Messaging Anti-Abuse Working Group
(MAAWG)

Email Metrics Program:
The Network Operators' Perspective

Report #5 - First Quarter 2007
(Issued June 2007)

Executive Summary

The Messaging Anti-Abuse Working Group has organized the data compiled over six quarters into this latest Email Metrics Report as an unbiased tool for estimating the level of abusive messages in the email stream. This fifth report incorporates new data for the first quarter of 2007, adding the metrics from January through March.

The results of the MAAWG Email Metrics Report continue to be generally consistent with about 75 percent of email traffic identified as abusive messaging. This outcome has not changed significantly since the last report which encompassed the third and fourth quarters of 2006.

The metrics data continues to be provided voluntarily and confidentially by Internet Service Providers, network operators and email providers that have come together in MAAWG to work against online abuse. MAAWG members are under no obligation to supply this information or participate in the metrics reporting program. The data is shared at the discretion of each company and is reported here as aggregated metrics to support the industry's efforts in preventing abuse from reaching individual user mailboxes. Participating members include Comcast, Cox Communications, Outblaze Ltd., TDC and TDS Telecom, among others.

The MAAWG Email Metrics Program now provides aggregated data covering over 500 million mailboxes.

MAAWG remains committed to gathering and reporting this unique set of metrics, which are provided directly by our service provider members. Our Email Metrics Program has become an important framework for understanding the extent of abusive emails and for responding to fraudulent and damaging online activity.

Report #5 – 1st Quarter 2007 Results

The statistics reported below are compiled from confidential data provided by participating MAAWG member service operators for Q1 2007, adjusted as necessary. The data shows no significant change from the Q4 2006 metrics.

Reported Metrics	Report #5 Q1 2007	Report #4 Q4 2006	Report #4 Q3 2006	Report #3 Q2 2006	Report #2 Q1 2006	Report #1 Q4 2005
Number of Mailboxes Represented	510.354 Mil.	489.222 Mil.	475.755 Mil.	435.626 Mil.	389.674 Mil.	357.777 Mil.
Number of Dropped Connections & Blocked/Tagged Inbound Email	390.491 Bil.	390.650 Bil.	492.205 Bil.	408.009 Bil.	405.844 Bil.	361.279 Bil.
Number of Unaltered Delivered Email	128.448 Bil.	127.751 Bil.	143.558 Bil.	142.485 Bil.	102.418 Bil.	86.226 Bil.

Selected Ratios	Report#5 Q1 2007	Report#4 Q4 2006	Report#4 Q3 2006	Report#3 Q2 2006	Report #2 Q1 2006	Report #1 Q4 2005
Dropped Connections & Blocked/Tagged Inbound Emails per Mailbox	765	799	1035	937	1041	1010
Dropped Connections & Blocked/Tagged Inbound Emails per Unaltered Delivered Email	3.04 or 75.25% abusive email	3.06 or 75.36% abusive email	3.43 or 77.42% abusive email	2.86 or 74.12% abusive email	3.96 or 79.84% abusive email	4.19 or 80.73% abusive email
Number of Unaltered Delivered Email per Mailbox	252	261	302	327	263	241

Observations

It is important to understand that the metrics in the MAAWG report do not represent spam, but report the volume of email identified as "abusive." This distinction is significant because the definition of spam can vary greatly from country to country and as used in local legislation.

The percentage of email identified as abusive has been oscillating between 75% and 80%, and the same can be said for the number of unaltered delivered email per mailbox, in roughly an inverse manner. The fluctuation in the metrics, therefore, may be the result of service providers dealing with new schemes introduced by abusers to escape service providers' detection methods, including filters, to keep abusive email from reaching users' inboxes.

The metrics continue to reflect the continuing high level of abusive email the industry works to prevent from clogging users' inboxes and the need for continued industry cooperation and diligence.

What is Measured?

- **Number of Mailboxes Represented** - This is the total current customer mailbox count at the end of the quarter. This metric is reported in million of mailboxes.
- **Number of Dropped Connections and Blocked/Tagged Inbound Emails** – Taken together, dropped connections and blocked/tagged inbound emails are a measure of "abusive emails." The Number of Dropped Connections is the total connections dropped by using RBLs (Real Time Blacklists) and other devices. The Number of Blocked or Tagged Inbound Emails is the total

number of emails blocked or tagged by a provider using commonly applied devices such as ASAV (Anti-Spam/Anti-Viral) framework, MTAs (Mail Transfer Agents) and other recipient or message based rules. The sum of three months of dropped connections and blocked or tagged inbound emails is reported in billions. In this report, one dropped connection is equivalent to one blocked or tagged inbound email.

- **Number of Unaltered Delivered Emails** - This is the total number of emails that were not blocked or tagged by the network operator's anti-abuse efforts and were delivered to customers. The sum of three months of delivered emails is reported in billions.

<u>Explanatory Notes:</u>

- **Abusive Emails:** The one thing this report does not attempt to define is "spam." Even though a great deal of time and energy have been devoted to clarifying this term, there is no universally accepted definition. The precise definition of spam differs slightly from jurisdiction to jurisdiction in accordance with local laws. For example, in Europe and Canada, spam is based on an "opt-in" approach, whereas the United States has adopted an "opt out" approach. Nevertheless, most would agree that "spam" can be defined as electronic communications that likely are not wanted or expected by the recipient.

  What is more, in working to reduce spam, the industry has become increasingly focused on the behavior of the sender instead of only looking at the form or content of a message. In this report, therefore, we measure "abusive email," which we believe to be a more accurate term. Abusive emails are communications that seek to exploit the end user.

- **False Positives:** Given the massive volumes of email that transverse the networks everyday, one of the challenges facing ISPs and network operators is how to differentiate between abusive, unwanted emails and legitimate messages sent to a large number of recipients. A "false positive" is the term generally used to describe legitimate messages that have been blocked or tagged by a spam filter or other mechanisms intended to stop abusive email. The issues that arise in the context of accurately defining and accounting for false positives are similar to those associated with defining spam. Therefore, this report does not attempt to account for any "false positives," leaving that assessment to others.

- **ISP and Network Operator Data:** As noted above, this aggregated data has been obtained exclusively from ISPs, network operators and email providers who are members of MAAWG. It does not include information generated separately by anti-abuse solution providers or vendors.

- **Minimum Number of Mailboxes:** This email metrics program is based on a minimum threshold of 100 million mailboxes, as we believe this number is statistically significant.

- **Dropped Connections:** A dropped connection occurs before the number of recipients or emails is known. It is therefore impossible to determine how many abusive emails per dropped connection were prevented from entering the network. Moreover, when a connection is prohibited, i.e. "null routed," there is no connection to count and so these are not factored in the number of reported dropped connections. As a result, a substantial volume of abusive emails are never likely to be counted. However, it is a conservative estimate to say that each dropped connection corresponds to at least one abusive email. This metric, although imprecise in and of itself, gives a sense of the magnitude of abusive emails that are not even penetrating the operator's network.

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