SPAM: 101
Cause and Effect

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Part I: Background on JARING

(We're the good guys.)

What is JARING?

- The first ISP in Malaysia (1992: 28 subscribers).
- Today: 800,000 subscribers
- Services:-
  - Dial Up, Office Broadband, Wireless Broadband, Dedicated Access, Secure VPN, VOIP
  - Secure Internet Data Centre, Web Hosting, Firewall Solution, E-mail.
- 6 * /16, 2 * /17, 1 * /18 = 475,136 addresses
- 8% is allocated for dynamic IP addresses

Part II: SPAM 101

(A lot of good things, just focusing on one of the not so good ones, with spammers mostly.)

What is Spam and Malware in E-Mail Context?

- Definitions in the context of JARING E-Mail Service:-
- Spam: Unsolicited, bulk mail operations. Examples:-
  - Mails duplicated and sent to a high percentage of users, sometimes in a distributed fashion
  - Dictionary attacks launched to harvest working ISP e-mail addresses
- Malware: Unsolicited mail with virus or worm attached to it.
  - Normally a seasonal phenomena
  - Sizable increase of malware in mails in 2004.

Incoming Spam: Impacts to ISPs

- Waste of Resources: 50-80% of e-mail traffic is Spam.
- Difficulty of Management: E-mail traffic has spikes, i.e. seasonal malware attacks (MyDoom, Bagle, Netsky).
- Performance Impact: performance hit in delivering, fetching and managing mails.
- Inconvenience/Nuisance to customers: A JARING E-mail account receives on average 5-20 spam e-mails per day, depending on popularity of e-mail address in spammers' databases.

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Incoming Spam: How do ISPs get spammed?

- Spammers or malware harvest addresses by collecting published / semi-published information using multiple harvesting techniques:-
  - Collect e-mail addresses from websites
  - Collect e-mail addresses from newsgroups
  - Collect e-mail addresses from mailing list archives
  - Fake mails to ISPs to collect probably active e-mail addresses (dictionary attacks).
- Spam gets sent from:-
  - Spammer-friendly networks (i.e. networks in blocklists)
  - Compromised systems by crackers or malware (increasing!)

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Outgoing/Linked Spam:
How do ISP networks get enlisted into SPAM and Anti SPAMMER's database

- Hosts machines vulnerable to intrusions and exploits by crackers and/or spammers:-
  - Open Relay/Proxy: mis-configured / worm-infected host which allows anyone, anywhere to send mail to any address in the Internet.
    - Mis-configured open relays/proxies: often occur in leased line customers who run their own mail or proxy servers.
    - Worm-infected open relays: often occur in individual dial-up or broadband users, i.e. dynamic IP range.

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Part III: Effects

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Enlistment into Anti-SPAMMER's database

- "Spamvertizing". Example: JARING's past SPEWS entry:-
  - SPEWS evidence S2062: the 2 parties:-
    - PERPAY-TWO (PerPay.com / PerPay Sdn Bhd):-
      - JARING delegated 61.6.67.88 – 61.6.67.95 range
      - Range used to host DNS records for Bullet9 (ns1.exubient.com),
      - Range used to host web space for spammer, i.e. "spamvertizing": http://www.wwecourse.com/…:-
      - The URL is linked to in spam mails.
      - Basically hosts more information / supporting system fpr the products and services being advertised by spammers.
    - Bullet9 (Bullet9 Communications):-
      - Major spammer web hosting and bulk mail advertiser, with resources in Malaysia and Russia).

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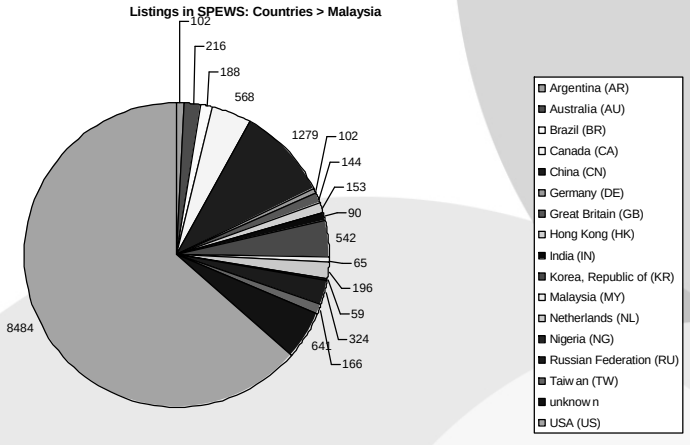
July 2003: Listing in Popular Blocklists (Countries)



