



Network
Information
Center
México

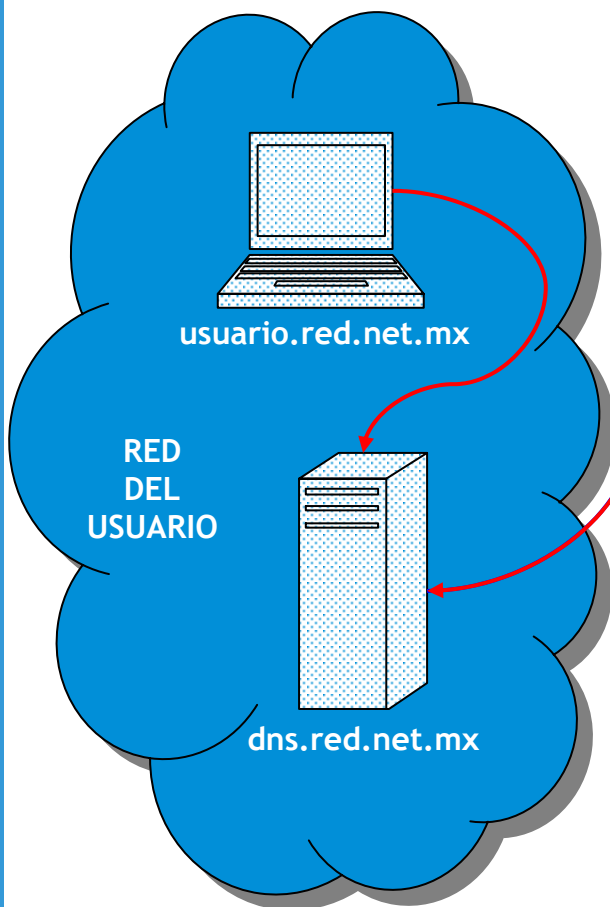
Shared Unicast for
Secondary DNS

A more robust DNS service
under .MX

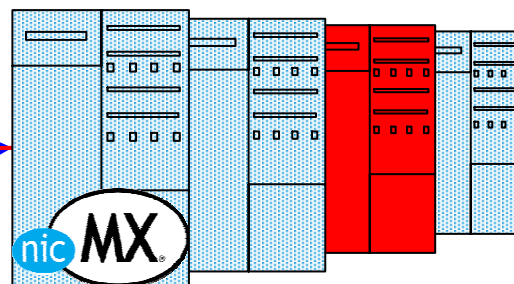
The problem



The DNS is not redundant by itself!



NS.NIC.MX and secondaries



1/N % the level of impact on the TLD for every DNS that stops answering queries.

25% in the case of .MX before Summer 2003.

More vulnerability to DDoS attacks



The solution



To implement shared unicast

- Phase 1:

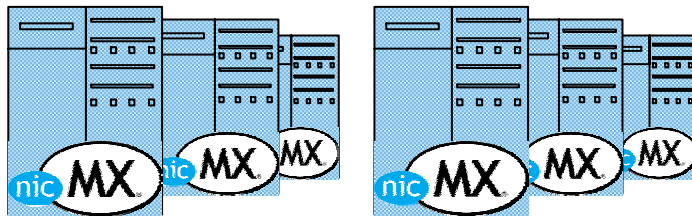
Mirror in primary
Shared unicast in
secondaries

- Phase 2:

