INTERNET CENSORSHIP IN CHINA

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BACKGROUND

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CURRENT METHODS

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IP BLOCKING

- **METHOD:**

- THE ACCESS TO A CERTAIN IP ADRESS IS DENIED.

- ALL WEB SITE IN SAME SHARED HOSTING SERVER WILL BE BLOCKING

- (HTTP, FTP, POP)

- **CIRCUMVENTION METHOD:**

- FIND A PROXIES THAT HAVE ACCESS TO THE TARGET WEB SITE.

- LARGE WEB SITE MAY ALLOCATED ADDITIONAL IP ADDRESS TO AVIOD.

DNS FILTERING AND REDIRECTION

- **METHOD:**

- THE DNS DOESN'T RESOLVE DOMAIN NAMES OR RETURNS INCORRECT IP ADDRESSES.

- (HTTP,FTP,OPO)

- **CIRCUMVENTION METHOD:**

- FIND A DOMAIN NAME SERVER THAT RESOLVES DOMAIN NAMES CORRECTLY.

- BYPASS DNS, IF THE IP ADDRESS IS OBTAINABLE FROM OTHER SOURCES AND IS NOT BLOCKED.

URL FILTERING

- **METHOD:**

- SCAN THE REQUESTED UNIFORM RESOURCE LOCATOR (URL) STRING FOR TARGET KEYWORDS REGARDLESS OF THE DOMAIN NAME SPECIFIED IN THE URL

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                                                                                     (HTTP)

- **CIRCUMVENTION METHOD:**

- USE ESCAPED CHARACTERS IN THE URL, OR TO USE ENCRYPTED PROTOCOLS SUCH AS VPN AND SSL

PACKET FILTERING

- **METHOD:**

- TERMINATE TCP PACKET TRANSMISSIONS WHEN A CERTAIN NUMBER OF CONTROVERSIAL KEYWORDS ARE DETECTED.

  - (HTTP, FTP, POP)

- **CIRCUMVENTION METHOD:**

- USE ENCRYPTION MEANS, SUCH AS VPN AND SSL, TO PROTECT THE HTML CONTENT, OR REDUCING THE TCP/IP STACK MTU, THUS REDUCING THE AMOUNT OF TEXT CONTAINED IN A GIVEN PACKET.

MAN-IN-THE-MIDDLE ATTACK

- **METHOD:**

- GFW CAN USE A ROOT CERTIFICATE FROM CNNIC, WHICH IS FOUND IN MOST OPERATING SYSTEMS AND BROWSERS, TO MAKE A MITM ATTACK.

- ON 26 JAN 2013, THE GITHUB SSL CERTIFICATE WAS REPLACED WITH A SELF-SIGNED CERTIFICATE IN CHINA.

TCP CONNECTION RESET

- **METHOD:**

- IF A PREVIOUS TCP CONNECTION IS BLOCKED BY THE FILTER, FUTURE CONNECTION ATTEMPTS FROM BOTH SIDES WILL ALSO BE BLOCKED FOR UP TO 30 MINUTES. DEPENDING ON THE LOCATION OF THE BLOCK, OTHER USERS OR WEB SITES MAY BE ALSO BLOCKED IF THE COMMUNICATIONS ARE ROUTED TO THE LOCATION OF THE BLOCK.

- **CIRCUMVENTION METHOD:**

- IGNORE THE RESET PACKET SENT BY THE FIREWALL.

VPN BLOCKING

- **METHOD:**

- BEGINNING IN 2011, USERS REPORTED DISRUPTIONS OF VIRTUAL PRIVATE NETWORK(VPN) SERVICES.

- IN LATE 2012, GFW WAS ABLE TO "LEARN, DISCOVER AND BLOCK" THE ENCRYPTED COMMUNICATIONS METHODS USED BY A NUMBER OF DIFFERENT VPN SYSTEMS.

