

Activity and Incident Report for the ICANN Managed Root Server

Prepared by ICANN's Security and Network Engineering Department

For the Reporting Period of 2020-2-01 - 2020-2-29

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1 Executive Summary

This monthly report provides operational and statistical information on the ICANN Managed Root Server (IMRS), known within the Domain Name System (DNS) as `L.ROOT-SERVERS.NET`.

IMRS is a collection of servers and associated hardware with global presence managed, controlled and supervised by ICANN that provide information about the Root Zone, which is the apex of a hierarchical distributed database for the Domain Name System (DNS).

More information on the Root Server System and its organizations can be found at <https://root-servers.org>. and about IMRS at <https://dns.icann.org/imrs>

A deeper understanding of the statistics in this document can be gained by accessing the IMRS Statistics dashboard at <https://stats.dns.icann.org>.

For this reporting period:

- There were no outstanding issues related to security or unplanned downtime.
- There were no observed anomalies in DNS Traffic to the IMRS

2 Performance Indicators

2.1 DNS Queries for this Period

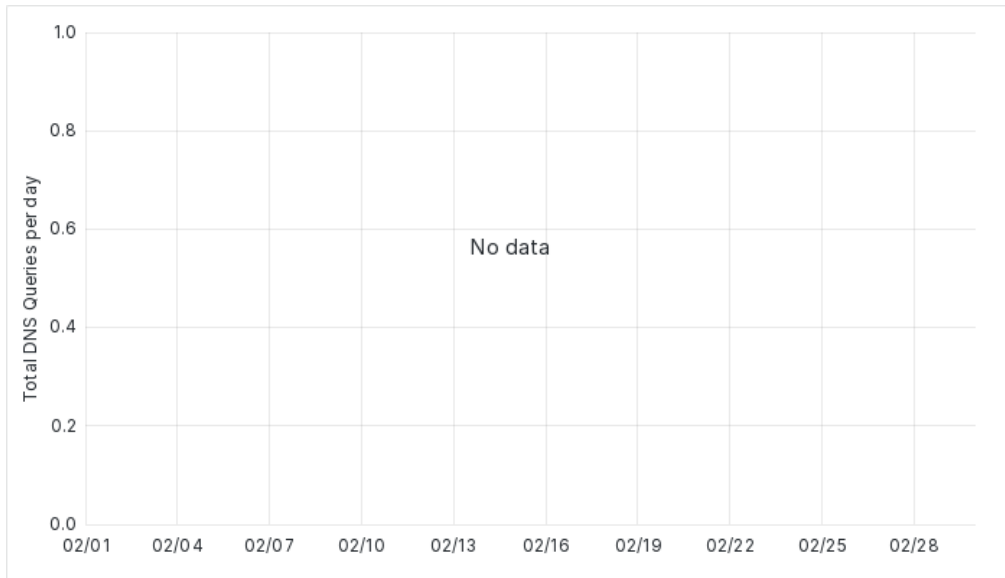


Figure 1: Number of daily DNS queries for this period

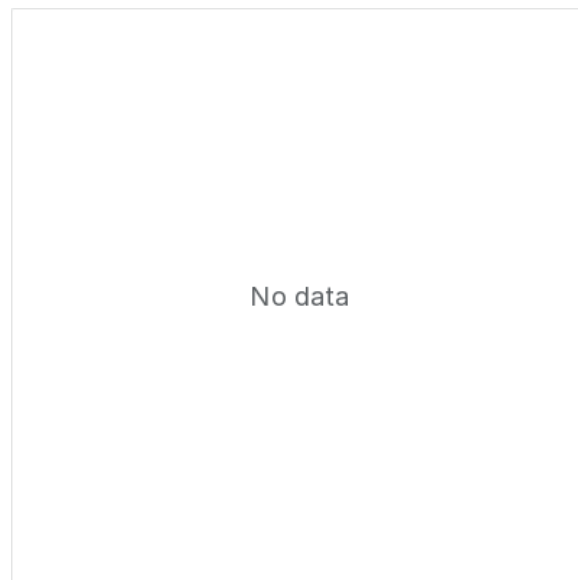


Figure 2: Total DNS queries distribution

2.2 DNS Query Distribution Trends

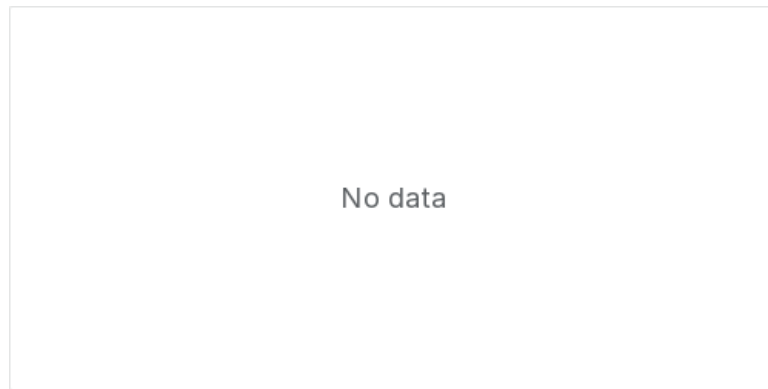


