

Contact Object Usage Patterns

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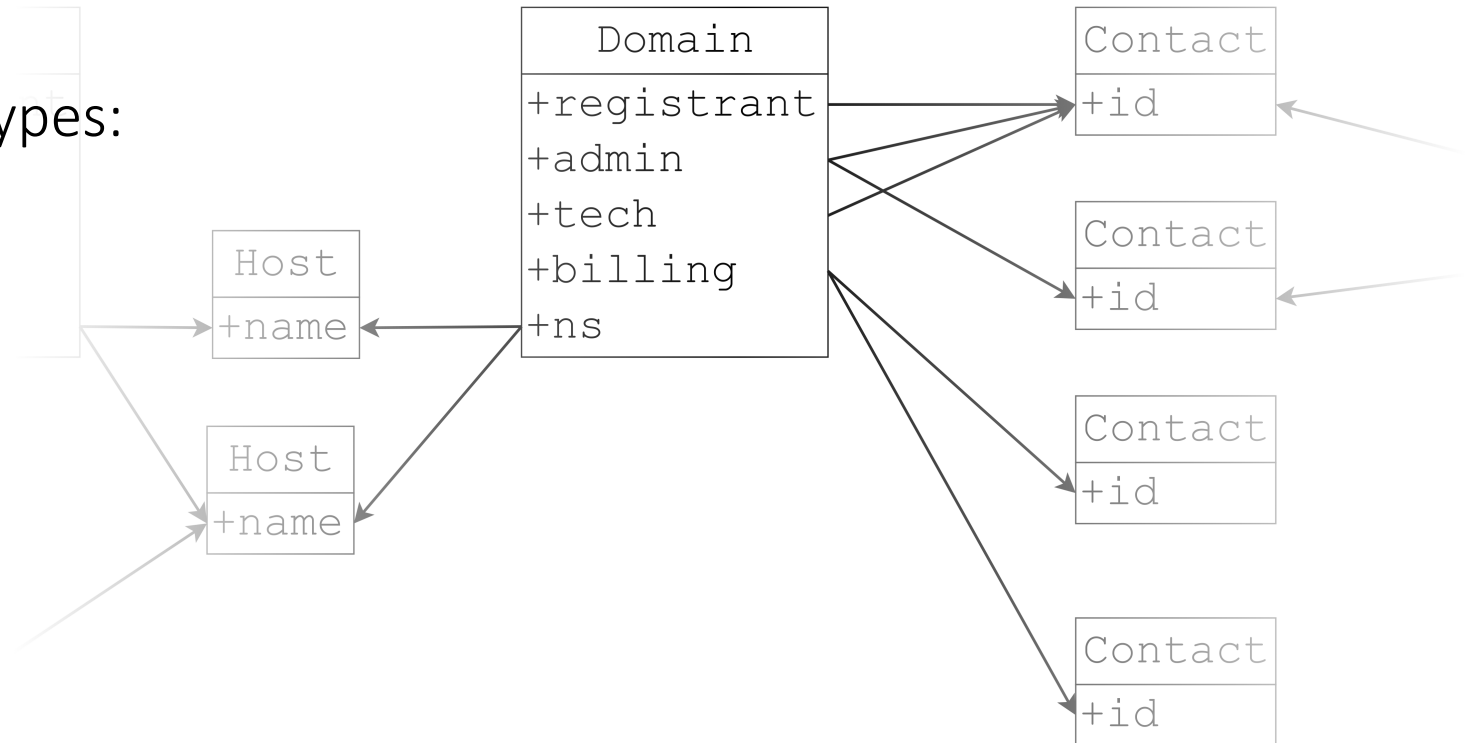
Introduction

- Standard Data Model for Domain Registries:

- RFC series 5731 – 5733

- Three "first-class" object types:

- Domains
- Hosts*
- Contacts



Questions:

1. Does the one-to-many relationship between domains and contacts reflect reality?
2. Do registrars treat contact objects with the same care and attention that they do with domains? **Are they pets or cattle?**
3. What, if any, are the implications (operational, compliance, protocol) of the answers to the above questions?

