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Information Security Early Warning Partnership

- Overview of Vulnerability Handling Process -

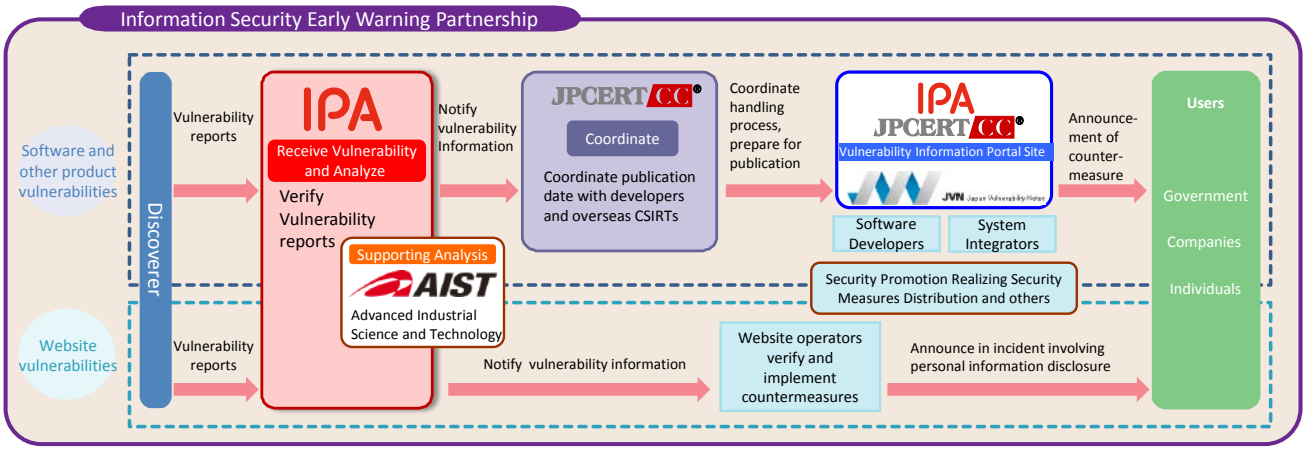
■ Framework Establishment

In 2004, the notification from the Ministry of Economy, Trade and Industry on “Standards for Handling Software Vulnerability Information and Others” was issued to ensure appropriate handling of vulnerability-related information when a vulnerability is reported, in order to reduce the damages caused by unauthorized computer access, computer viruses and so on. It was amended in 2014, and shifted to “Standards for Handling Vulnerability-related Information of Software Products and Others” in 2017. Based on these standards, the “Information Security Early Warning Partnership Guideline” (hereinafter, “guideline“) stating the recommended actions to relevant parties was established, to achieve an appropriate flow of vulnerability-related information*1. Specifically, the Information-Technology, Promotion Agency (IPA) serves as the contact organization, while the Japan Computer Emergency Response Team Coordination Center (JPCERT/CC) serves as the coordinating organization. These organizations make efforts to handle vulnerability-related information properly with all relevant parties, including discoverers, software developers and website operators. This process is in alignment with ISO/IEC 29147:2014 “Vulnerability disclosure”.

■ Scope of Framework

The guideline covers vulnerabilities that may affect a large number of people; specifically, software products widely used in Japan and web applications that run on websites presumed to be accessed primarily from Japan (for example, websites written in Japanese, URLs that use the “jp” domain and so on.). This brochure has been prepared to provide the relevant parties an overview of the guideline, describing how vulnerability-related information should be handled. The table below shows the advantages of being a part of the Information Security Early Warning Partnership. These efforts can reduce the likelihood that product users and website operators will sustain attacks due to vulnerabilities.

Relevant Parties	Advantages of Information Security Early Warning Partnership
Discoverer	• Can prompt software developers and website operators to take countermeasures against vulnerabilities through a public entity. • May be publicly credited on a document when the vulnerability countermeasure is published.
Software Developers	• Can learn about non-public vulnerabilities that may affect their own products. • Can make users publicly aware of how to address vulnerabilities. • Can demonstrate that they are seriously engaged in addressing vulnerabilities.
Website Operators	• Can address their websites before the existence of a vulnerability becomes widely known. • Can check for and address previously unnoticed vulnerabilities. • Can improve user safety on their websites.