Figure 3: Query origins per ICANN Region

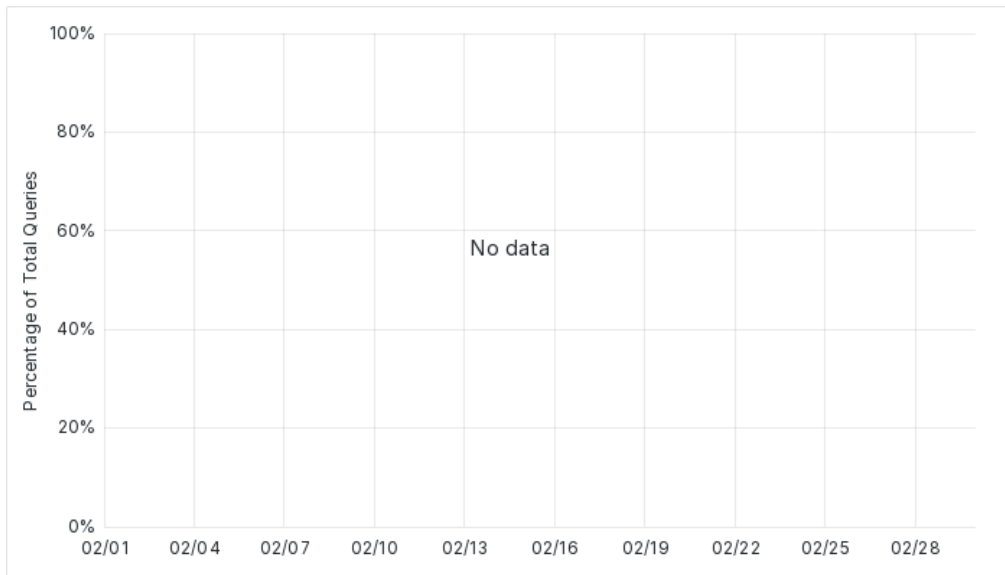


Figure 4: Query distribution percentage per ICANN region

3 Operational Indicators

3.1 Security Incidents related to IMRS

- During this period, no security incidents were reported, recorded nor published

For transparency, ICANN publishes a log of Information Security events at <https://www.icann.org/cybersecurityincidentlog>

3.2 Non-scheduled downtime events

- During this period, no irregular or unplanned downtime was observed

4 Size and location of the IMRS

4.1 Number of Instances

- 2 instance(s) were added in this period : Jeddah (Saudi Arabia) and Riyadh (Saudi Arabia)
- 1 instance(s) were retired in this period : Tampere (Finland)
- 167 instances are located in 83 countries at the end of this period

4.2 Number of IMRS Cluster Instances

A "Cluster" is an IMRS instance consisting of a set of servers and associated hardware providing the IMRS service at a single location which is designed to serve a larger DNS query load, community, or specific region.

An IMRS Cluster is completely managed, controlled and supervised by ICANN.

At the moment of writing this report, there are six (6) ICANN Cluster Instances located in:

- El Segundo, CA (US)
- Prague (CZ)
- Reston, VA (US)
- Singapore (SG)
- Nairobi (KE)
- Cairo (EG)

4.3 Number of countries that have at least one instance presence by ICANN region

- Africa (11)
- AsiaPacific (32)
- Europe (24)
- LatinAmericaCaribbean (13)
- NorthAmerica (3)

