

## Ratio and Volume of Spam Originating from China Rises Sharply

In this report we will present an overview of spam trends for week 14 through week 26 of 2011.

As was the case in the previous study, China was the number one source of spam.

The ratio of spam from China has been surging rapidly since February 2011.

### 2.1 Introduction

In this report we discuss the latest trends in spam and email-related technologies, and summarize various activities in which IJ is engaged. In this volume we focus on data for the period of 13 weeks from week 14 of 2011 (April 4 to April 10, 2011) to week 26 (June 27 to July 3, 2011), which corresponds to the 1st quarter for many Japanese companies. We also report on authentication result ratios for SPF (Sender Policy Framework) and DKIM (DomainKeys Identified Mail) to gain a better understanding of the adoption of sender authentication technology.

### 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 IJ's email services. In the previous report we noted that spam ratios were on the decline, and results for the current survey period indicate that this downward trend is continuing. We examine the ratios of regional sources of spam to identify possible contributing factors to this.

#### 2.2.1 Spam Ratios Continue to Decline

Figure 1 shows spam ratio trends over the period of one year and three months (65 weeks), including the current survey period and the same period for the previous year. The average spam ratio for the current survey period was 50.2%. This represents a drop of 15.2% over the previous report, and a significant drop of 32.1% over the same period for the previous year. This shows that the reduced ratio of spam from the latter half of last year has continued. As mentioned in our last report, this decrease in spam is due to the detection and suppression of botnets that serve as the main method of spam transmission through the efforts of law enforcement agencies and security specialists around the world.

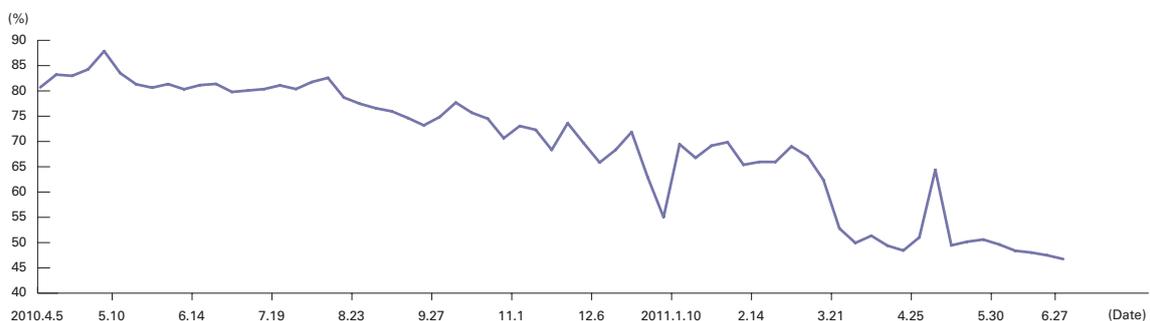


Figure 1: Spam Ratio Trends

The question of whether spam will continue to drop remains to be answered. The countermeasures that have proved most effective at preventing the sending of spam to date involve shutting down the hosts or administrators that send commands to botnets. Security vendor Kaspersky Lab recently reported the results of their analysis of a new type of malware (malicious software)\*1. This TDSS malware and its variants, in particular TDL-4, have been improved in many ways, such as using encryption for commands from the control source and a peer-to-peer network for the delivery of these commands. Because those using PCs and the Internet for malicious purposes continue to develop new operating methods, it is not known how long current countermeasures will remain effective.

### 2.2.2 Japan Becomes the 2nd Largest Regional Source of Spam

Figure 2 shows our analysis of regional sources of spam over the period studied. As with the previous period, China (CN) was the number one source of spam in this survey, accounting for 29.5% of total spam, with the actual volume of spam also increasing. Japan (JP) was 2nd at 11.1%. Although there was no significant change in actual volume for Japan, its ratio has increased due to the lower volume of spam overall. The Philippines (PH, 9.8%) was 3rd, with its ratio and ranking climbing from 4th place in the last survey. South Korea (KR, 6.1%) was 4th, the United States (US, 4.3%) was 5th, and Russia (RU, 4.2%) was 6th.

Taking a closer look at the sources of spam in Japan, most was sent from sources thought to be distributing content such as email newsletters. Although some mail distributors check the identity of subscribers and take steps to prevent the sending of spam by properly managing which email addresses messages are not delivered to, others pay little attention to the content of the mail they deliver or recipient email addresses. The existence of operators like these may give a poor impression of email distributors as a whole.

### 2.2.3 Trends in the Main Regional Sources of Spam

Trends in the regional sources of spam received in Japan are changing along with the overall decrease in volume. Figure 3 shows trends in the top six regional sources of spam for this survey period during 2011.