* JPCERT/CC: Japan Computer Emergency Response Team Coordination Center AIST: National Institute of Advanced Industrial Science and Technology

*1) Vulnerability-related information: Information on vulnerabilities (by nature and characteristics), verification methods or methods of attack.

To Discoverers

If you have discovered a vulnerability, please consider reporting to IPA.[*2] If it is a software product vulnerability, JPCERT/CC will contact the software developer. If it is a web application vulnerability, IPA will contact the website operator.

【Recommended actions taken by the person who has discovered a vulnerability 】

Vulnerability Discovery

- Actions related to vulnerability discovery or the acquisition of vulnerability information must not constitute an infringement of laws or regulations.
- Vulnerability-related information should be managed properly so it is not disclosed to any unrelated third parties.

Report to IPA

- Notify IPA by filling in the provided vulnerability reporting form with the required information.
- When reporting, please provide the vulnerability-related information as well as the name and contact of the person who has discovered the vulnerability. IPA will ensure that this contact information will not be disclosed to unrelated third parties.
- When IPA confirms that the report meets the requirement for a valid vulnerability report, the discoverer will be notified that it has been accepted.

【Recommended actions for other relevant parties】

- IPA and JPCERT/CC will act as an intermediary for the exchange of information between software developers and website operators.[*3]
- Product developers and website operators will verify the vulnerability.[*4]
- When verification has been completed and the vulnerability has been confirmed, the software developers / website operators will examine methods to address the vulnerability.
- For a software product vulnerability, it will be published on the Japan Vulnerability Notes (JVN) portal site, and users will be provided with information on vulnerability countermeasures. When the information is published on JVN, IPA will notify the discoverer.
- For a web application vulnerability, IPA will notify the discoverer after the website operator notifies that the vulnerability has been addressed.
- IPA asks the discoverer to manage the vulnerability-related information properly so it is not disclosed to any unrelated third parties during the periods shown in the table below.

If both parties agree, the discoverer may exchange information directly with the software developer or website operator.

The discoverer may inquire to IPA about the progress of the handling process. The discoverer must make sure that information obtained is not disclosed to any unrelated third parties.

For software vulnerabilities, after a year has passed since the initial report[*5], the discoverer may issue a withdrawal request to IPA. This will allow the discoverer to disclose information on the discovered vulnerability.

Software product vulnerability	From report to announcement on JVN[*6]
Website application vulnerability	From report to correction of vulnerability

*2) Discoverers can report vulnerability-related information directly to the software developer to accept direct reporting.
*3) IPA may make inquiries to the discoverer about the contents of the report.
*4) If the handling process is terminated because the vulnerability is already publicly known, IPA will notify the discoverer as such.
*5) The date when JPCERT/CC first attempted to notify the software developer of the vulnerability-related information.
*6) A portal site for vulnerability countermeasure information, operated jointly by IPA and JPCERT/CC. (https://jvn.jp/en/).

To Software Developers

When software developers[*7] are notified that there is a vulnerability in their software product, they are expected to verify the content of the notification. If the vulnerability in question exists, they are expected to make sure users are aware of any available countermeasures. Please cooperate when you receive inquiries from JPCERT/CC on any technical matters and the progress in addressing with the vulnerability.

【Recommended actions by software developer (in advance) 】

Establishment of a proper contact

- Set up a proper contact for the handling of vulnerability information and notify JPCERT/CC.
- Please contact JPCERT/CC immediately when the contact information changes.

Please tell JPCERT/CC whether you accept to post the product developer name on the developers public list, and whether you accept direct reporting from the discoverer.

【Response by IPA and JPCERT/CC 】

- JPCERT/CC will register the developer to the list of software developers.
- When IPA receives a report of vulnerability-related information of software products, IPA will notify JPCERT/CC, and JPCERT/CC will contact the software developer that developed the product or technology.