4.4 Location for IMRS Instances by city

| | | |
|--------------------------------------|------------------------------|--|
| Abidjan (Cote d'Ivoire) | Christchurch (New Zealand) | Islamabad-Rawalpindi (Pakistan) |
| Al Muharraq (Bahrain) | Cochabamba (Bolivia) | Jakarta (Indonesia) |
| Amman (Jordan) | Colombo (Sri Lanka) | Johannesburg (South Africa) |
| Anchorage (United States) | Copenhagen (Denmark) | Kalamazoo-Battle Creek (United States) |
| Ankara (Turkey) | Curitiba (Brazil) | Kharkiv (Ukraine) |
| Apia (Samoa) | Dakar (Senegal) | Kiev (Ukraine) |
| Arlington County (United States) | Dammam (Saudi Arabia) | Kolonia (Federated States of Micronesia) |
| Asuncion (Paraguay) | Dar es Salaam (Tanzania) | Kuwait City (Kuwait) |
| Atlanta (United States) | Denver (United States) | Lahore (Pakistan) |
| Baku (Azerbaijan) | Des Moines (United States) | Latina (Italy) |
| Bangkok (Thailand) | Dortmund (Germany) | Lawrence (United States) |
| Beijing (People's Republic of China) | Dubai (United Arab Emirates) | Leeds-Bradford (United Kingdom) |
| Beirut (Lebanon) | Dundee (United Kingdom) | London (United Kingdom) |
| Belem (Brazil) | Dusseldorf (Germany) | Londrina (Brazil) |
| Belgrade (Serbia) | El Prat de Llobregat (Spain) | Los Angeles (United States) |
| Belo Horizonte (Brazil) | Ezeiza (Argentina) | Lyon (France) |
| Blantyre (Malawi) | Florence (Italy) | Madrid (Spain) |
| Bogota (Colombia) | Florianopolis (Brazil) | Mahe (Seychelles) |
| Bouake (Cote d'Ivoire) | Fortaleza (Brazil) | Majuro (Marshall Islands) |
| Brasilia (Brazil) | Geneva (Switzerland) | Malmö (Sweden) |
| Bratislava (Slovakia) | Haarlemmermeer (Netherlands) | Mandalay (Myanmar) |
| Brisbane (Australia) | Hagatna (Guam) | Mangere (New Zealand) |
| Brussels (Belgium) | Hamburg (Germany) | Marseille (France) |
| Cacador (Brazil) | Helsinki-Vantaa (Finland) | Mascot (Australia) |
| Callao (Peru) | Heraklion (Greece) | Maseru (Lesotho) |
| Campinas (Brazil) | Honiara (Solomon Islands) | Melbourne (Australia) |
| Cape Town (South Africa) | Honolulu (United States) | |
| Carire (Brazil) | Incheon (South Korea) | |
| Chicago (United States) | | |

| | | |
|---------------------------------|------------------------------------|--|
| Metro Manila (Philippines) | Porto (Portugal) | Semey (Kazakhstan) |
| Minsk (Belarus) | Porto Alegre (Brazil) | Shanghai (People's Republic of China) |
| Mississauga (Canada) | Prague (Czech Republic) | Sofia (Bulgaria) |
| Monterrey (Mexico) | Punta Caucedo (Dominican Republic) | St Denis (Reunion) |
| Montevideo (Uruguay) | Quito (Ecuador) | Stockholm (Sweden) |
| Moscow (Russian Federation) | Rabat (Morocco) | Suva-Nausori (Fiji) |
| Mumbai (India) | Ramallah (Palestine) | Tampere (Finland) |
| Muscat (Oman) | Reno (United States) | Tokyo (Japan) |
| Nadi (Fiji) | Reston (United States) | Toronto (Canada) |
| Natal (Brazil) | Rio de Janeiro (Brazil) | Tunis-Carthage (Tunisia) |
| New Taipei (TW) | Rochester (United Kingdom) | Uberlandia (Brazil) |
| Noumea (New Caledonia) | Rostov-on-Don (Russian Federation) | Vancouver (Canada) |
| Odessa (Ukraine) | Salvador (Brazil) | Wilmington (United States) |
| Otopeni (Romania) | San Jose (Costa Rica) | Winnipeg (Canada) |
| Ouagadougou (Burkina Faso) | San Jose (United States) | Wuhan (People's Republic of China) |
| Papeete (French Polynesia) | San Miguel de Tucuman (Argentina) | Xining (People's Republic of China) |
| Paris (France) | San Salvador (El Salvador) | Yangon (Myanmar) |
| Paris-Orly (France) | Sana'a (Yemen) | Yekaterinburg (Russian Federation) |
| Perth (Australia) | Santiago (Chile) | Yerevan (Armenia) |
| Plaisance (Mauritius) | Sao Jose dos Campos (Brazil) | Yogyakarta (Indonesia) |
| Port Moresby (Papua New Guinea) | Sao Paulo (Brazil) | Zhengzhou (People's Republic of China) |
| Portland (United States) | SeaTac (United States) | |

Detailed information on IMRS locations can be found at <https://www.dns.icann.org/imrs/locations/>