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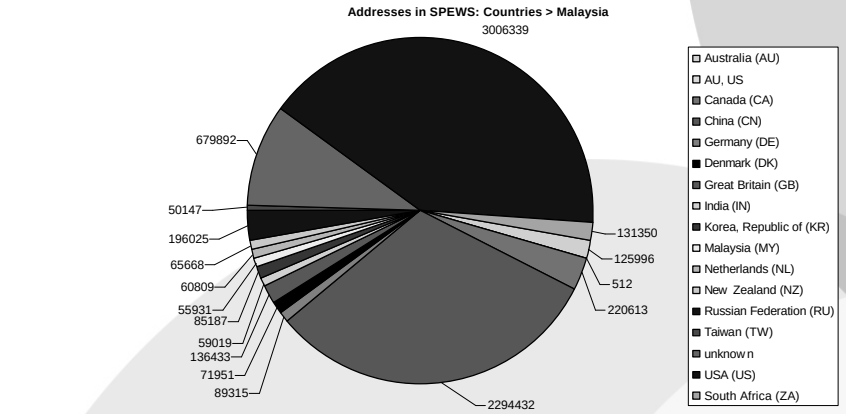
July 2003: Addresses in Popular Blocklists (Countries)



Total Addresses in SPEWS: 7347714

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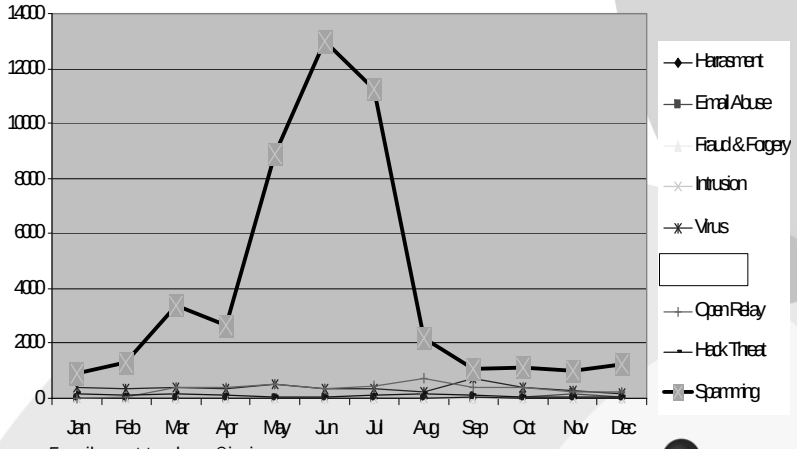
JARING Incident Reports (2003)



Source : Emails sent to abuse@jaring.my

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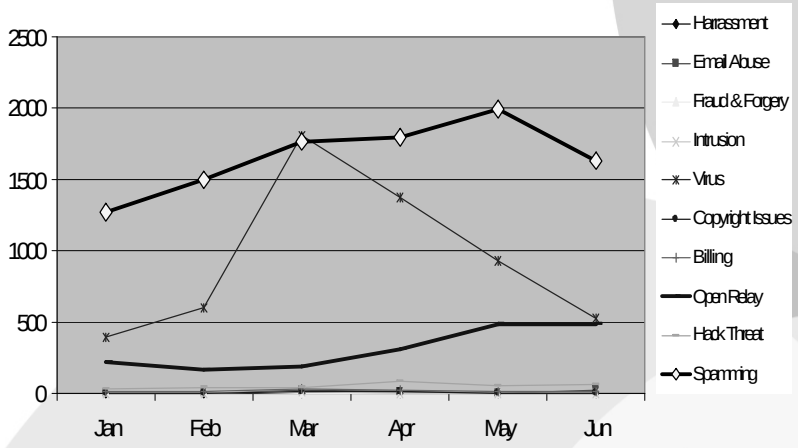
JARING Incident Reports (2004)



Source : Emails sent to abuse@jaring.my

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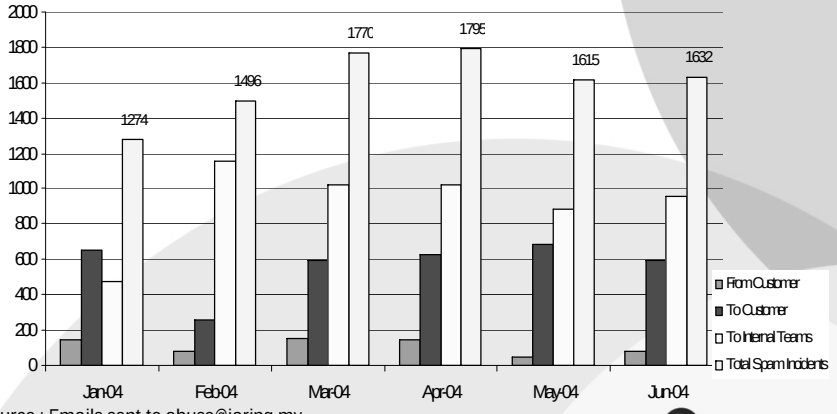
JARING Spam Incident Reports (2004)



Source : Emails sent to abuse@jaring.my

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Part IV: Lessons Learned

"Experience is a harsh teacher. It first gives you the test then the lesson."

What Really Happened?

- In February 2003, 4 new accounts started operating under 2 company names.
- 2 more accounts started operating in May and June 2003, each under 2 different companies.
- During these periods, spam complaints shot up, and each company were dealt with separately (given ample time to respond, 2nd chances, etc).
- We monitored and found out in July 2003 that all these companies are actually the same spammer using spam-vertised mode.
- Suspended them immediately, and started termination process.
- Finally removed from SPEWS October 2003.