If the software developer cannot be reached[*8], the name of the software developer may be published to solicit methods to contact the developer from the public.

Vulnerability Verification

- When the software developer receives vulnerability-related information from JPCERT/CC, the developer should examine the impact on its software products, verify the vulnerability and then report its findings to JPCERT/CC.
- Be sure to manage vulnerability-related information properly so it is not disclosed to any unrelated third parties.

With the approval of the discoverer through IPA and JPCERT/CC, the software developer may communicate directly with the discoverer.

Arranging announcement dates

Preparation of countermeasures

- If the existence of the vulnerability is confirmed, please notify JPCERT/CC of any plans[*9] to publicly disclose information on the vulnerability. These plans should take into consideration the following: time required to prepare the countermeasure, any coordination with other relevant parties and any risks that this information may be made public prematurely.
- Software developers should notify JPCERT/CC the status of measures by the planned public release date and prepare countermeasures accordingly.

If the software developer is able to contact all users of its product of a countermeasures, then it does not have to be publicly released. In such a case, please contact JPCERT/CC.

If it is impossible for JPCERT/CC to agree[*10] with product developer, the vulnerability may be published after the case is reviewed by the Release Decision Committee. Product developer can explain the opinion in the Release Decision Committee.

Contact JPCERT/CC when the software developer wants to notify its product users of the vulnerability and status of any countermeasures prior to the public disclosure.

Public Disclosure

- After the vulnerability information is published, software developers are expected to make an effort to ensure that its product users are aware of the issues and its countermeasures.

*7) The office, corporation, individual or community that developed the software. Or the office, corporation, individual or community that processed, imported, sold or distributed the software.

*8) Cases where the developer cannot be reached such as the following: contact information for the developer is unknown, an appropriate method to contact the developer does not exist, the developer does not respond to contact attempts, etc.

*9) In general, the recommended date of release is 45 days from the day of the initial report. Please contact JPCERT/CC if more time is necessary. For reports that have been handled for over a year, the discoverer may inquire to IPA to withdraw its request for information non-disclosure. After the request is withdrawn, the vulnerability information may be made public by the discoverer.

*10) Cases that IPA judges that it is impossible for JPCERT / CC and product developers to make adjustments concerning the disclosure of vulnerability information.

To Website Operators
(who have received notification of a vulnerability in web applications)

When website operators are notified of the possibility that a vulnerability exists in one of their web applications, they are expected to verify the content. If the vulnerability exists, they are expected to address the vulnerability while considering the extent of its impact. Please also cooperate when you receive inquiries from IPA on technical matters and the progress in dealing with the vulnerability.

【Recommended response by website operator】

Publish Contact Information

- Provide contact information for inquires regarding the website.

【Response by IPA 】

- When IPA receives a report of a vulnerability in a web application, IPA will contact the website operator.

【Recommended actions taken by the website operator】

Vulnerability Verification

- When the website operator is contacted by IPA, the website operator should verify the vulnerability and determine its impact.
- Contact IPA and report the results of the verification.
- Be sure to manage*10 vulnerability-related information properly so it is not disclosed to any unrelated third parties.

With the approval of the discoverer through IPA, the website operator may communicate directly with the discoverer.

Address Vulnerability

- When you have confirmed that the vulnerability exists, determine its impact. Then address the vulnerability while considering the extent of its impact.*11
- When the vulnerability has been addressed, please notify IPA. This notification should be issued within approximately three months from the time since IPA notified the vulnerability-related information.

*10) It is recommended that a confidentiality agreement be concluded with companies contracted to build and operate websites before communicating vulnerability-related information.

*11) It is not required for website operators to proactively publish vulnerabilities in web applications. When there is a possibility of secondary damage or an incident such as a breach of personal data due to a vulnerability, then publishing of this information should be considered after it has been addressed. Inquiries from any individuals who have been affected by a vulnerability should be responded to in a prompt manner.

Please address inquiries regarding this brochure to:
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