The fight against SPAM

An Internet Number Resources Management Perspective

By

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Overview

1. Background
2. Statistics
3. Spam sources
4. Role of an RIR
5. Recommendations

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BACKGROUND

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Origin

spam – noun:
a canned meat product made mainly from ham

Meaning

spam – noun:

irrelevant or inappropriate messages sent on the Internet to a large number of recipients

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Well-known issue

- Multidimensional issue
- Started long time back
- ISOC, ITU, M3AAWG, IETF involved
- Many research initiatives
- Role of Regional Internet Registries (RIR)?

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STATISTICS

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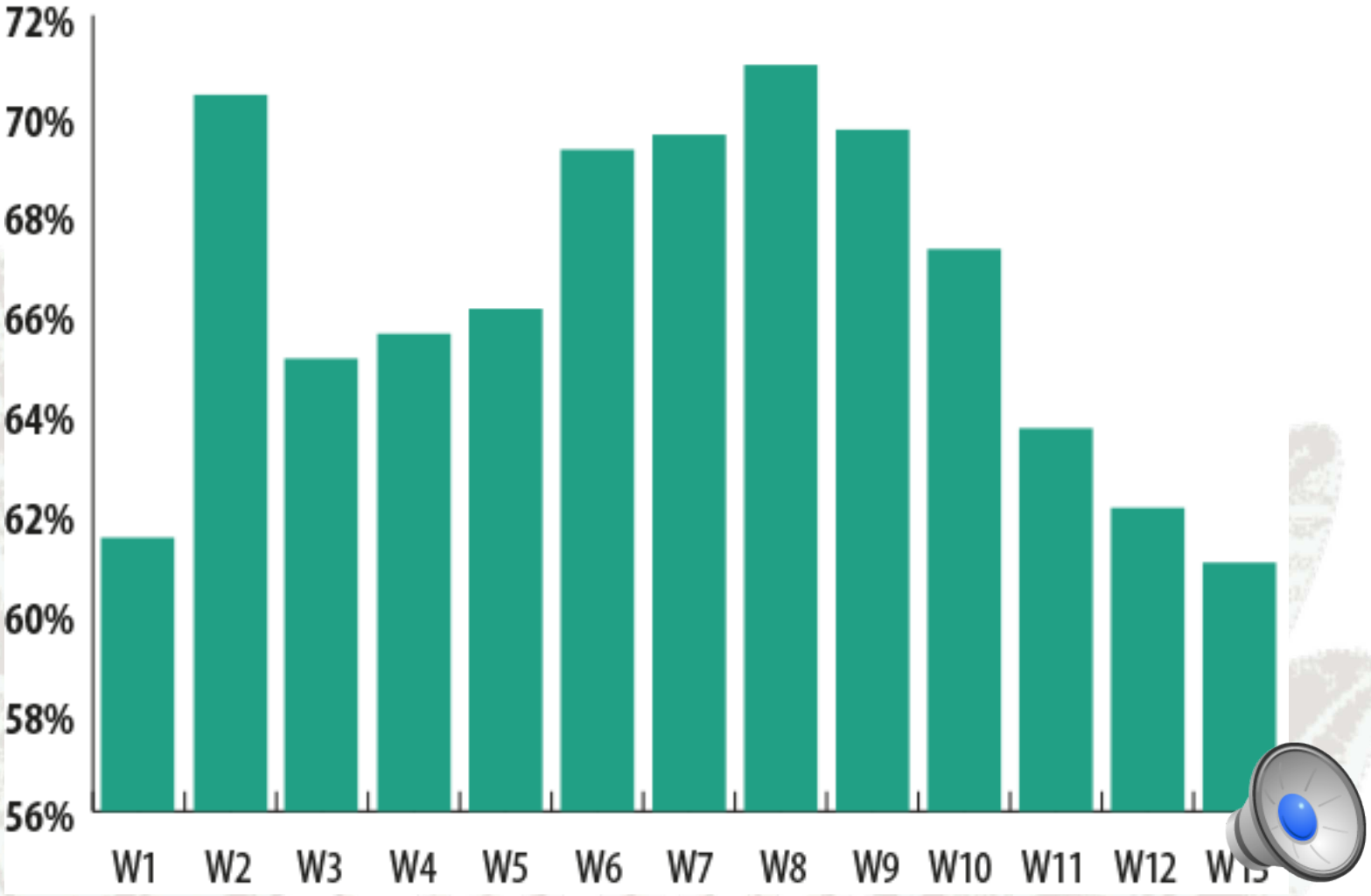
Spam and Phishing statistics Report Q1-2014