Shared unicast in
primary

NS.NIC.MX

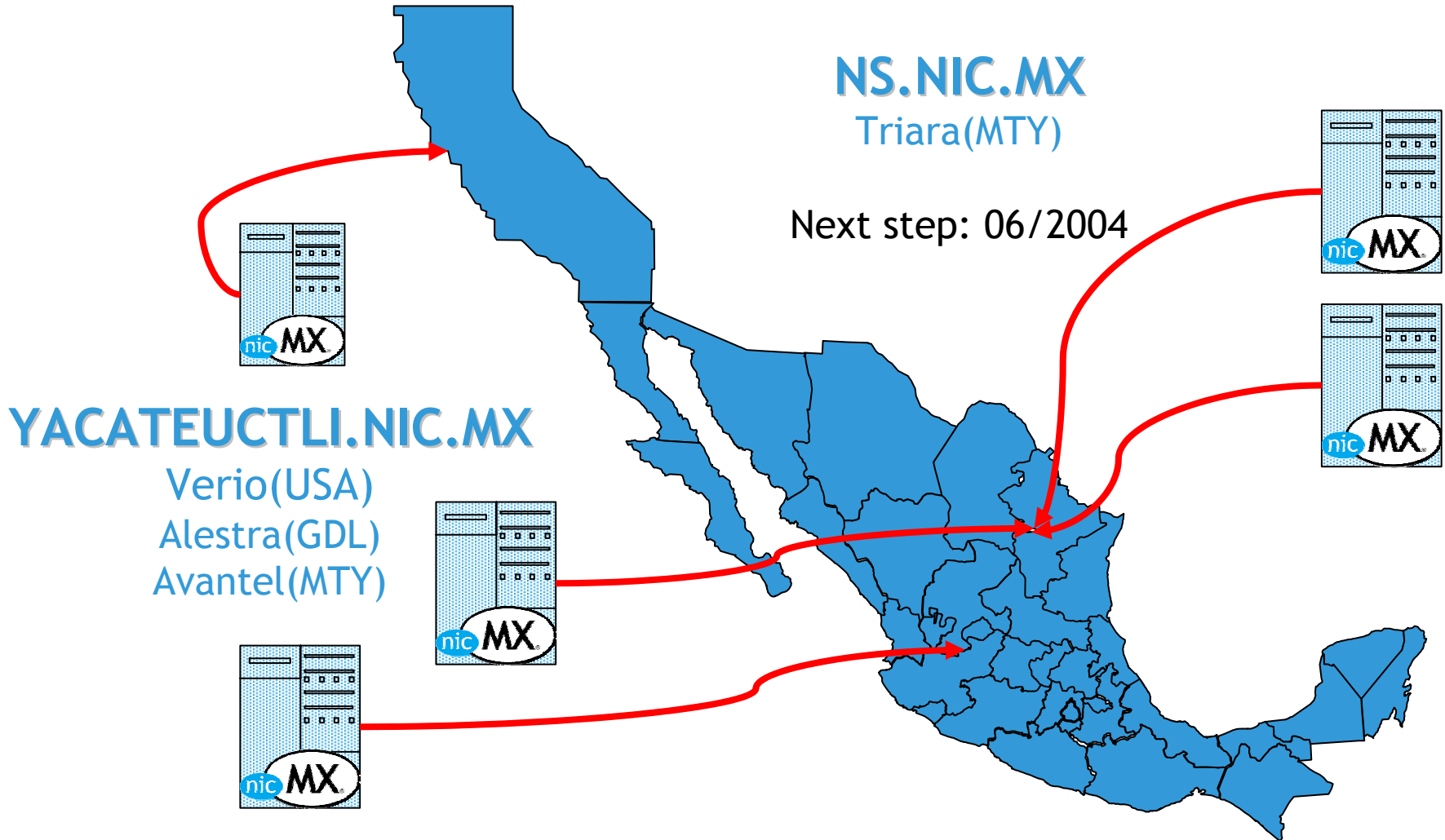
YACATEUCTLI.NIC.MX



Redundancy in 2 servers.



Domain Name resolution under .MX (current)





NIC-Mexico's Implementation

- After comply with RFC 3258 we included the following features to our implementation:
- DNS Zones are kept only in Memory File System (to reduce risk of stolen information when disk are uninstalled)
- Routing service running in the same server allowing automatic server disconnection from the Internet should a problem prevents it to respond queries.
- Statistics processing that allow us identify requesting networks that require more resources from our DNS system.



NIC-Mexico's Implementation

- Two different DNS **implementations** (BIND 8 and 9).
- 7x24 contract for all the servers.
- Firewall and security measures on all the servers.
- Full zone transfer and reloading lower than 15 secs.
- Time synchronization in all servers.
- Full control of our DNS system (hardware and software).
- Easy to include one more server to the pool of secondaries (there is no need to request IANA update).
- Topological load balancing.
- Dynamic Updates/Update Notification/Incremental Zone Transfer.

