Reporting Status of Vulnerability-related Information about Software Products and Websites

- 4th Quarter of 2016 (October – December) -

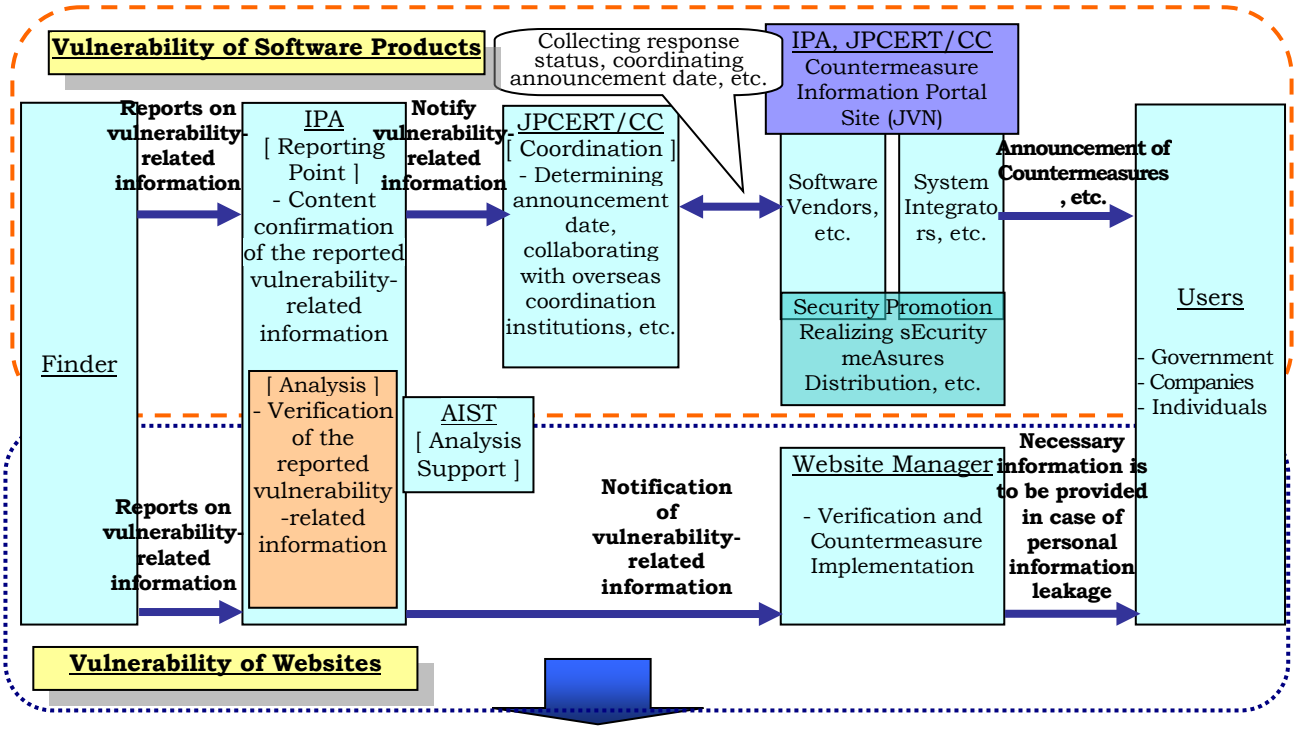
Information-technology Promotion Agency, Japan (IPA) and Japan Computer Emergency Response Team Coordination Center (JPCERT/CC), initiated to handle vulnerability-related information in July, 2004, pursuant to the Standards for Handling Software Vulnerability Information and Others (Directive #110, 2014) by the Ministry of Economy, Trade and Industry (METI).
With the authority given by the Directive, IPA has been collecting reports on the following vulnerability-related information:

1: Vulnerability-related Information about Software Products:

Vulnerabilities against client Software such as OS and browser, server Software such as Web server, Software embedded in hardware such as IC card, and so on. Other than vulnerability itself, information on verification methods, attacking methods and workarounds are also accepted. IPA will notify these vulnerability-related information to JPCERT/CC and then JPCERT/CC will communicate those information to concerned organizations such as domestic product vendors.

2: Vulnerability-related Information about Websites (Web Applications):

Vulnerabilities against Websites which provide services to the public through the Internet. IPA will notify such vulnerability-related information to Website managers to prompt modification.