Assumptions

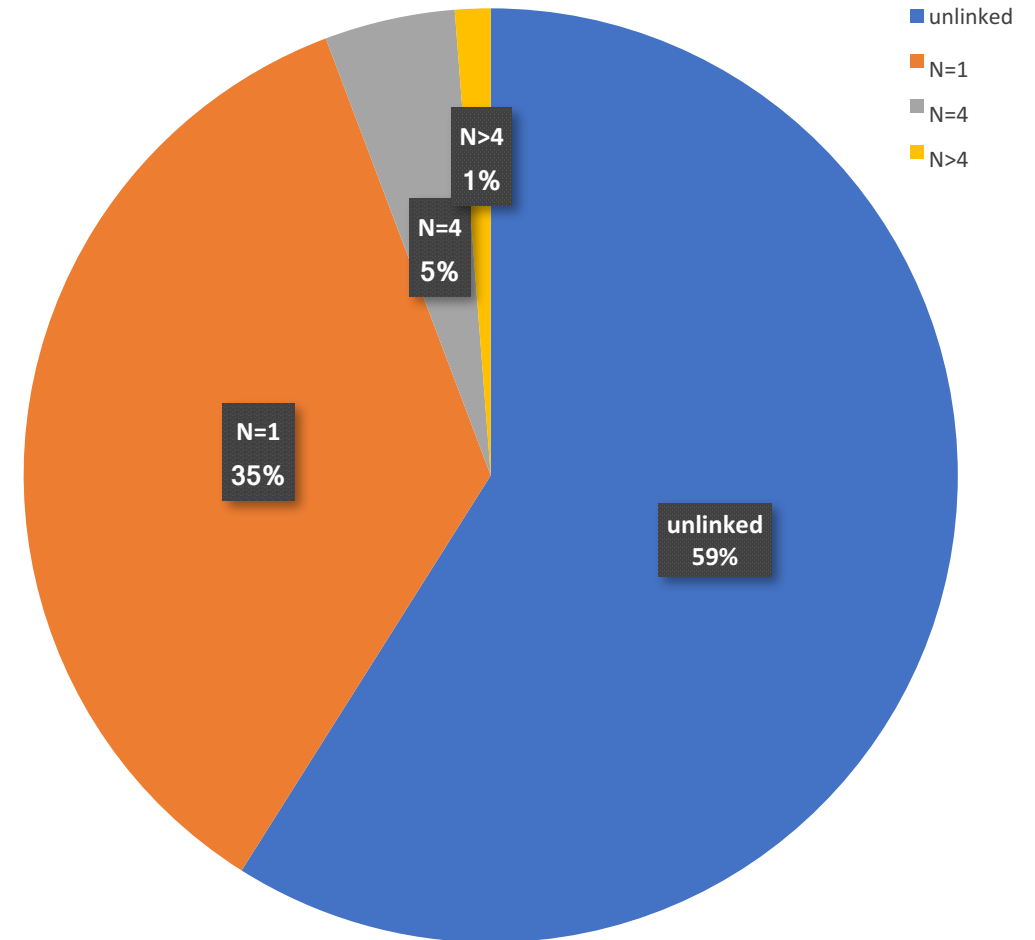
- Registrars interact with our registry in more-or-less the same way they do with other thick registries
 - Otherwise the conclusions I've come to are not applicable to anyone else!