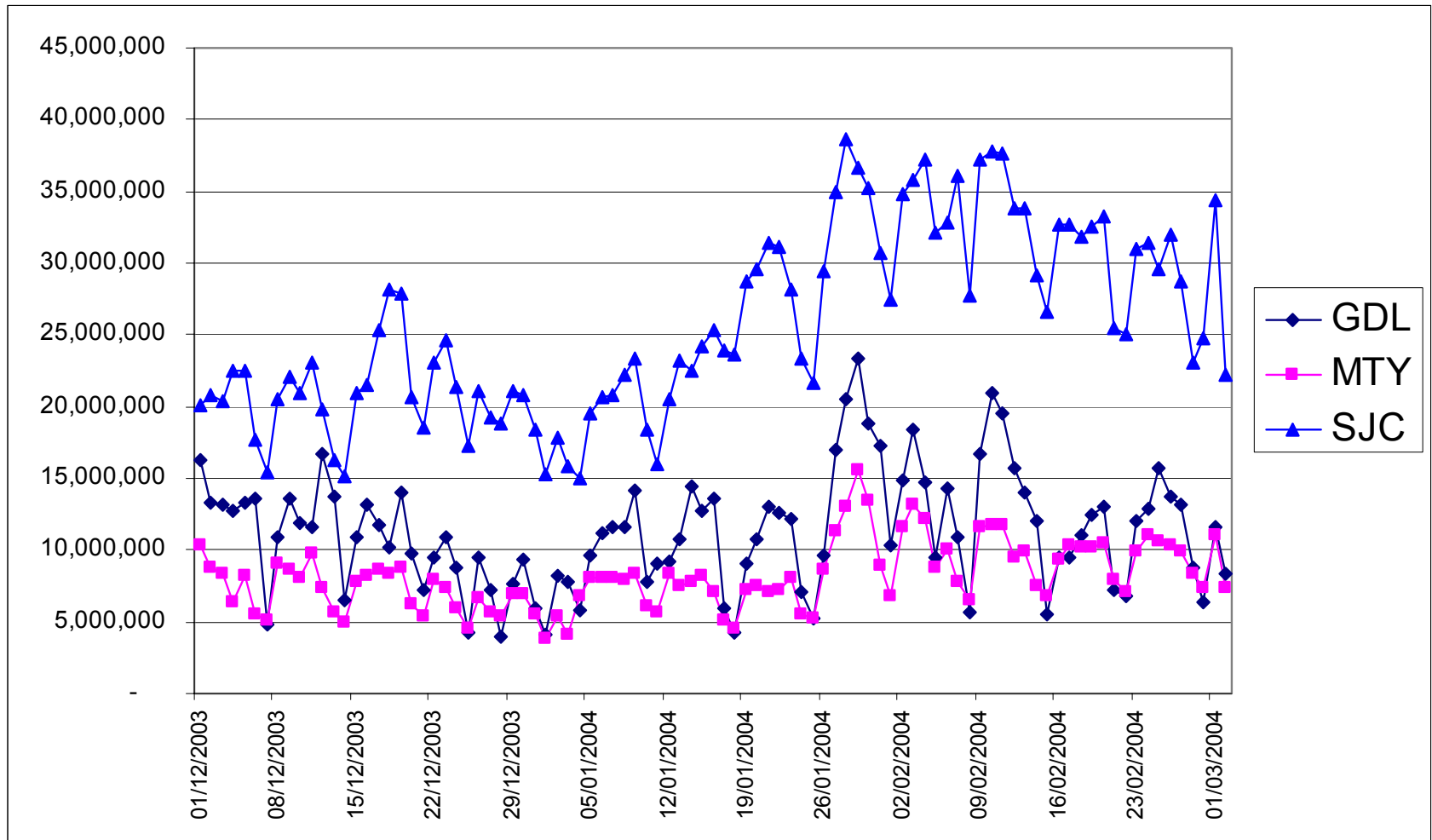


NIC-Mexico's Implementation

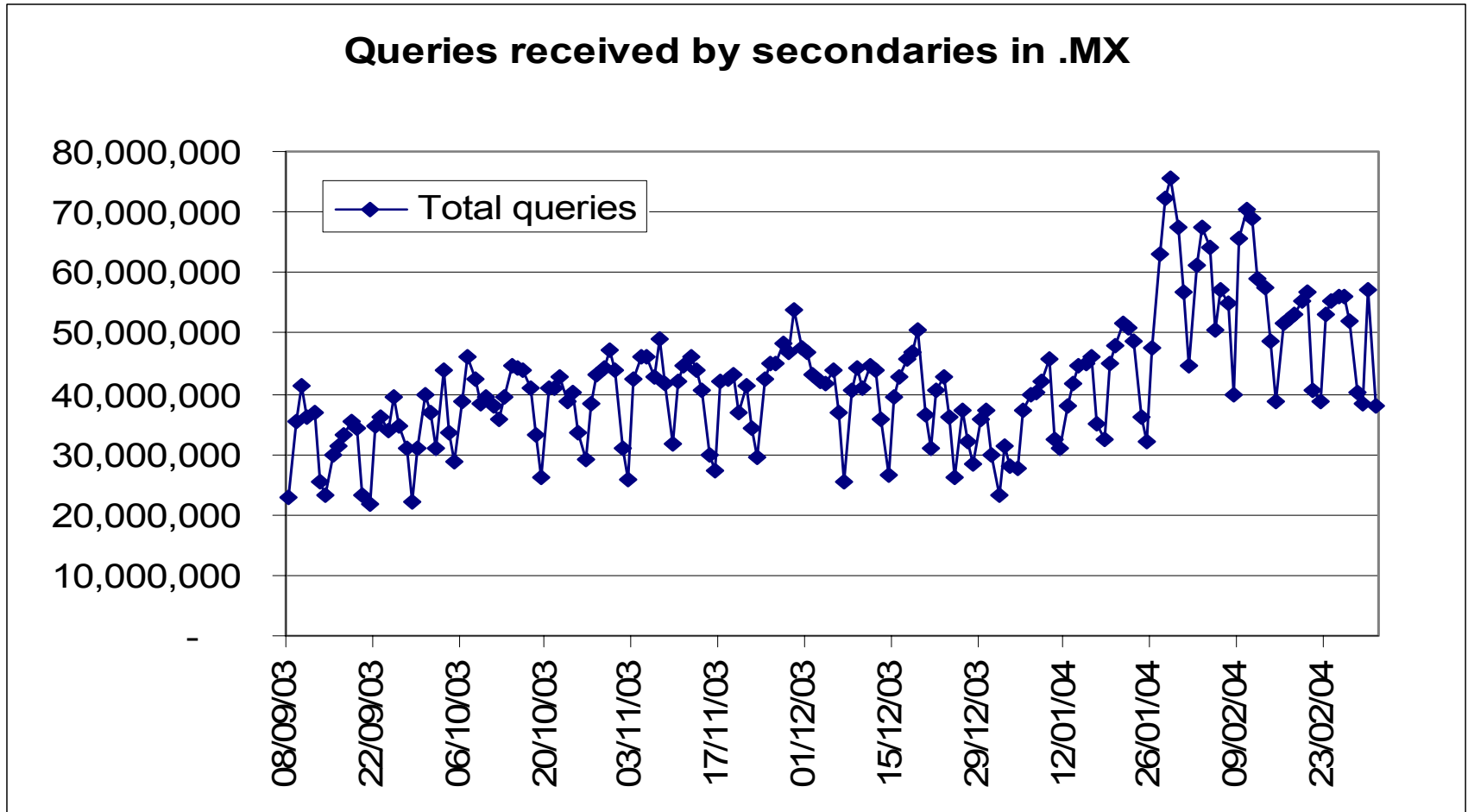
- We are able to provide a **better availability** of the critical DNS service.
- We became **one of the first** to develop and implement our own DNS secondaries Shared Unicast.