Effect Expected:

1. Encourage vendors and Website managers to implement countermeasures against vulnerabilities.
2. Prevent vulnerabilities from being carelessly publicized or left unsolved.
3. Prevent important information, such as personal information, from being disclosed and/or critical systems from being shut down.

"Information Security Early Warning Partnership"
(Framework for Handling Vulnerability-related Information)

Source: Handouts from explanatory session on handling vulnerability-related information (General introduction to the standards for handling Software vulnerability-related information and its guidelines) by the Ministry of Economy, Trade and Industry

The statistics for the 4th Quarter of 2016 (October – December) from the data collected under the framework is summarized as follows.

1. Reported Number and Handling Status of Reports:

The total number of vulnerability-related information reported to IPA from October 1 to December 31, 2016 was 242: 138 of them were about Software products and the rest of 104 were about Websites. The cumulative number of reports made to IPA since the framework started (July 8, 2004) was 12916: 3433 of them were about Software products and the rest of 9483 were about Websites. The Chart 1-1 shows the reporting status for respective quarters.

Reported Number/Business Day							
1Q/2015	2Q/2015	3Q/2015	4Q/2015	1Q/2016	2Q/2016	3Q/2016	4Q/2016
4.17	4.13	4.11	4.11	4.09	4.26	4.25	4.25

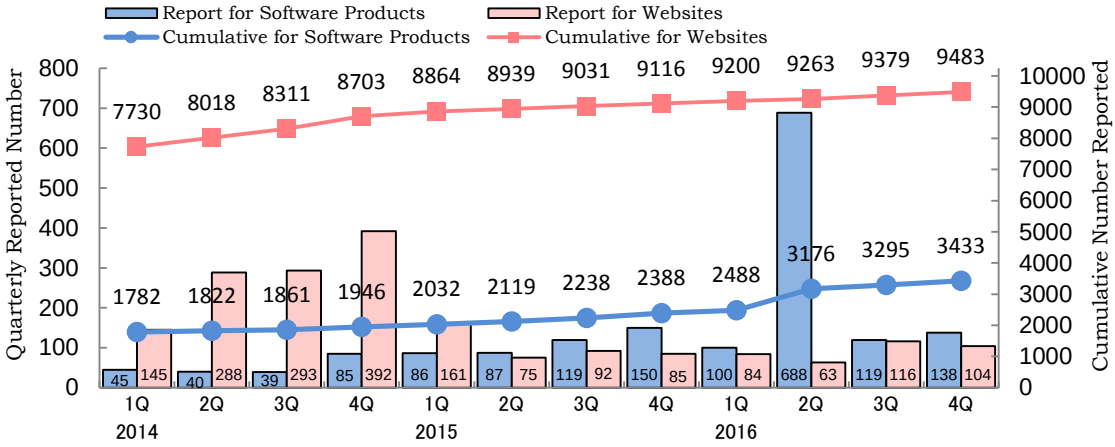
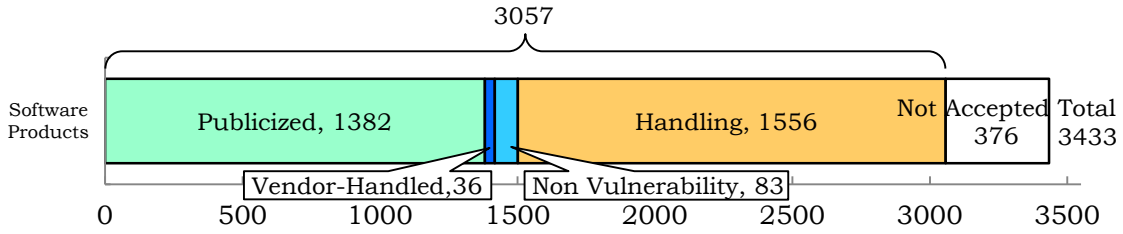
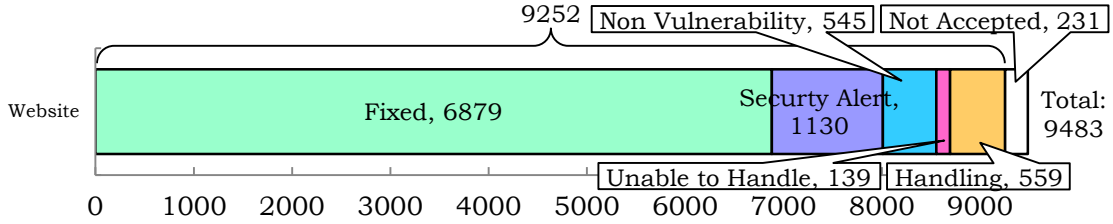


Chart 1-1: Quarterly Number of Vulnerability-related Information

The Chart 1-2 shows the processing status of reports on the vulnerability-related information as of the end of December, 2016. As for Software products, 45% (1382) of the reports being accepted as vulnerability (3057) have been fixed and publicized. As for Websites, 74% (6879) of the reports being accepted as vulnerability (9252) have been fixed.