How did we get delisted?

- Only people behind SPEWS knows.
- But what we did was:-
  - Trace spamvertizing accounts (6) to their root (identified as one spammer), and blacklist the person.
  - "Clean up" our networks from these accounts: Suspend+disconnect them immediately, then terminate them.
  - Renew AUP, improve and detail out antispam enforcements.
    - http://www.jaring.my/corporate/aup/index.html

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I thought we are handling spam cases?

- Current processes were inadequate. Examples:-
  - Inadequate policy, its enforcements and awareness, especially to downstream providers / hosting companies.
    - Many customers are unaware of how to handle spamming cases in networks delegated to them
    - Some are not sensitive to spam, I.e. subscribe to spammers' services to promote their products and services
    - Meanwhile, antispam community, especially blocklist maintainers, push for ISPs to play much greater role in ensuring that all their customers networks are "spam-source-free". (i.e. no open relays, spammers, worm-infected hosts, etc).
  - Spammers are terminated, but able to register again.
    - Global spammer networks like Bullet9 possibly have agents in Malaysia, registering company names used to hop around JARING (and other ISPs) networks.

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Action #1: AUP Review

- Previous AUP (Terms and Conditions):-
  - You agree not to use the Forums or any other service provided by JARING to:
    - b) Upload, post, e-mail, publish, transmit or distribute any material containing any unsolicited or unauthorized advertising, promotions, surveys, junk mail, chain letters, pyramid schemes, or any other form of solicitation of goods and services;
- Needed stronger emphasis and detail.
- Published and Enforced new AUP:-
  - http://www.jaring.my/corporate/aup/index.html

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Action #2: Improve Enforcements (Part 1)

- Be strict:-
  - Terminate customers who are proven to spam at first proven record of spam, I.e. no second chances (Exceptions: genuine negligence such as open relay).
- Be thorough:-
  - Monitor posting in blocklists, NANAE and NANAS, and take action on them ASAP.
  - Maintain own terminated companies / CEOs / contact persons responsible for spammer accounts, to be used for background checks on each new account, and made available to public, or at least all downstream providers.

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Action #2: Improve Enforcements (Part 2)

- Be proactive:-
  - Downstream providers / hosting companies must be required to employ at least the same standards as JARING in terms of abuse management and policy enforcements
  - Maintain awareness among the downstream admins, I.e. set up mailing list for abuse-related discussions and announcements.

Action #3: Review Registration Process

- Do background checks on ALL potential corporate customers:-
  - Check company details, profile, key persons, etc. against JARING blocklist database
  - Check for any current or past affiliation with major global spammers like bullet9 or others found in Spamhaus's ROKSO database.
- If potential customer is a provider / hosting company, ensure they are aware of their responsibilities etc. as in our AUP and abuse management policies.

Action #4: Technical Preventive Steps

- Re-arrange networks to distance different classes of users (avoid mixed dynamic and static ranges)
- For e-mail services: scan and remove as much malware and spam as feasibly possible at the e-mail gateway (MX) level, while minimizing false positives and provide as much control to the customer as feasibly possible.
- **Monitor smtp traffic for spikes and spam patterns, and alert standby personnel for verification. Block the spamming host if verified.**
- **Monitor other traffic and resources (e.g. newsgroups) for spam instances attributed to the ISP.**

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Part V: Challenges and Propositions

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Challenge #1: Spammers Are Still Here

- **JARING booted them out, but they move to other ISPs. Watch out! Check for your ISP range in blocklists.**

Spam prevention

- Spam filter
- Policies and framework
- Laws and regulation

Proposition #1: ISPs Unite Against Spammers

- Proposition: ISPs need to work together! Some suggestions of what we have to maintain:-
  - A shared resource among Asian ISPs, or at least among local ISPs, of blacklisted customers (companies, individuals, etc).
  - A shared “whitelist” networks (ISP architecture networks, for exceptions in each others' blocklists)
  - Publish ISP's dynamic IP range (for blocking certain activities such as direct-to-MX)
  - Raise awareness / enforce security on users (e.g. audit customer networks and notify).

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Proposition #2: Stronger Antispam Legislation

- Stronger policies, e.g.:-
  - http://www.jaring.my/corporate/aup/index.html
- Proposition: Work with regulators to discuss ways to close holes exploited by spammers (after termination, registering as some other company under someone else's name).
- Include Spam as part of Cyber Crime.
- ISPs and regulators work together with international antispam efforts, to regain back the country's tarnished reputation w.r.t. Spam.

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Proposition #3: Education, Education

- The actions outlined in new policies require educating every level within the ISP organisation:-
  - Enforcers
  - Sales
  - Technical
  - Downstream providers
  - End users
- Customer/User Education also vital: e.g. FAQs on spam and other security issues.
  - (http://www.jaring.my/corporate/aup/index.html)
- Raise awareness on other areas prone to spam (mobile, fax, phone, etc).

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Thank You.

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