KASPERSKY lab



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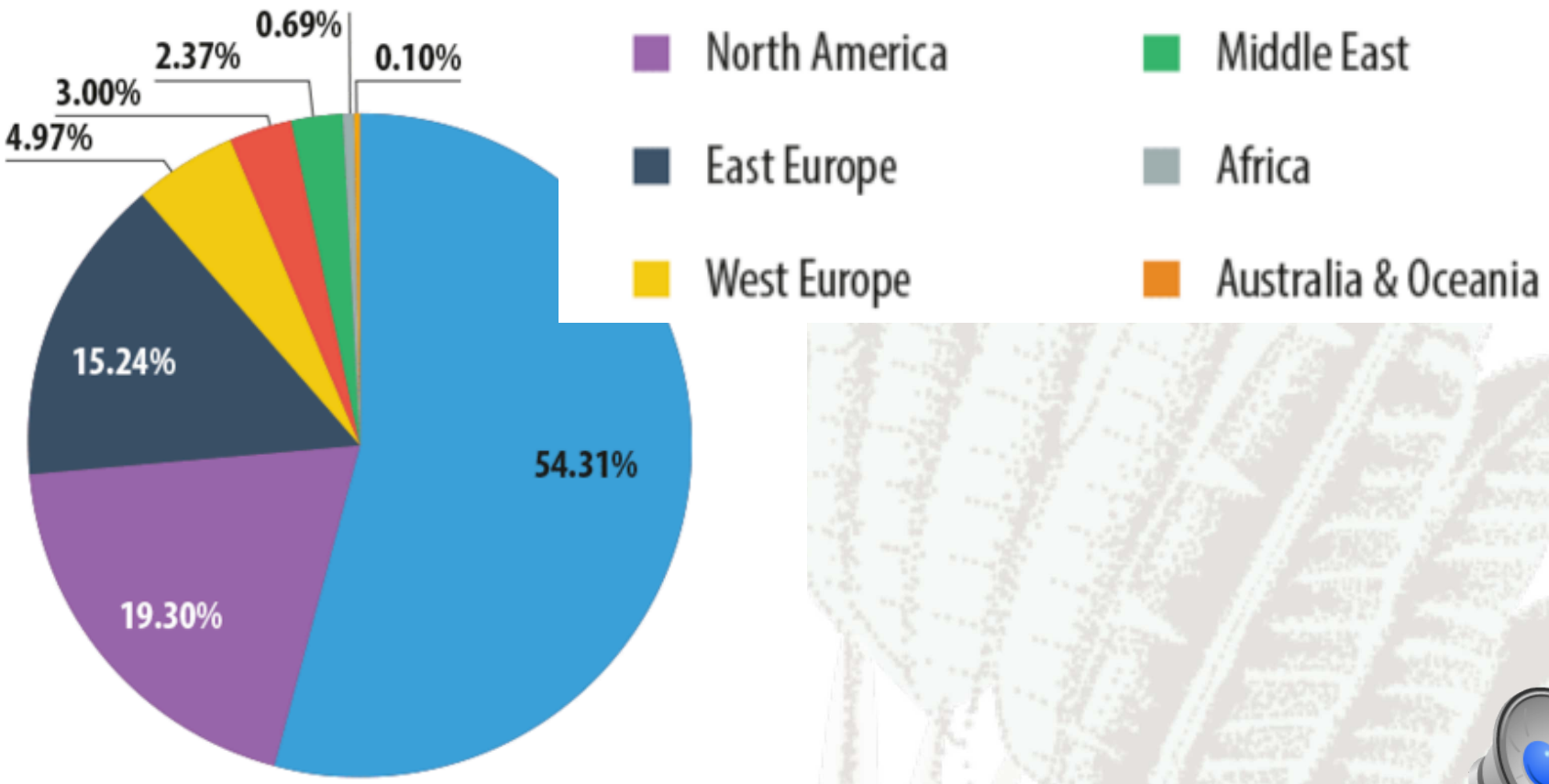
Global Spam Statistics