Publicized	: Vulnerability which has been publicized with vendor's responding status on JVN
Vendor-Handled	: Vulnerability which has been informed to each user by vender individually
Non Vulnerability	: Vulnerability which has been determined not to be vulnerability by vendor
Handling	: Vulnerability which is being studied/handled by vendor
Not Accepted	: Vulnerability which is outside the scope defined by the Directive of METI



Fixed	: Vulnerability fixed by Website manager
Security Alert	: Handling was called off after countermeasure against the vulnerability is urged widely with the Security Alert by IPA
Non Vulnerability	: Vulnerability which has been determined not a vulnerability by Website manager
Unable to handle	: It is not possible to contact the Website manager. Website manager decided not to fix
Handling	: Vulnerability which is being studied/handled by Website manager
Not Accepted	: Vulnerability which is outside the scope defined by the Directive of METI

Chart 1-2: Processing Status of Reporting for Vulnerability-related Information (As of the end of December, 2016)

2. Handling of Vulnerability-related Information on Software Products and its Coordination:

The total number of information related to vulnerabilities in Software Products reported to IPA since the framework started in July 8, 2004, was 3433. The Chart 2-1 shows the breakdown of 1382 of publicized vulnerabilities, and the Chart 2-2 shows the breakdown of 3057 reports (Total 3433 minus Not Accepted 376).

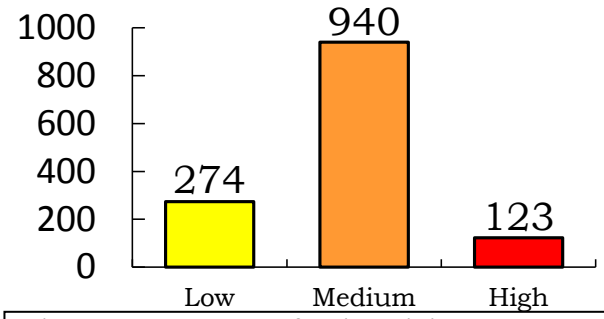
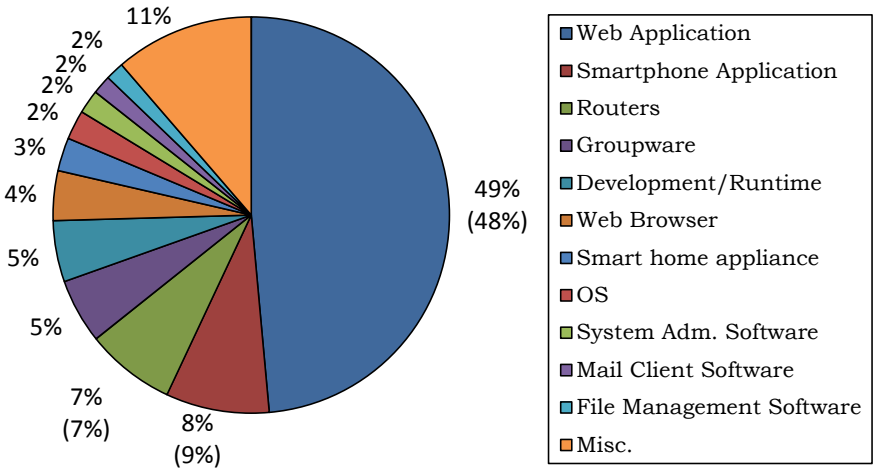


Chart 2-1 : Severity of Vulnerabilities in Software Products on JVN
Several reports may be summarized in one on JVN.
(from Initial Acceptance to the end of December, 2016)

The vulnerabilities are organized according to their severity, determined by the Common Vulnerability Scoring System (CVSS v2) standard. The scale of low, medium, and high severity corresponds to the following scores:

Low - Vulnerabilities will be labeled the Low severity if they have a CVSS base score of 0.0 - 3.9 .
Medium - Vulnerabilities will be labeled the Medium severity if they have a CVSS base score of 4.0 - 6.9 .
High - Vulnerabilities will be labeled the High severity if they have a CVSS base score of 7.0 - 10.0 .

