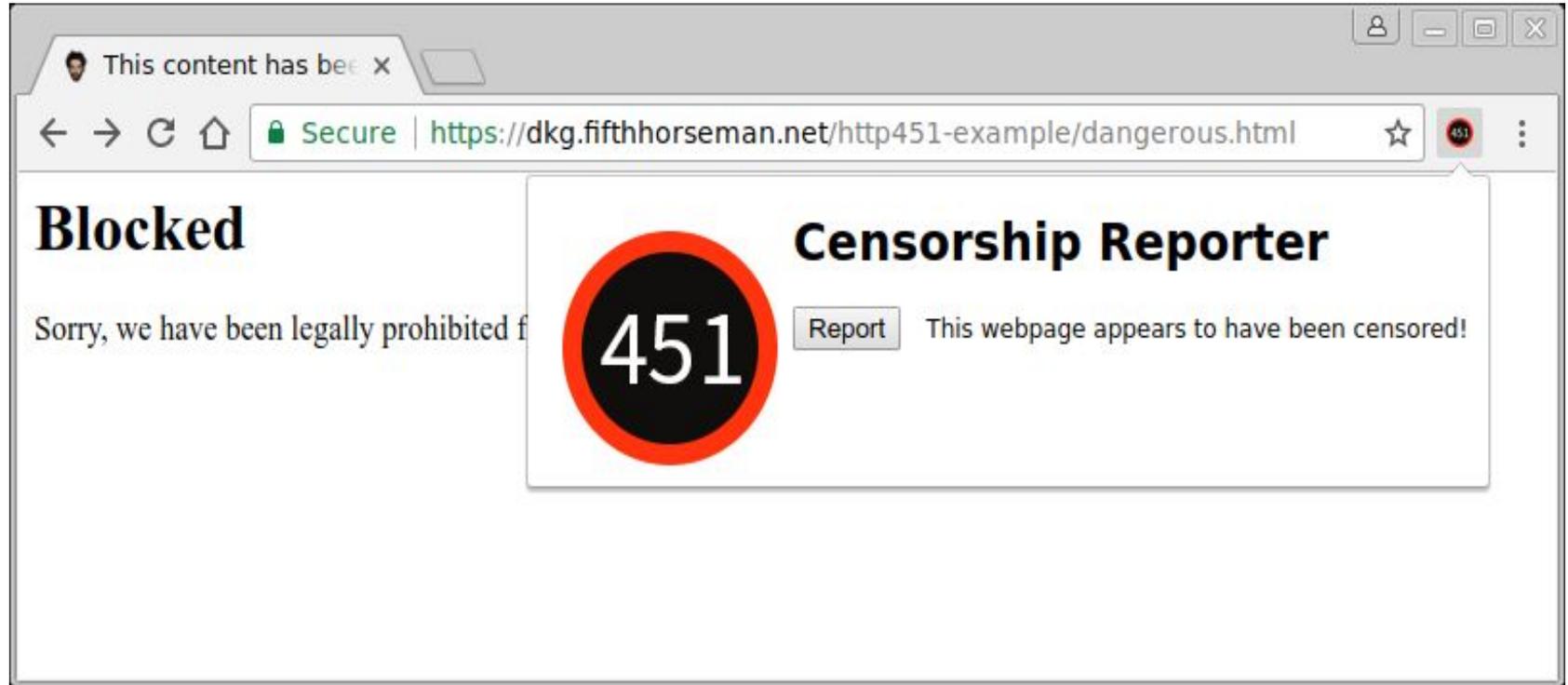
Reporting URL

Enable client side verification.
(Allow users to self-report over-censorship.) yes

Screenshot: Block Collector



Screenshot: Browser Plugin



Screenshot: Alternative Crawler

451

```
File Edit View Search Terminal Help
xt
2017-07-16 07:33:17 [451] DEBUG: Got link: https://www.reddit.com/r/ea2k
cbb/comments/60752w/future_ncaacollege_hoops_games/?ref=readnext
2017-07-16 07:33:17 [451] DEBUG: Got link: https://www.reddit.com/r/ea2k
cbb/comments/5zfh5x/college_hoops_2k7_rosters/?ref=readnext
2017-07-16 07:33:17 [451] DEBUG: Got link: https://www.reddit.com/r/ea2k
cbb/comments/5yvftg/i_glitched_the_game_today/?ref=readnext
2017-07-16 07:33:17 [451] DEBUG: Got link: https://www.reddit.com/r/ea2k
cbb/comments/5yisen/open_menu_dadada_dun_dun/?ref=readnext
2017-07-16 07:33:17 [451] DEBUG: Got link: https://www.reddit.com/r/ea2k
cbb/comments/5v972p/occasionally_i_like_to_play_an_open_legacy_where/?re
f=readnext
2017-07-16 07:33:17 [451] DEBUG: Got link: https://www.reddit.com/user/j
oetunney03
2017-07-16 07:33:17 [451] DEBUG: Got link: https://www.reddit.com/r/ea2k
cbb/comments/5plb47/ncaa_10_or_2k8/?sort=top
```

Implementation Report Draft

Implementation Report



- Stakeholders concerned with HTTP status code 451
- Current usage
- Potential impact
- Useful features of a reporting mechanism
- Current features of 451 and suggestions
- Case studies of blocking frameworks in different countries
 - Russia, Chile, India, Iran, USA

HRC RFC 7725 Draft

Human rights considerations for protocols



Connectivity

Visibility in a browser

Privacy

Content Agnosticism

Security

Internationalization

Censorship Resistance

Open Standards

Heterogeneity Support

Anonymity

Accessibility

Localization

Reliability

Confidentiality

Integrity

Authenticity

Adaptability

Outcome transparency

Biggest HRC concerns



- Privacy?
- Anonymity?
- Censorship resistance?
- Security?
- Reliability?

Future Plans

Future Plans



- Submit implementation report draft
- Findings
- RFC7725bis
 - HRC component

Links

- Implementation Report draft
 - <https://www.ietf.org/archive/id/draft-451-imp-report-00.txt>
- HRC RFC 7725 draft
 - <https://www.ietf.org/archive/id/draft-manyfolks-hrcrfc7725-00.txt>
- GitHub repository for hackathon
 - <https://github.com/451hackathon/>
- Live demonstration and dashboard
 - <https://netblocks.org/dashboard/>

Discussion