Background

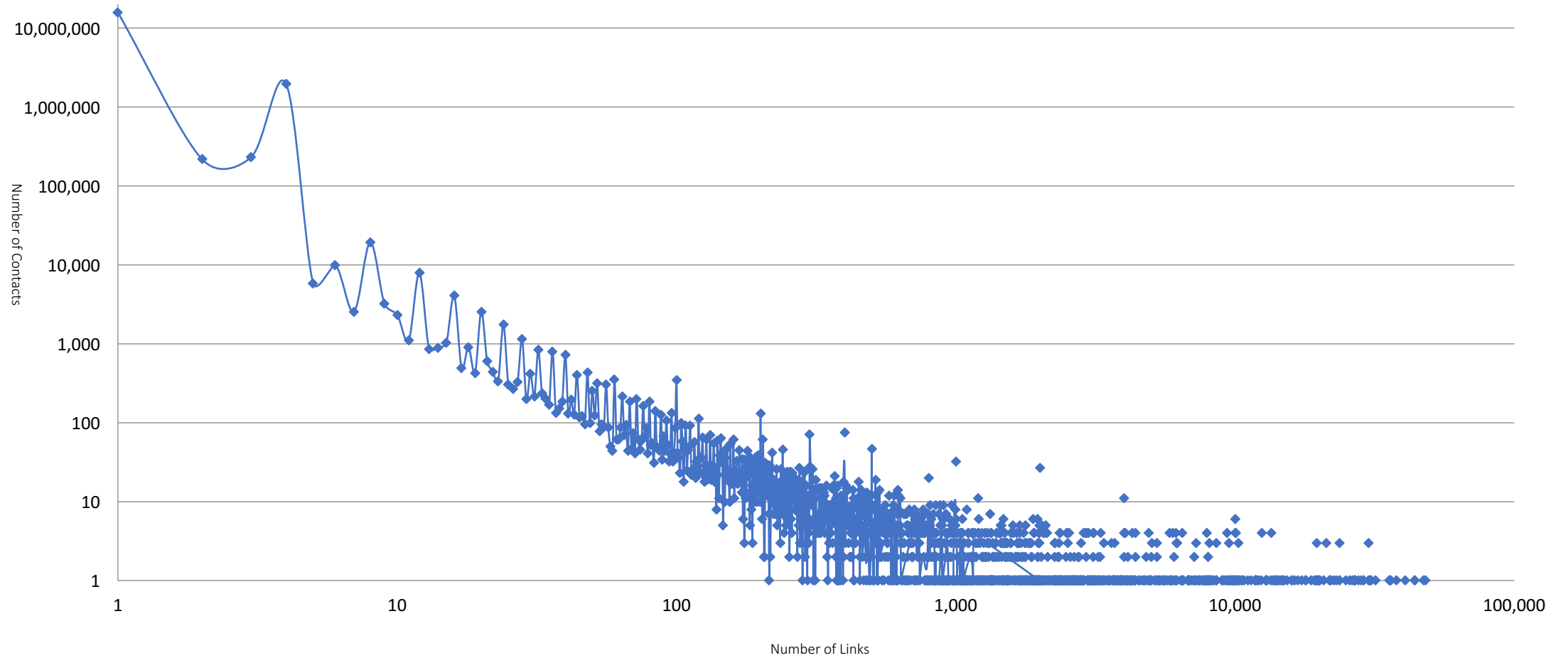
- Data taken from CentralNic registry system as of late April 2017
- ~44,480,000 contact objects present in the registry
- ~1,270 unique sponsoring clients
 - includes ~340 IANA accredited registrars
- The oldest contact still in the database was created on 1998-02-02
- Most TLDs on the platform are generic, general-purpose, and with no eligibility or nexus requirements
- Most object provisioning is done machine-to-machine rather than manually