The most reported type of software was Web application and subsequently followed by Web Browser and those listed below.



Misc. in this graph includes Software for Database, etc.
(Breakdown of 3057: Numbers in parenthesis are for the previous quarter)

Chart 2-2: Breakdown of the Vulnerabilities in Software Products (from July 8, 2004 to the end of December, 2016)

The Chart 2-3 shows the time required for the announcement of vulnerabilities in Software products. 32% of the reports was addressed within 45 days from its initial reporting to announcement.

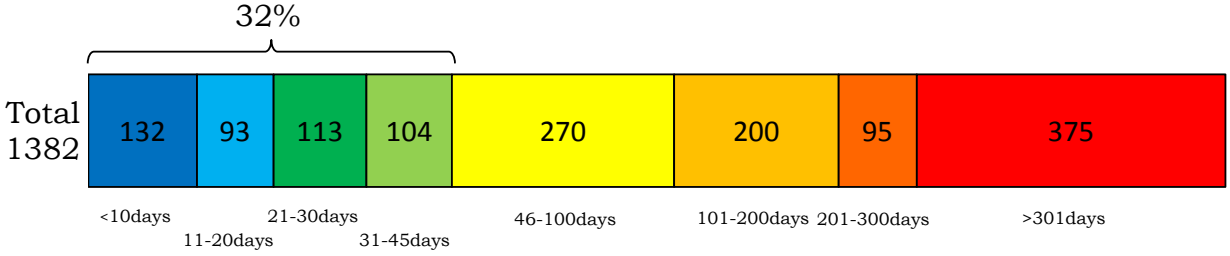


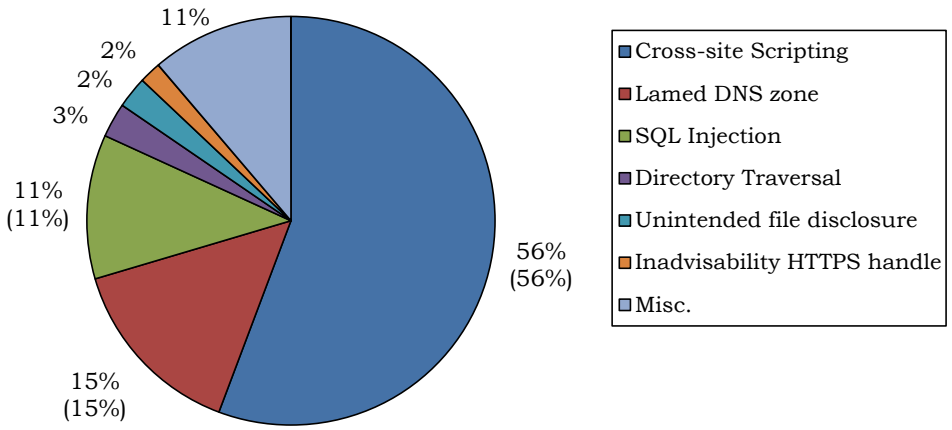
Chart 2-3: Time Required for the Announcement of Vulnerabilities in Software Products

In this Quarter, 44 vulnerabilities were announced.

3. Handling of Vulnerability-related Information on Websites:

The number of information related to vulnerabilities in websites reported to IPA since the framework started in July 8, 2004, was 9483.Removing those not accepted as vulnerabilities, the total number of the vulnerabilities was 9252. Chart 3-1 shows the breakdown of the vulnerabilities and Chart 3-2 shows the quarterly shift in their proportion found in last two years.

As for the type of vulnerabilities, “Cross-site Scripting”, “Lamed DNS zone” and “SQL Injection” account for 82% of the entire vulnerabilities.



