

Overview

The Canadian Centre for Child Protection (C3P) is a national charity dedicated to the personal safety of children. Our goal is to reduce the sexual abuse and exploitation of children, assist in the location of missing children, and prevent child victimization. C3P operates Cybertip.ca - Canada's national tipline for reporting child sexual abuse and exploitation on the internet, as well as other prevention and intervention services to the public. The tipline has been operational since September 26, 2002 and is part of the Government of Canada's *National Strategy for the Protection of Children from Sexual Exploitation on the Internet*. In 2016, on a quest to reduce the availability of child sexual abuse images and videos globally and help break the cycle of abuse experienced by survivors, C3P introduced Project Arachnid.

Project Arachnid is an innovative tool to combat the growing proliferation of child sexual abuse material (CSAM) on the internet. The Project Arachnid platform was initially designed to crawl links on sites previously reported to Cybertip.ca that contained CSAM and detect where these images/videos are being made publicly available. Once CSAM was detected, a notice was sent to the provider hosting the content requesting its removal. Project Arachnid still carries out the crawling activities described above, but, as it is continually evolving and adapting to enhance its capabilities to detect CSAM, it now also scrapes forums and chatrooms and offers an application program interface (API) for industry.

In November 2017, the Home Office out of the United Kingdom entered into an agreement with C3P to assist in funding an expansion of Project Arachnid that included:

- Increasing the existing capacity of the system so that twice as many webpages per second can be searched, resulting in more images being identified and removed.
- Creating an API for technology companies to proactively scan their networks to identify and remove images as opposed to waiting for them to be detected and reported by an external party.
- [REDACTED]
- Adding hash values held by the National Center for Missing and Exploited Children to the Arachnid database so that Arachnid is able to identify a wider range of illegal images.

The goal is to augment the capabilities of Project Arachnid - creating innovative tools, collaborating with police, industry and other hotlines to facilitate a more global approach aimed at reducing the online victimization of children, increasing the quality of hashes available globally, reducing

duplication of efforts among hotlines and industry, and reducing exposure to analysts assessing CSAM.

Key Deliverables

This section outlines the activities C3P has undertaken; it includes the statistics, successes, and increased efficiencies associated with the key deliverables under the agreement.

A. Increasing the Capacity of Project Arachnid

Activities

In the initial expansion of Project Arachnid, C3P focused efforts on tackling a few chat rooms and forums where CSAM was known to be shared. With intelligence provided by Cybertip.ca analysts, the list of forums was initially fairly small. Over time, Project Arachnid's capacity for detecting CSAM and issuing notices expanded with the addition of more chat rooms and forums to the list, as well as automated sources.

[REDACTED]

Statistics, Successes, and Increased Efficiencies

As of January 2019:

- The crawler is processing an average of 8,000 images/second, and has peaked at over 150,000 images/second.

- Project Arachnid has triggered to service providers 1.6 million notices related to CSAM – over 10 times the number of notices issued prior to the agreement with the Home Office.
- More than 4,000 notices/day issued – an increase from 500-700 notices/day prior to the agreement with the Home Office.
- Project Arachnid has detected over 7.4 million suspected images of child sexual abuse.

Processing thousands of images per second, Project Arachnid detects content at a pace that far exceeds that of traditional methods of identifying and addressing this harmful material through public reporting. In addition to the automated crawling function that detects CSAM based upon PhotoDNA, Project Arachnid also relies upon human intelligence – analysts identifying forums and chatrooms dedicated to individuals with a sexual interest in children. This information is fed into Arachnid, resulting in a large volume of suspected CSAM being detected.

B. Industry Application Programming Interface

In addition to the crawling functions, the system has evolved into a platform that includes methods for industry to proactively respond to child sexual abuse material, among other things.

Activities

Rather than waiting for Project Arachnid to detect material and trigger a notice, an API was developed to help electronic service providers (ESPs) proactively reduce the CSAM on their networks. The API can be used by industry members to both detect and prevent CSAM from entering their network. Providing industry with a means to quickly detect CSAM on their service, in turn, speeds up the removal of the content.

In creating the API for ESPs, it was determined setting up a number of different endpoints would encourage greater industry participation, which includes the following:

- [REDACTED]
- Image/video submission (uploaded material)
- PhotoDNA submission

Upon submission, the uploaded material or the material located at the submitted URL is compared against triple verified hashes of CSAM. The provider is then notified if the material matches a hash value on this list