1. Contact Reuse

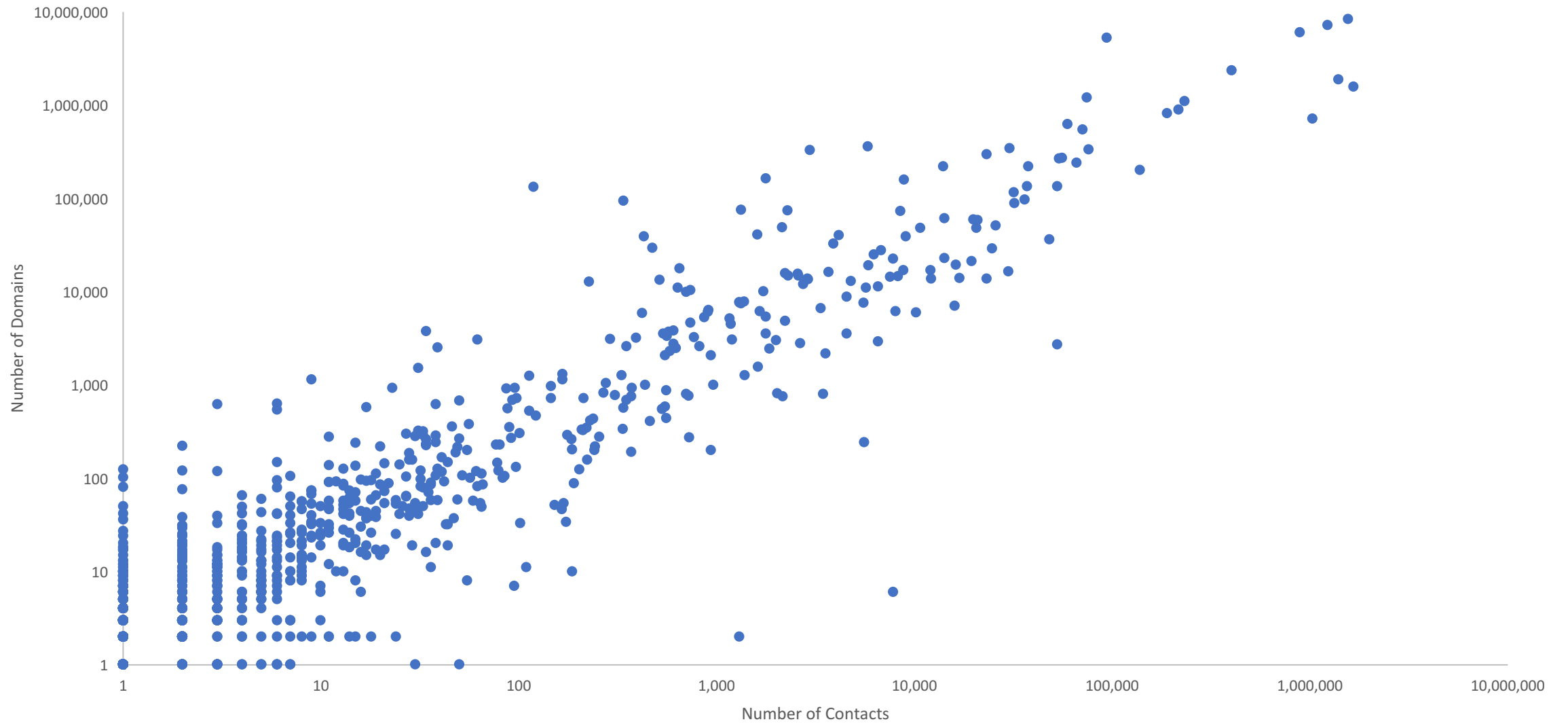
- ~18,257,000 (41%) contact objects had at least one association with a domain
- ~**86%** of all **linked** contact objects (35% of all contacts) have a single link to single a domain
- A further ~11% of all **linked** contacts (5% of **all** contacts) have exactly four links
- Only ~3% of **linked** contacts (1% of **all** contacts) are linked to more than one domain.