- Breakdown of 9252: Numbers in the parenthesis are for the previous quarter

Chart 3-1: Breakdown of Vulnerabilities in Websites by Type (from July 8 2004, to the end of December, 2016)

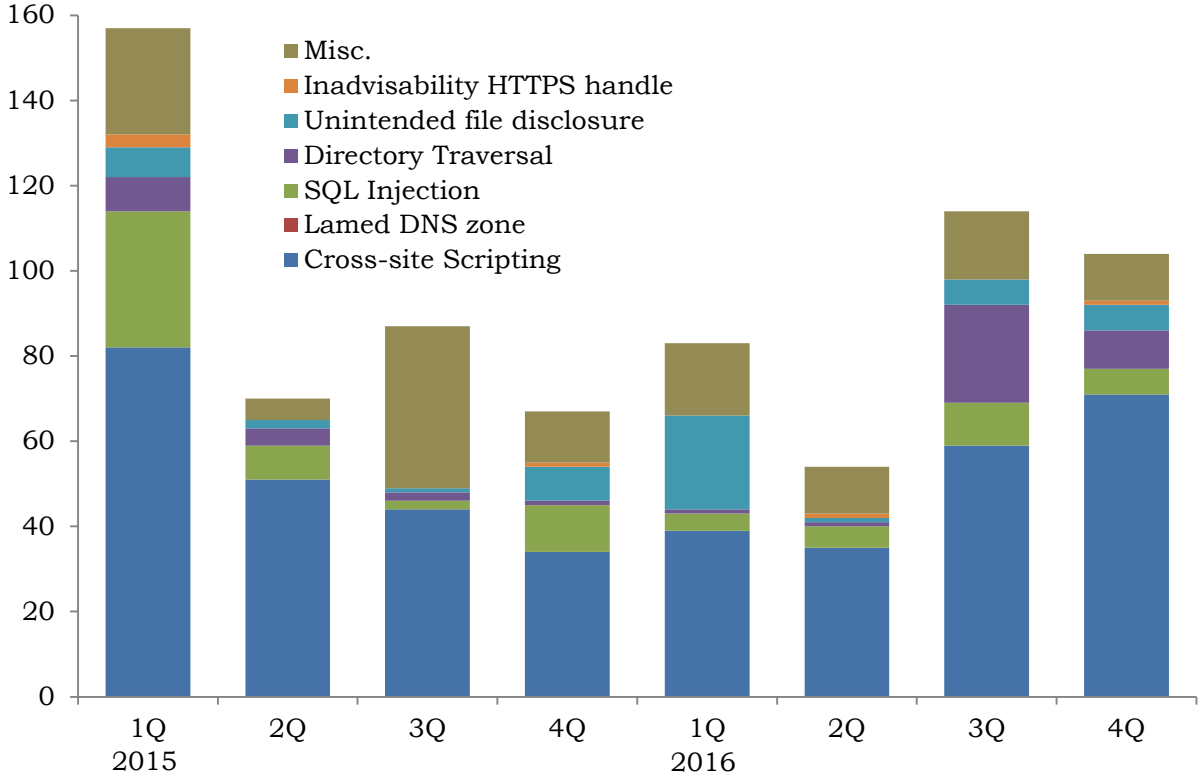


Chart 3-2: Shift in Number of Vulnerabilities in Websites by Type (from January 1 2015, to the End of December, 2016)

The Chart 3-3 and 3-4 show the time required to fix vulnerabilities by type after notification of detailed information of the vulnerabilities to Website managers. 66% of vulnerabilities reported was fixed within 90 days.

