lactld anycast project

LACTLD
Latin American and Caribbean
ccTLDs Organization

ANYCAST definition

The practice of making a particular Service Address available in multiple, discrete, autonomous locations, such that datagrams sent are routed to one of several available locations.

ANYCAST node

An internally-connected collection of hosts and routers that together provide service for an Anycast Service Address.

BENEFITS

- Increased reliability
- Load balancing
- Improved performance
- Enhanced security
- Localized impact of DDoS attacks
- Increased availability

PROJECT

Collaborative project for LACTLD members

Build a dedicated Global Anycast Node to serve LACTLD members.

PROJECT

Shared management among some ops teams members, currently: NIC.br, NIC.cl and LACNIC.

Regional Project.

PROJECT

Global Anycast Node – a.lactld.org
200.0.68.10 and 2801:14:a000::10

LEVELS

Administrator
Participant
User

ADMINISTRATOR LEVEL

Administrator
    Setup (in coordination with participant) of a node
    Administration of nodes (updates, etc)
    Adding zones
    Monitoring

PARTICIPANT LEVEL

Participants

.Organizations which hosts a node (DNS server)

USER LEVEL

Users
.ccTLDs which use the service with its zone, having
.<ccTLD> NS a.lactld.org

TECHNICAL CHECKLIST PARTICIPANT NODE

- a hardware (minimal requirements) with an out-of-band management interface/virtual console.

    (eg. Dell iDRAC, HP iLO, VNC, etc).

- You need to "speak" BGP and coordinate upstream service

TECHNICAL CHECKLIST USER NODE

1. Sharing pgp-encripted TSIG key for secure transfer
2. Allow AXFR/IXFR from dhm.lactld.org in ccTLD master
3. Transfer tests
4. Resolution tests
5. Sync monitoring
6. Add NS a.lactld.org in ccTLD zone
7. Add NS a.lactld.org in root (IANA)

PARTICIPANTS MAP

Zones:

- lactld.org
- LACNIC reverses

CONTACT US

Email to: dns-request@lactld.org

ANYCAST LACTLD

The LACTLD Anycast cloud is a joint initiative of collaboration between ccTLDs in Latin America and the Caribbean which aims to promote the robustness and resilience of the Internet in the region with a mechanism that allows to reuse the same name of an NS in several geographical locations. The network is based upon best effort principles, it is a non-profit venture for LACTLD members and it does not seek to compete with existing commercial providers.

MORE INFO

Latest from the blog

Key definitions for the participation in the LACTLD Anycast cloud

How does it work ?
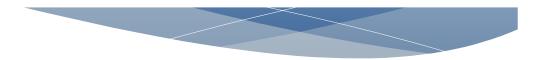
A separate architecture was designed in different modules:

1. End nodes These are the servers (or cluster of servers) hosted by each

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MUCHAS GRACIAS

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Backup slides

Increased reliability
anycast improves reliability of DNS through the placement of multiple geographically dispersed servers at the same IP address. The redundancy of these DNS servers makes the service more highly available and reliable.

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Load balancing
dynamic layer 3 routing of Anycast IP Addresses
will effectively load balance DNS queries
especially
over equal cost route paths.

Improved Performance
packets destined for Anycast DNS servers will be routed to the "nearest" server in the topology. This helps ensure that DNS clients are querying their local servers first before using remote servers based upon routing and topology.

Enhanced security
geographically dispersed DNS servers that operate using the same IP address makes the DNS service more resilient to DoS and/or DDoS attacks because its much tougher to launch attacks on hosts that use duplicated IP address schemes that reside in different parts of the network.

Localized impact of DDoS attacks successfully launched DoS and/or DDoS attacks will typically be localized and only affect a portion of the entire Anycast DNS group.

Increased availability
a DNS Anycast server that becomes unavailable due to failure or routine maintenance will have very little impact on name resolution service because the service routes are withdrawn from the routing tables. Routing will divert this traffic to new alternate best path servers in the Anycast group.