2. Contact Reuse



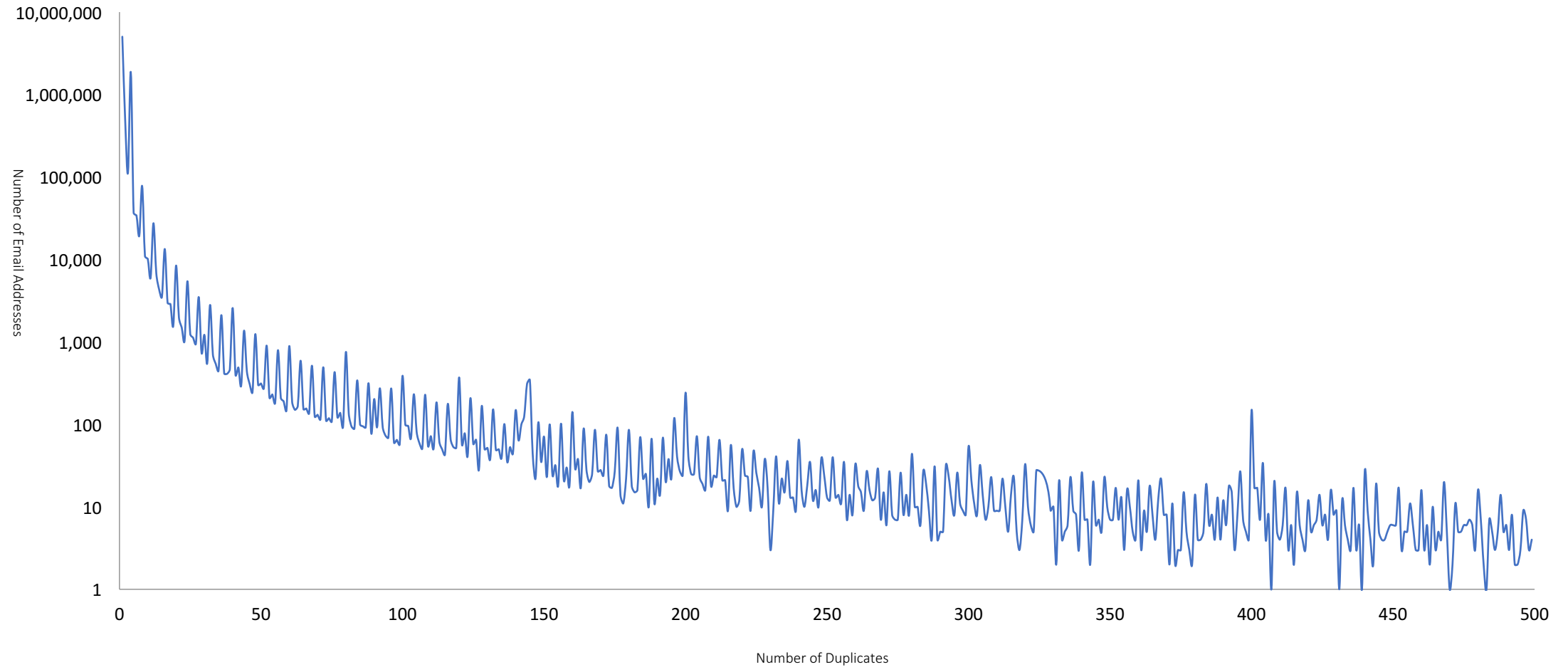
2. Contact Reuse



2. Contact Duplication

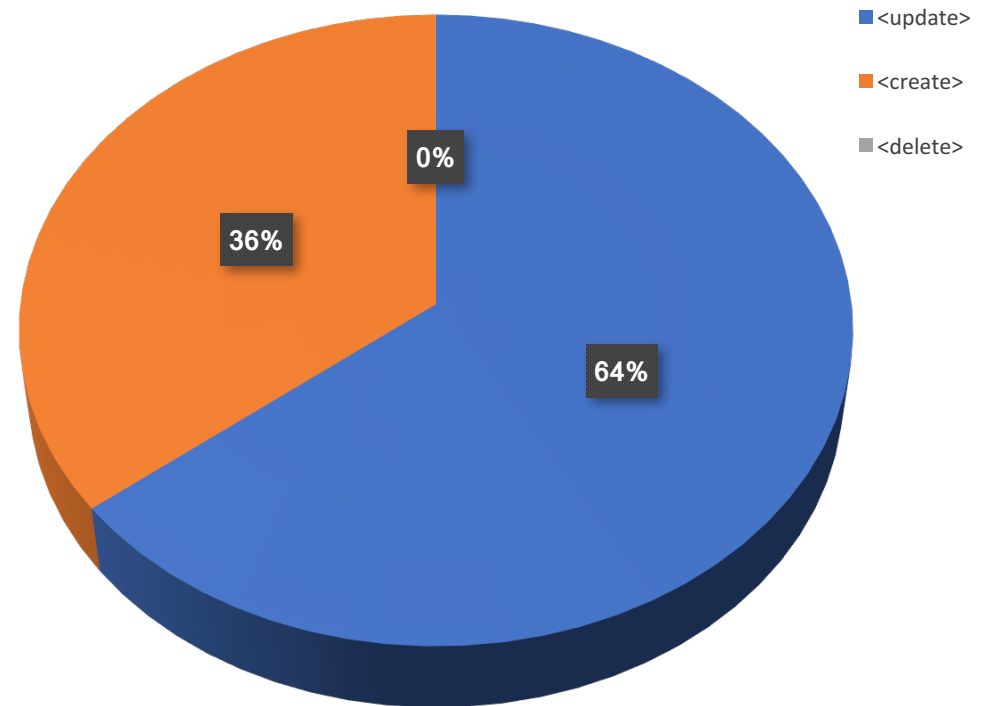
- ~7,832,000 unique email addresses
 - ~671,400 unique domains
- ~896,000 unique [cc,sp] pairs
- ~483,000 [cc,sp] pairs (~53%) have no duplicates
 - ~47% have at least one duplicate
 - a handful have millions of duplicates