Growth of queries to secondaries

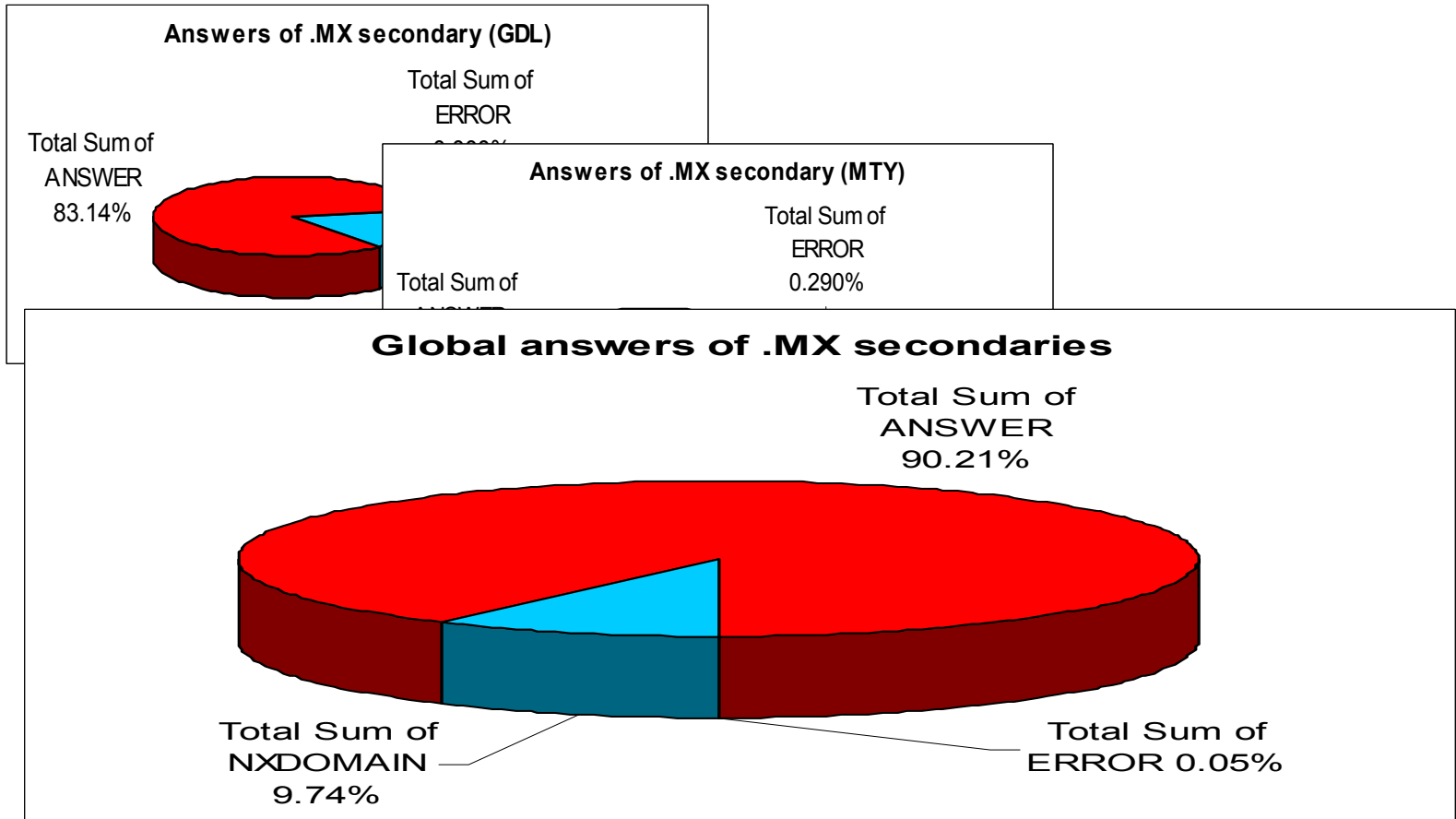


Growth of queries to secondaries





Type of answers





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