

Ratio of Spam Sent from European Countries on the Rise

In this report, we will present an overview of spam trends for week 13 through week 25 of 2010. China was the top regional source of spam. The ratio of spam sent from European countries such as Germany and Great Britain is also increasing.

2.1 Introduction

This report summarizes the latest trends in spam, covers email-related technologies, and touches on various other activities in which IIJ is engaged.

In this volume we focus on data for the period of 13 weeks from week 13 of 2010 (March 29 to April 4) to week 25 (June 21 to June 27). The volume of email and the ratio of spam fluctuate due to seasonal factors such as extended holidays. However, it is possible to make comparisons that take seasonal factors into account by presenting spam ratio trends along with those for the same period the previous year.

In "Spam Trends," we cover spam ratio trends and regional source distribution, along with trends in the main regional sources of spam. Additionally, in "Trends in Email Technologies," we report on the implementation status of sender authentication technologies.

2.2 Spam Trends

In this section, we will report on historical ratios of spam and the results of our analysis concerning spam sources based on trends detected by the Spam Mail Filter provided through IIJ's email services.

2.2.1 Spam Ratio Down Slightly, but Still at a High Level

The ratio of spam averaged 81.3% of all incoming emails over the 91-day period from week 13 to week 25, 2010. This compares to an average of 82.1% for our last survey (week 1 through week 12, 2010), and 81.6% for the same period in 2009 (week 14 through week 26), indicating a slight decrease for both. Figure 1 shows spam ratio trends from week 14 of 2009 onward, including the results for the current period.

The current survey period included a long extended holiday in May, and week 18 of 2010 upon which this fell (May 3 to May 9, 2010) had the highest spam ratio at 87.9%. This 87.9% ratio was the highest of the period surveyed in Figure 1. Meanwhile, the week that indicated the lowest ratio was week 13 of 2010 (March 29 to April 4, 2010), at 79.6%. The average spam ratio for the current survey period shows a slight decrease. However, the ratio of spam to overall incoming mail is still at a high level.

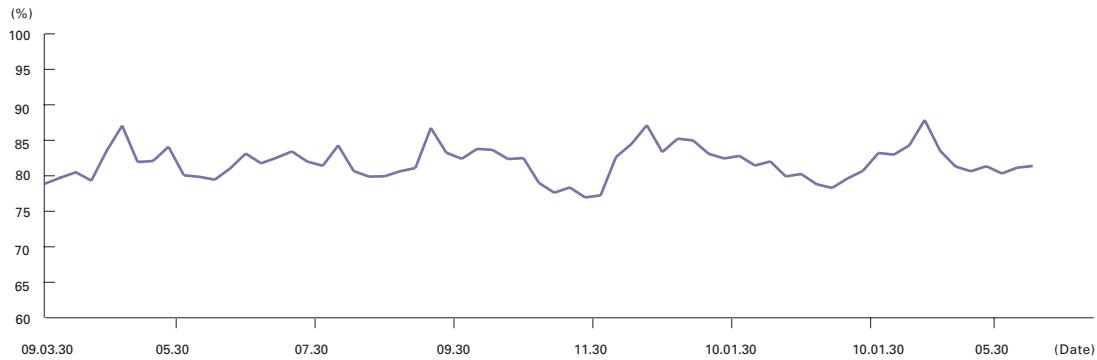


Figure 1: Spam Ratio Trends

2.2.2 China the Top Regional Source of Spam, Europe also on the Increase

Figure 2 shows our analysis of regional sources of spam over the period studied. China (CN) was the number one source of spam in this survey, accounting for 11.1% of total spam. China was in 2nd place at 7.6% in our previous survey, demonstrating that there has been a sharp increase in its ratio, with it taking 1st place for the first time since IIR Vol.2 (week 36 through week 52, 2008). The United States (US) was 2nd at 7.8%, and as with the last survey India (IN) was 3rd at 6.8%. Germany (DE) was 4th at 4.7%, with its ratio rising from 6th place in the previous survey. Brazil (BR) was 5th at 4.6%. The ratio for Brazil continues to fall as was the case for the previous period. Great Britain (GB) was 6th at 4.0%.

One of the characteristics of the current survey results is the increased ratio of spam sent from leading industrial European nations such as Germany and Great Britain. Analysis data from another company^{*1} also produced similar results, so it is fair to say that the rise in the ratio of spam from European countries is an overall trend. These regions have high populations and established Internet access environments. The fact that these regions were not among the top sources of spam until now may be because they have been implementing a number of countermeasures in a similar manner to Japan. It appears that they rose to higher rankings in this survey due to the fact that these countermeasures are no longer sufficient. New transmission methods may have also started being used. Consequently, we believe that it will be necessary to continue monitoring the situation. Japan remained in 7th place as with the previous survey, maintaining the same ratio of 3.9%.

Figure 3 shows trends in ratios for the five main regional sources of spam (CN, US, IN, BR, and KR) until now. China (CN) was the region with the highest ratio almost continuously since March of this year. We can see that Brazil (BR) and Korea (KR) have been comparatively settled, and that India (IN) is in a slight upward trend.