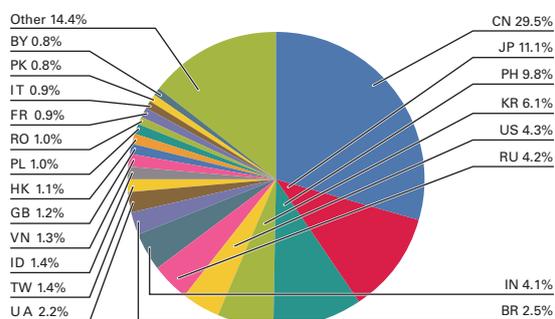


Figure 2: Regional Sources of Spam

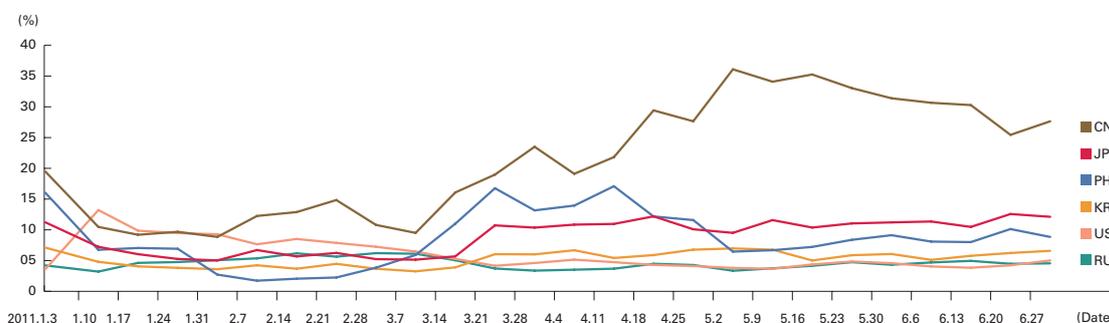


Figure 3: Trends in Ratios for the Main Regional Sources of Spam

\*1 [http://www.securelist.com/en/analysis/204792180/TDL4\\_Top\\_Bot](http://www.securelist.com/en/analysis/204792180/TDL4_Top_Bot)

Looking at this figure, we can see that the ratio of spam from China (CN) spiked dramatically from around February of this year (2011). During the first half of May in particular, it accounted for over a third of the spam sent. We can also see that Japan has held second place since May.

### 2.3 Trends in Email Technologies

Here we will examine a variety of technological trends relating to email. In this report we will continue our analysis of the recipient authentication results for sender authentication technology.

Figure 4 shows SPF authentication result ratios for email received during the current survey period (April to June 2011). 46.5% of authentication results showed "none," indicating that the sender domain did not declare an SPF record. This was a drop of 3.7% compared to the previous survey. This means that adoption increased by 3.7% based on the volume of mail sent. The 35.4% of authentication results that showed "pass" was a 6.8% increase over the previous period, indicating an increase in mail from legitimate senders declaring an SPF record.

Similarly, Figure 5 shows the ratios of authentication results for DKIM, which is another leading sender authentication technology. 95.9% of authentication results showed "none," indicating that DKIM has not been adopted, so it appears that unfortunately sender adoption of DKIM has not progressed much at all.

### 2.4 Conclusion

In June IJ attended the 22nd General Meeting of MAAWG (Messaging Anti-Abuse Working Group), which it has been involved with since its establishment in 2004. MAAWG is a gathering where participants from around the globe discuss a range of issues related to anti-spam measures. However, in part due to the venue of the meeting, there are unfortunately few participants from Japan. There are also few participants from other parts of Asia, and discussions tend to be led by western countries. For this reason I do my best to exchange views on the status of Japan and Asia with other participants. The 23rd General Meeting is scheduled to be held in Paris, France this October.

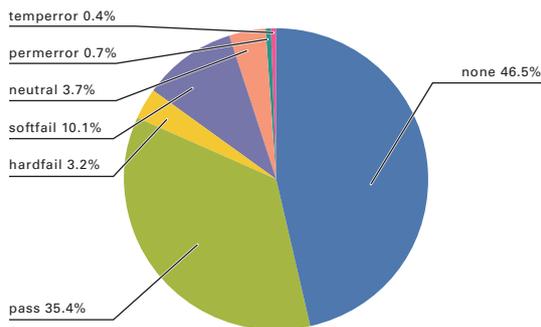


Figure 4: SPF Authentication Result Ratios

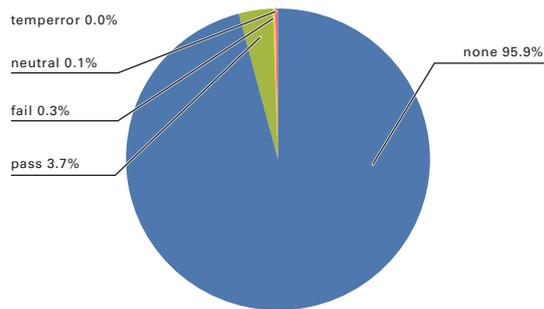


Figure 5: DKIM Authentication Result Ratios

**Author: Shuji Sakuraba**

Mr. Sakuraba is a Senior Engineer in the Application Service Department of the IJ Service Division. He is engaged in the research and development of messaging systems. He is also 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 Anti-Spam mail Promotion Council (ASPC) 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. He is a member of the Ministry of Internal Affairs and Communications' Unsolicited Mail Measure Working Group.