Statistic: Sources of Spam by Region



http://usa.kaspersky.com/internet-security-center/threats/spam-statistics-report-q1-20

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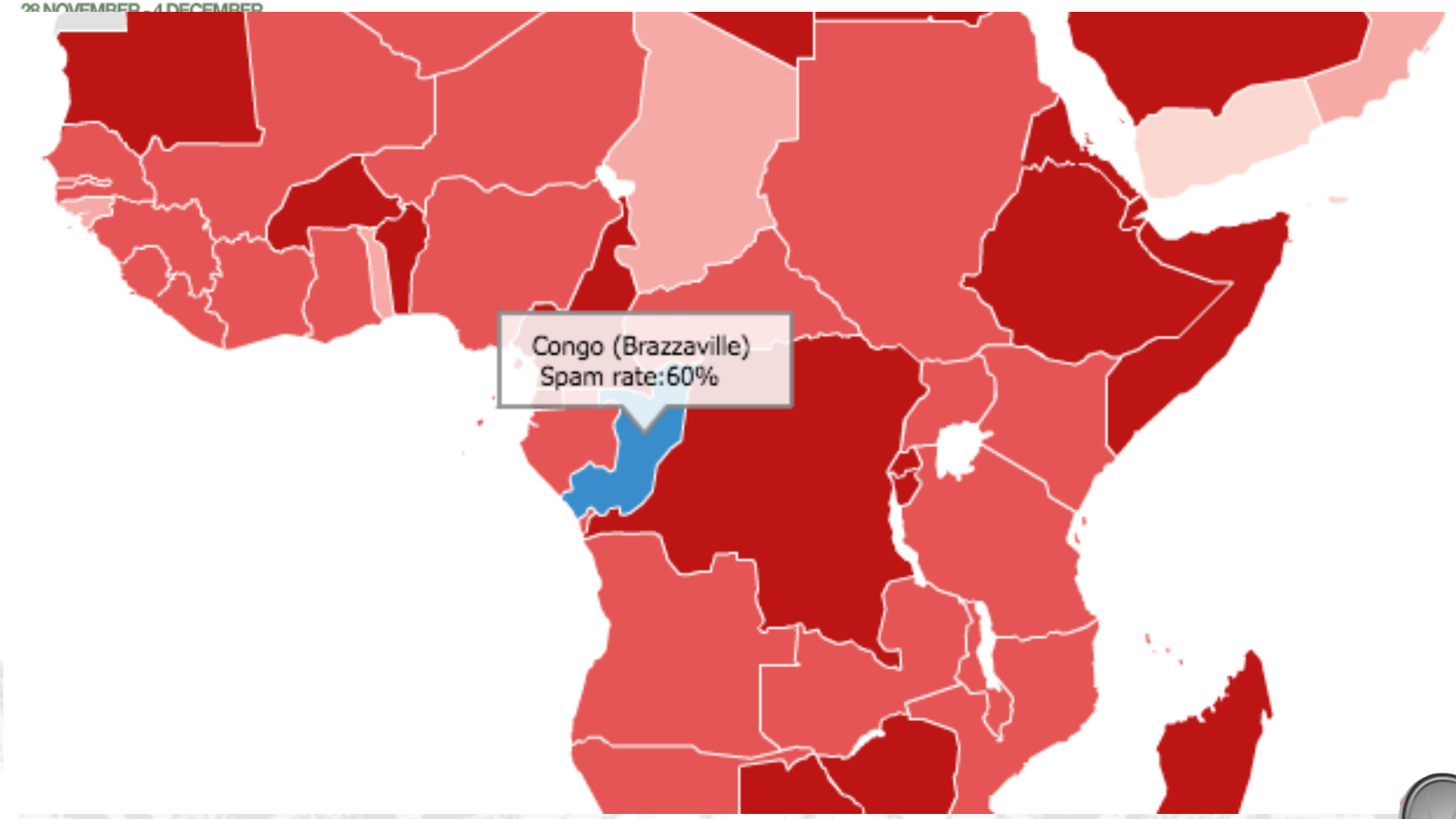
In the Republic of Congo



http://www.trendmicro.com/us/security-intelligence/current-threat-activity/global-spam-map/