2. Contact Duplication



3. Contact Management

- ~36,000 new contact objects created each day
- 64,000 contacts updated each day
- Only ~25 contacts deleted each day!



4. Contact Transfers

- Around 200,000 inter-registrar domain transfers carried out since 2005

Zero contact transfers carried out in the same period!

Conclusions

- Most registrars do not follow the "one-to-many" relationship between contacts and domains that is implicit in the RFC series.
- Registrars usually create a new contact object for each contact type for each domain
- Registrars rarely delete contacts and never transfer them

Contact objects are treated as cattle, not pets

Cattle vs pets

- A “pet” contact object has a meaningful ID. It is often manually created. The user takes time to maintain it and keep it up-to-date, and uses it whenever they can:

```
<domain:infData xmlns:domain="urn:iETF:params:xml:ns:domain-1.0">
  <domain:name>rolls-royce.bar</domain:name>
  <domain:roid>D4177625-CNIC</domain:roid>
  <domain:status s="clientTransferProhibited"/>
  <domain:registrant>Rolls-Royce-Admin</domain:registrant>
  <domain:contact type="tech">Rolls-Royce-Admin</domain:contact>
  <domain:contact type="admin">Rolls-Royce-Admin</domain:contact>
  <domain:contact type="billing">Rolls-Royce-Admin</domain:contact>
  <domain:clID>H74247</domain:clID>
  <domain:crID>H74247</domain:crID>
  <domain:crDate>2014-07-14T09:42:12.0Z</domain:crDate>
  <domain:upDate>2015-06-08T11:57:20.0Z</domain:upDate>
  <domain:exDate>2017-07-14T23:59:59.0Z</domain:exDate>
</domain:infData>
```

Cattle vs pets

- A “cattle” contact object has a randomly generated ID. It’s created by a machine. If its details change then it’s casually discarded.

```
<domain:infData xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
  <domain:name>bentley.fans</domain:name>
  <domain:roid>D9598469-CNIC</domain:roid>
  <domain:status s="clientTransferProhibited"/>
  <domain:status s="clientDeleteProhibited"/>
  <domain:registrant>DAB8154310-OWMO</domain:registrant>
  <domain:contact type="tech">DAD3039171-JWJF</domain:contact>
  <domain:contact type="admin">DAD3039171-JWJF</domain:contact>
  <domain:contact type="billing">DAD3039171-JWJF</domain:contact>
  <domain:clID>H340803</domain:clID>
  <domain:crID>H340803</domain:crID>
  <domain:crDate>2015-08-20T12:15:25.0Z</domain:crDate>
  <domain:upDate>2016-08-12T08:53:52.0Z</domain:upDate>
  <domain:exDate>2017-08-20T23:59:59.0Z</domain:exDate>
</domain:infData>
```

Implications: Operational

- Contact management is an externality for registrars that registries have to deal with
- Doing nothing results in a DB where number of contacts >>> number of domains
- Forcing registrars to do it for you is not going to make you any friends

Implications: Compliance

- EU Data Protection Directive: there is an obligation to delete data that's no longer needed
- If you aren't managing contacts then you have a problem
- General Data Protection Regulation (GDPR) makes this an expensive problem!