Hacker Protection from SQL Injection SPI Dynamics

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| [[image: image]](http://www.spidynamics.com/news/HP_SPI.html) | | | |

Security Brief: MySpace Quicktime Worm

On Friday, December 1, 2006, the social networking site MySpace was infected with a self-propagating JavaScript/Ajax worm. This worm infects the user's profile, serves pornographic material, and launches a Phishing attack to steal usernames and passwords.

This worm is significant because it highlights three security concerns:

- Criminals are increasingly using web application worms for financial gain.
- Attackers are using malicious or malformed files rather than normal user input.
- Criminals are quickly adapting new techniques that are currently being discussed on web security websites.

The Attack Vector

MySpace allows users to embed movies and other multimedia into their user profiles. Apple's Quicktime movies have a feature known as HREF tracks, which allow users to embed a URL into an interactive movie. The attacker inserted malicious JavaScript into this Quicktime feature so that when the movie is played the evil code is executed.

When a user views a page with the malicious movie, the JavaScript inside downloads and runs the full worm. Next, the worm uses Ajax to make requests to infect that user's profile with the malicious movie without the user's knowledge. The worm also injects HTML that hijacks the top menu of MySpace, replacing it with an identical-looking menu. When users click on a link in this fake menu, they are sent to a Phishing site that presents them with a phony login screen. This is used to steal usernames and passwords of MySpace users. Finally, the worm attempts to send instant messages containing a pornographic image and link to a pornographic Website. These messages are sent to four randomly selected MySpace users. This appears to be a ploy by the authors to earn revenue from both advertising impressions and by trying to install the adware package Zango.

A second version of the worm has appeared which is functionally identical to the first version. However this new version stores the full worm code, the infected Quicktime movie, and the fake login page for Phishing on different webservers around the world. Each time the worm runs, it randomly selects a server to retrieve all the content. This allows the second version of the worm to propagate until all the servers are shut down or MySpace fixes the issue.

Analysis

SPI Labs has acquired and analyzed the source code for the worm. It is more sophisticated than previous worms that attacked MySpace, such as the Samy worm or SpaceFlash worm, or the worm that attacked Yahoo, the Yamanner worm. The MySpace Quicktime worm makes use of advanced features such as object subclassing, regular expressions, and multiple server hosting, none of which have been seen before. More troubling, both the technique of attacking a website through a malicious Quicktime movie as well as the vulnerability to replace MySpace's menu have been discussed on various security mailing lists and websites over the last three months. It appears that criminals are now actively monitoring web security resources for new attack vectors and website vulnerabilities. As a result, the MySpace Quicktime worm has become the first widespread web application worm that uses new attack theories so quickly after their discovery and disclosure.

Solution

This worm is capable of executing because Quicktime movies are not validated by MySpace to ensure that HREF tracks do not contain JavaScript code. While MySpace does not allow users to upload Quicktime movies directly to its servers, MySpace is not verifying that links to multimedia files hosted on external sites do not contain malicious code. The correct way to sanitize input is via a "white listing" approach. White listing refers to the practice of only allowing safe content as opposed to black listing, which disallows potentially dangerous content. For example, blacklisting might disallow such an HREF track URL from starting with javascript, but would allow JaVaScRiPt or vbscript. Instead of creating a list of disallowed input, the best solution to verify any HREF track inside a Quicktime movie only contain URLS that start with http or https. Everything else would be blocked including the technique of putting executable code inside of a movie.

Additional Information

Additional information about this attack can be found at:

*Infecting Quicktime movies with malicious JavaScript *http://www.gnucitizen.org/blog/backdooring-quicktime-movies/

*Myspace.com Trojaned Navigation Menu *http://seclists.org/fulldisclosure/2006/Nov/0275.html

*Cross-Site Scripting: Are your web applications vulnerable? *http://www.spidynamics.com/whitepapers/SPIcross-sitescripting.pdf

*The Cross-Site Scripting FAQ *http://www.cgisecurity.com/articles/xss-faq.shtml

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