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Some alarming figures

- 7 billion of mobile devices

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- 7 billion of mobile devices
- 3 billion of Internet users

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90%+ of spam

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Top 20 worst countries by Infected networks

Country	Rate
Laos	6.60%
Mauritania	5.40%
Yemen	4.50%
Iraq	4.10%
Macedonia	4%
Myanmar	3.30%
Vietnam	3.20%
Somalia	3%
Congo	3%
India	3%
Togo	3%
Guinea	2.90%
British Indian Ocean Territory	2.90%
Libya	2.90%
Cape Verde	2.80%
Nigeria	2.80%
Turks and Caicos Islands	2.70%
Serbia	2.60%
Iran	2.40%
Armenia	2.40%

http://www.abuseat.org/nas.html

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Top 20 worst countries
Spam Per Capita

Country	/capita
Monaco	1.24
Guam	0.846
Bermuda	0.755
Dominica	0.675
Djibouti	0.556
United States	0.446
Belize	0.376
Russian Federation	0.296
Armenia	0.276
Botswana	0.243
Canada	0.239
Mongolia	0.19
Montenegro	0.185
Suriname	0.183
Kyrgyzstan	0.173
Ukraine	0.166
Serbia	0.163
Bahamas	0.161
Romania	0.15

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Challenges

- Security threats
- Resources intensive
- Risk of being blacklisted

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SPAM SOURCES

Sources of spam

- Open relays and proxies
- Insecure networks and hosts
- Botnets and zombies
- Direct spammers
- Hijacked prefixes
  - Spamhaus: 3.5 % of blacklists subnets are from AFRINIC

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ROLE OF AN RIR

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Maintain a proper and up-to-date registry

- inetnum
- inet6num
- as-block
- aut-num
- as-set
- route
- route6
- route-set
- inet-rtr

- filter-set
- peering-set
- rtr-set
- domain
- mntner
- irt
- key-cert
- organisation
- role
- person

Registration of ASSIGNED PA

inetnum:	**197.157.255.0 - 197.157.255.255**
netname:	**CT-CORPORATE-BZV**
descr:	**Clients corporate Brazzaville**
country:	**CG**
admin-c:	**AT19-AFRINIC**
tech-c:	**AT19-AFRINIC**
status:	**ASSIGNED PA**
mnt-by:	**CongoTelecom-mnt**
changed:	**aymar.tsibayis@congotelecom.cg 20151201**
source:	**AFRINIC**
parent:	**197.157.252.0 - 197.157.255.255**

- Very important to keep information up-to-date
- Spam filters not to black list the parent space

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Registration of ASSIGNED PA

- In Republic of Congo:
  - –11 LIRs with a “Allocated PA” space

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Registration of ASSIGNED PA

- In Republic of Congo:
  - 11 LIR with a “Allocated PA” space
  - Only 3 LIRs have properly registered assignments, even if subnets are advertised

Abuse contact policy

- Earlier no standard way to add Abuse information
  - email attribute
  - notify attribute

- IRT object
  - Single object can be used referenced in inetnum(6) and aut-num objects

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Abuse contact policy

- Earlier no standard way to add Abuse information
  - email attribute
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- IRT object

POLICY IS OPTIONAL

Reverse DNS(SEC)

- AFRINIC managed IANA delegated zones:
  - {196, 197, 154, 41, 102, 105}.in-addr.arpa
  - {0.c.2, 2.4.1.0.0.2, 3.4.1.0.0.2}.ip6.arpa
  - we register /24 and /16 reverse DNS from members
- PTR records are used by mail servers
- Register reverse DNS
- Enforced security
  - Signed your reverse DNS and publish DS records

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Route Hijacking

- Route hijacking: mechanism used by spammers
- Use reserved or un-allocated space (BOGON)
- How to protect your routes:
  - Keep BGP filters up-to-date using IRR
  - Start using RPKI and ROA and activate BGP filters based on route validation

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RECOMMENDATIONS

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Conclusion

- Keeping records up-to-date
- Register customer ASSIGNMENTS
- Register Reverse DNS
- Use DNSSEC to protect zones
- Keep BGP filters up-to-date by registering your route objects
- Implement security mechanisms against route hijacking

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Thank you for your Attention

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