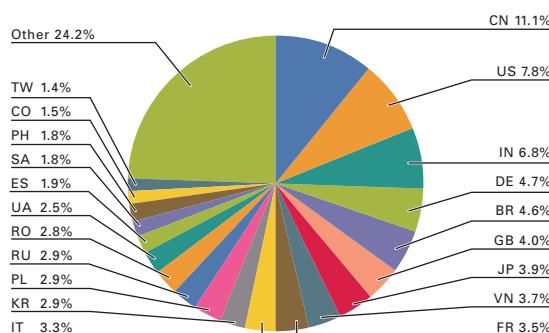


Figure 2: Regional Sources of Spam

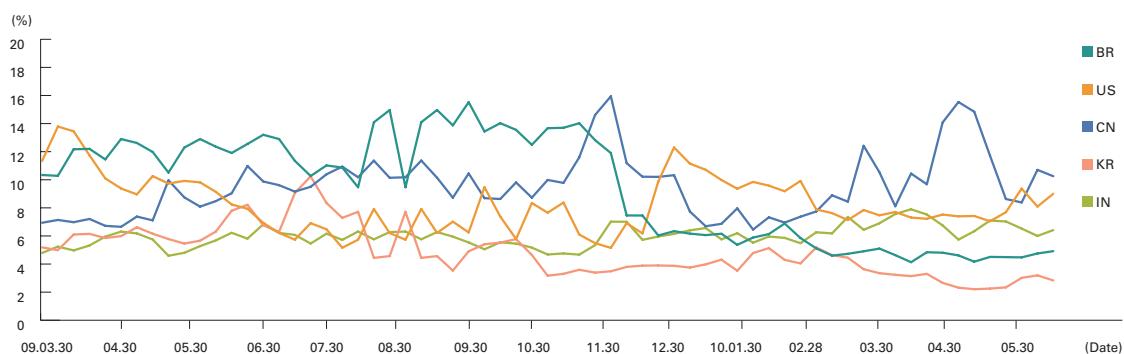


Figure 3: Trends in the Main Regional Sources of Spam

*1 The top twelve spam relaying countries for April - June 2010 (<http://www.sophos.com/pressoffice/news/articles/2010/07/dirty-dozen.html>)

2.3 Trends in Email Technologies

In this section, we report on implementation status survey results for the SPF (Sender Policy Framework) network-based sender authentication technology. Figure 4 shows the authentication result ratios during the current survey period (April 1 to June 30, 2010) for a particular mail service provided by IIJ. Of the emails received during this period, 54.9% indicated "none" as the authentication result. This means that the domain for approximately 45.1% of email received declared an SPF record. This result is a slight increase of 0.7% over the survey for the previous period.

Similarly, Figure 5 shows the authentication result ratios for JP domains. 41.7% of the overall number of emails indicated "none," meaning that JP domains for approximately 58.2% of email received declared an SPF record.

According to a survey of SPF record rate of publication for JP domains^{*2} that the WIDE Project is carrying out through a contract of collaborative research with JPRS (Japan Registry Service Co., Ltd.), the deployment ratio was 38.8% as of May 2010. The attribute-based SPF record rate of publication for JP domains also indicates that the co.jp domains used by corporations and other organizations boast the highest ratio at 45.4%. From these results, we can say that SPF record rate of publication is at a considerably high level for Japan's JP domains. In the future, as the introduction of authentication features for mail receivers progresses, we can expect to be able to detect forged sender information that is common in spam on the recipient side.

2.4 Conclusion

In early June I attended the 19th General Meeting of MAAWG (Messaging Anti-Abuse Working Group), which IIJ has participated in since its establishment. As can be seen from the current survey results, spam ratios remain at a high level worldwide, and ISPs are facing a large number of challenges. The techniques used to send spam change on a daily basis, and ISPs must continue to play catch-up with their countermeasures. Recently the use of new Internet connection routes such as wireless LAN and mobile data communications has become possible in addition to fixed lines. From a user's perspective this brings added convenience due to the ability to use a variety of services over the Internet from any location, but we must not forget that it also makes things easier for senders of spam. IIJ will continue to coordinate with a variety of organizations both in Japan and overseas to promote anti-spam measures.

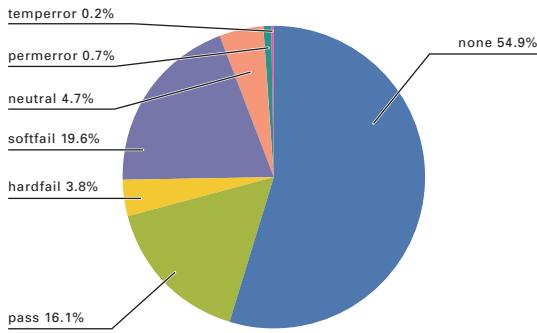


Figure 4: SPF Authentication Result Ratios for Received Mail

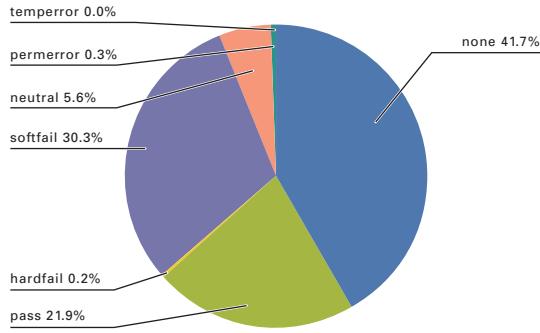


Figure 5: Authentication Result Ratios for JP Domains

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Mr. Sakuraba is a Senior Engineer in the Application Service Department of the IIJ Service Division. Mr. Sakuraba is engaged in the research and development of messaging systems. He is involved in various activities in collaboration with external related organizations for securing a comfortable messaging environment. He is a MAAWG member and JEAG board member. He is a member of the Council for Promotion of Anti-Spam Measures and administrative group, as well as chief examiner for the Sender Authentication Technology Workgroup. He is also a member of Internet Association Japan's Anti-Spam Measures Committee.

*2 Measurement Results on Deployment Ratio of Domain Authentications (<http://member.wide.ad.jp/wg/antispam/stats/index.html.en>)