- CHINA UNICOM, ONE OF THE BIGGEST TELECOMS PROVIDERS IN THE COUNTRY, WAS KILLING CONNECTIONS WHERE A VPN IS DETECTED.

TARGETS OF CENSORSHIP

- TARGETED CONTENT

- DISCUSSION FORUMS

- SOCIAL MEDIA WEBSITES

- SEARCH ENGINES

TARGETS OF CENSORSHIP

- **Social media websites and discussion forums**

- In 2009, the social networking sites facebook and twitter were blocked, containing social or political .

- Reason suggested for the block is that activists can utilize them to organize themselves.

- One part of the block is to filter the search results of certain terms on Chinese search engines.

- International ones, yahoo.com.cn, bing, and (formerly) google china

- Domestic ones 360 search and baidu.

- Attempting to search for censored keywords in these Chinese search engines will yield few or no results.

- Previously, before 2010, google.cn displayed the following : "according to the local laws, regulations and policies, part of the searching result is not shown."

- The case 2011 uprising in Egypt.

找不到和您的查询 "site:news.bbc.co.uk" 相符的网页。

建议 :

- 请检查输入字词有无错误。
- 请换用另外的查询字词。
- 请改用较常见的字词。

据当地法律法规和政策，部分搜索结果未予显示。
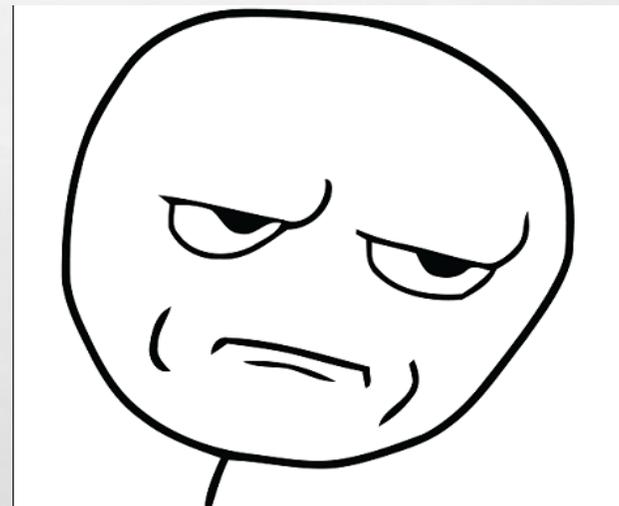
- Google have refused to China's idea of "internet sovereignty," which includes sharing information on users with the government.

- The company moved its servers out of China in 2010— including its search function

- First, search engines had been blocked, namely google and AltaVista(yahoo,2003). Technorati (blog search)

- Different search engines censored in different ways.

- For example, Bing is reported to censor search results from simplified Chinese characters (used in China), but not in traditional Chinese characters (used in Hong Kong, Taiwan and Macau).

TARGETS OF CENSORSHIP

- *list of blacklisted keywords in china*

- If a site was inaccessible, then it was added to google China's blacklist.

QUESTIONS

- 1. Who left China searching engines market as a western technology companies in 2010, and why?

- Answer: google is among the western technology companies that have refused to bow to china's idea of "internet sovereignty," which includes sharing information on users with the government. The company moved its servers out of china in 2010, and all of its services — including its search function — were shut down in china in the crackdown on foreign internet services in the months leading up to the 25th anniversary of the tiananmen square protests.

QUESTIONS

- 2. What are the methods current used to block content through internet censorship in China as we mention in the presentation?

- Answer: IP blocking, DNS filtering and redirection, URL filtering, packet filtering, man-in-the-middle attack, TCP connection reset, VPN blocking

QUESTIONS

- 3. Mention one of the reason why facebook and twitter was block in china, and when?

- Answer: In the second half of 2009, the social networking sites facebook and twitter were blocked, presumably because of containing social or political commentary (similar to livejournal in the above list). An example is the commentary on the July 2009 Ürümqi riots. Another reason suggested for the block is that activists can utilize them to organize themselves

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THANK YOU

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