

What is IANA?

◆ Full Form:

Internet Assigned Numbers Authority

What is IANA?

IANA is a global organization that **manages and distributes critical internet resources** like:

1. IP addresses (IPv4 & IPv6 blocks)
2. DNS root zone (e.g., .com, .org, etc.)
3. Protocol numbers and ports (e.g., HTTP = port 80)

Role:

IANA does not assign IPs directly to individuals or companies. It allocates large blocks of IPs to the **RIRs (Regional Internet Registries)**, which then manage and distribute them further.

What is RIR?

◆ Full Form:

Regional Internet Registry

What is an RIR?

RIRs are **regional organizations** responsible for **managing IP address allocation and autonomous system numbers (ASN)** in specific areas of the world.

They get IP address blocks from IANA and assign them to **ISPs, governments, and organizations** in their regions.

List of 5 RIRs:

RIR Name	Region Covered	Headquarters
ARIN	North America	USA
RIPE NCC	Europe, Middle East, Central Asia	Netherlands
APNIC	Asia Pacific	Australia
LACNIC	Latin America, Caribbean	Uruguay

 **Flow of IP Address Allocation**

IANA (Global)



RIR (Regional)



ISP / LIR (Local Internet Registry)



End Users / Companies / Servers

Example:

- IANA gives 43.0.0.0/8 block to APNIC
- APNIC gives a smaller block to Airtel (India)
- Airtel assigns IP 43.1.2.3 to your **home router**

 **Why Are They Important?**

IANA

Manages global IP blocks

RIR

Distributes regionally

Maintains global DNS root

Helps assign ASNs & IPs

Ensures fairness across globe

Supports local policies

 **Who Oversees IANA?**

- IANA is operated by **ICANN** (Internet Corporation for Assigned Names and Numbers).
- ICANN ensures **no country or company controls the internet alone** — it stays decentralized.

 **Real-World Analogy:**

Imagine IANA as a central water authority.

- It gives large water supplies to **regional plants (RIRs)**.
- Then the **RIRs** distribute it to **cities, then homes and industries**.