

Activity and Incident Report for the ICANN Managed Root Server

Prepared by ICANN's Security and Network Engineering Department

For the Reporting Period of 2020-1-01 - 2020-1-31

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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

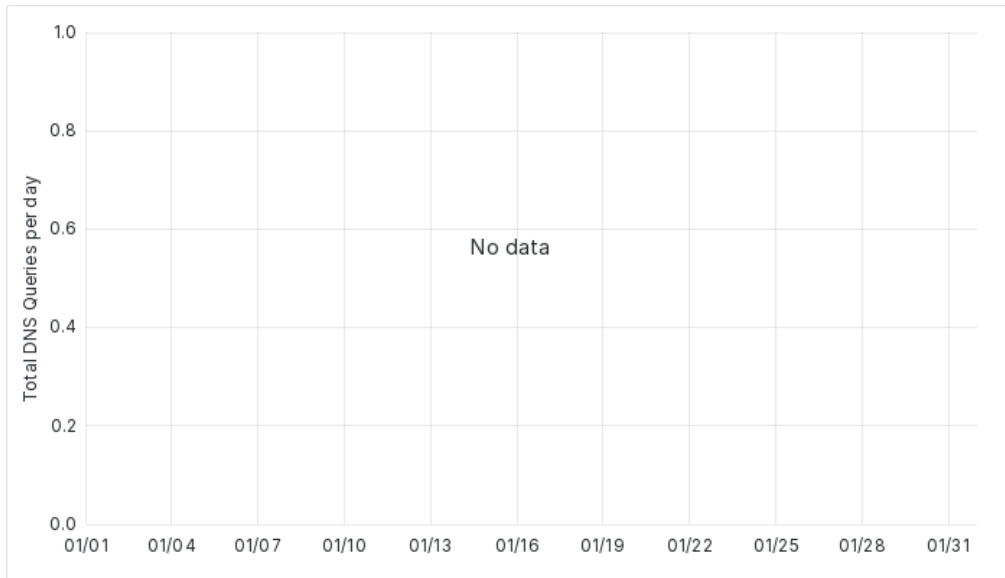


Figure 1: Number of daily DNS queries for this period

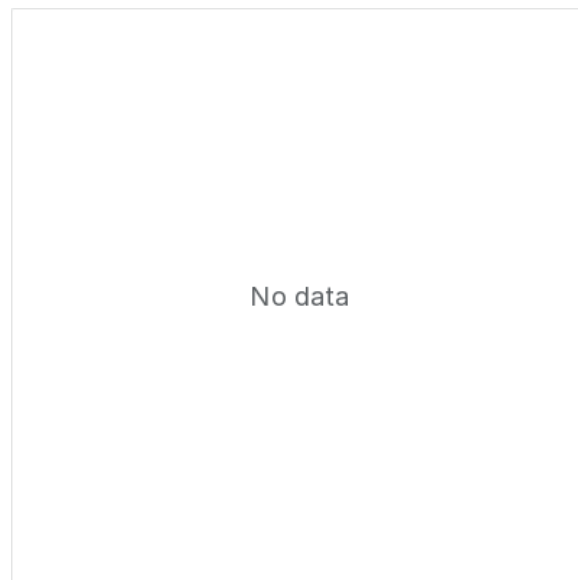


Figure 2: Total DNS queries distribution

2.2 DNS Query Distribution Trends



Figure 3: Query origins per ICANN Region

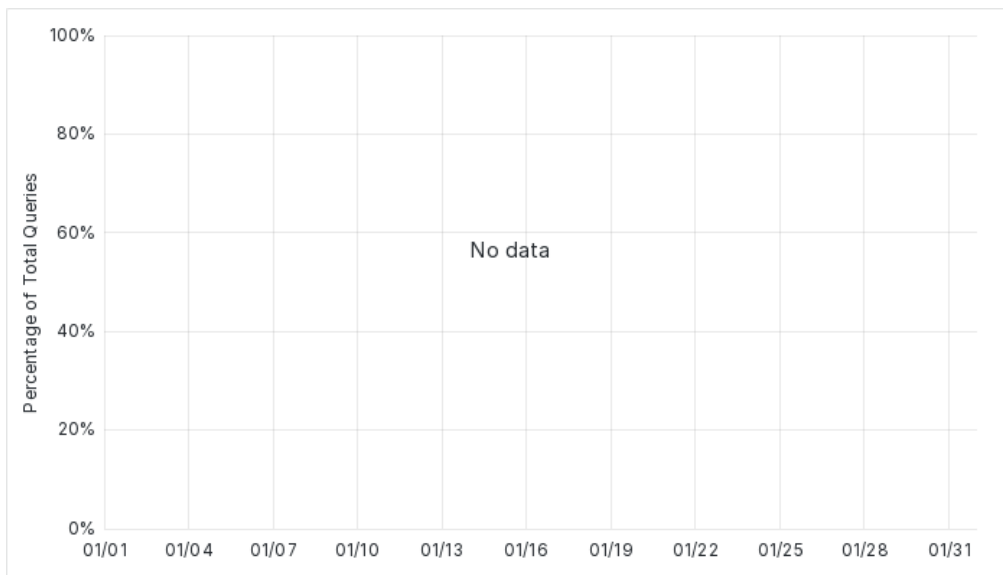


Figure 4: Query distribution percentage per ICANN region

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

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

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

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