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Security Through Obscurity Considered Dangerous

0. Abstract

Hiding security vulnerabilities in algorithms, software, and/or hardware decreases the likelihood they will be repaired and increases the likelihood that they can and will be exploited by evil-doers. Discouraging or outlawing discussion of weaknesses and vulnerabilities is extremely dangerous and deleterious to the security of computer systems, the network, and its citizens.

1. Open Discussion Encourages Better Security

The long history of cryptography and cryptoanalysis has shown time and time again that open discussion and analysis of algorithms exposes weaknesses not thought of by the original authors, and thereby leads to better and more secure algorithms. As Kerckhoff noted about cipher systems in 1883 [Kerc83], "Il faut qu'il n'exige pas le secret, et qu'il puisse sans inconv'enient tomer entre les mains de l'ennemi." (Roughly, "the system must not require secrecy and can be stolen by the enemy without causing trouble.")

It is also against the ethos and laws of a number of countries to disallow open discussion of science and technology.

Within the IETF, frank discussion of the flaws of proposed and actual protocols has led to improvement versions. Hence, the IETF does not discourage open discussion and analysis of cryptographic or security methods, and enthusiastically encourages open and frank technical discussion thereof in its research, working groups, mailing lists, and all other discussion venues.

2. Revealing Vulnerabilities is Useful

Revealing and discussing vulnerabilities in hardware and software products allows the users to protect themselves, and encourages general protection and repair strategies.

On the other hand, there is a well-established culture of giving the manufacturer of the vulnerable product a short but reasonable early warning of discovered vulnerabilities so that they have an opportunity to repair them and or prepare to distribute patches or work-arounds. Furthermore, it is better if developers have time to test their patches; much of the current mess comes from inadequate software testing.

The IETF supports and encourages the open but prudent discussion of vulnerabilities in hardware and software in all appropriate IETF venues.

3. The Culture of Sharing

In parts of the hacker subculture, information is currency. That is, by disclosing vulnerabilities or by providing exploit code, the purveyor gains status. As a consequence, knowledge of security holes tends to spread rapidly.

By contrast, when security professionals withhold such information from the community, the broader community does not have an opportunity to find solutions. In extreme cases, such as that described in [Bell95], the result can be that the bad guys know about the problem long before most defenders do. That, in turn, likely delayed the development of cryptographic security mechanisms for the DNS [RFC2065].

3. Security Considerations

This document is about security, and specifically warns about increased vulnerability if weakness in algorithms and products are not able to be openly discussed.

4. Acknowledgments

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5. References

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