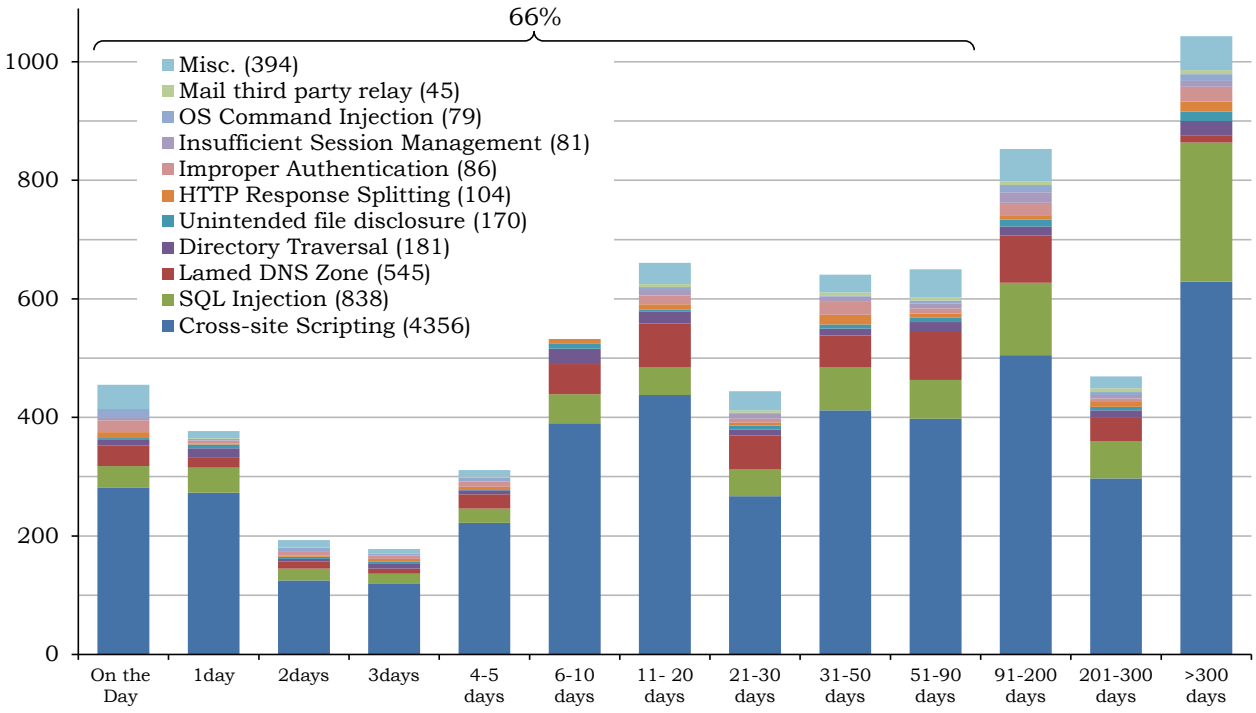


Chart 3-3: Time Required to Fix Vulnerabilities in Websites

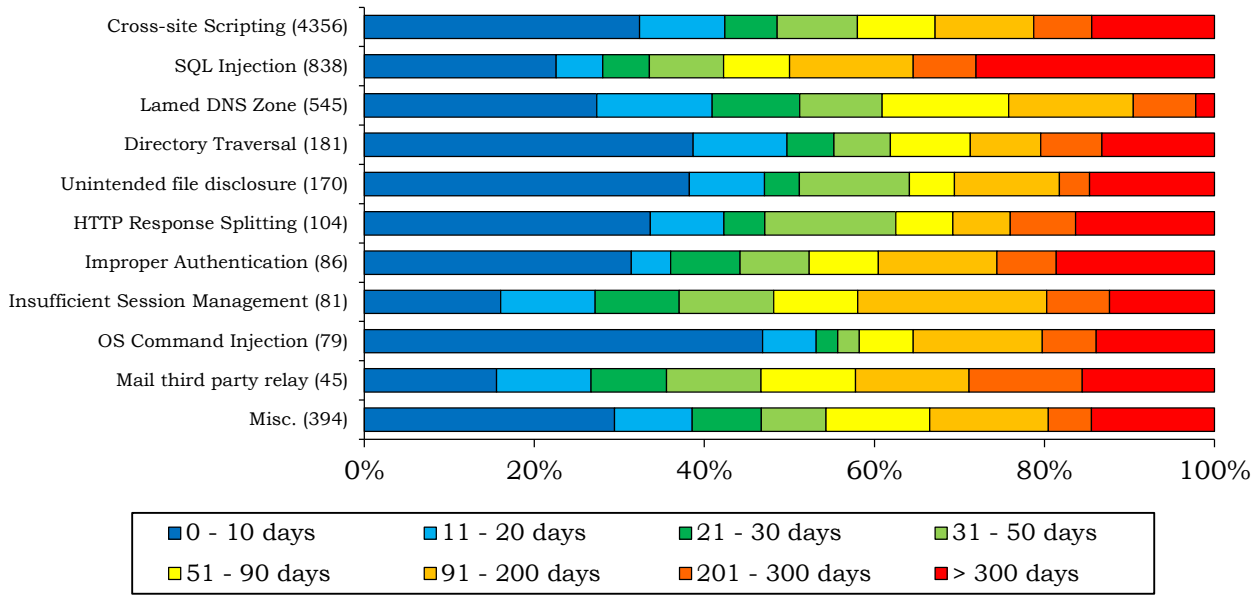


Chart 3-4: Time Required to Fix Vulnerabilities in Websites by Type

Contact

IT Security Center, Technology Headquarters,
Information-technology Promotion Agency, Japan (IPA/ISEC)
Tel : +81-(0)3-5978-7527
Fax : +81-(0)3-5978-7552
E-mail : isec-info@ipa.go.jp