STPI hosts Four L root server Instances improving Internet resilience of the country

New Delhi, May 18, 2022: Software Technology Parks of India (STPI) is a premier science & technology organization under Ministry of Electronics and Information Technology (MeitY). STPI has been the pioneer as Data Communication Service Provider in India since 1993 and the first organisation to provide point-to-multipoint Microwave Radio network for Internet services in India. As category-A Internet Service Provider (ISP), STPI provides high speed data communication services to numerous organizations.

Advanced Internet Research Operations in India (AIORI) is funded by MeitY, and the program is assigned to STPI for its proven track record of implementing large and complex nation-wide programs. Root name servers are the servers at the root of the Domain Name System (DNS) hierarchy. The root servers are the entry points to the Domain Name System (DNS), the distributed database which Internet applications use to look up the numerical IP addresses associated with text-based domain names. Worldwide there are 13 named root servers (A to M) operated by 12 organizations, having 13 root server IP addresses, which can be seen from any single location at any given time. There are around 1,348 root server instances around the world. Out of 198 "L-Root" instances servers hosted globally, 6 of them are currently hosted in India, out of which 4 "L-Root" instances are hosted by STPI under AIORI program.

"In an era of ever-growing Internet bandwidth consumption, new applications and services are reinventing the expectations from technology for which stable and fast internet is at the core. STPI's hosting of four L root instances at 4 different locations in India namely Mohali, Mumbai, Bangalore & Guwahati as part of AIORI program is a contribution to the cause envisioned in the Digital India Initiative. The AIORI program delivery is a commendable example of collaboration between MeitY, STPI, India Internet Foundation & Internet Society Kolkata Chapter who joined hands as the implementing agency. The experience of IIFON's running a root instance in Kolkata and Domain knowledge of community created by ISOC Kolkata chapter, was extremely helpful in removing the bottlenecks early in the program." said Shri Arvind Kumar, Director General STPI.

The program has developed and deployed 5 anycast servers to enable next layer of resiliency in handling of the DNS resolution traffic from these installed servers. Currently, these 4 L root instances are handling on average of 10K of DNS resolution traffic load (DNS Queries) per second originated from India and now approximately serving 10% of global DNS resolution queries of 198 L root instance servers deployed worldwide. "The technical complexity of AIORI program in terms of creating DNS anycast network and then hosting L root instances for name resolution and benchmarking in India, has created an indigenous capability. The program and its research focus to measure various internet protocol parameters including DNS latency, DNS routing detours, DNSSEC readiness, National/International Traffic Detours etc. through pan India deployment of anchors, is of national importance and has a global impact" said Shri Subodh Sachan, Director STPI & Chief Investigator AIORI Program.

AIORI program is being managed from STPI Kolkata office and the entire AIORI infrastructure is hosted at STPI Kolkata. The AIORI platform, powered by open-source programs, provides end-to-end "Platform-as-a-Service" capabilities for Internet Measurement. "Most of the countries or regions have leveraged Internet measurement platforms to improve user experience. Enabling a DNS anycast framework, Internet Measurement hub and DNS benchmarking infrastructure with hosting of 4 L root instances has ensured that India can adequately demand a place on the high table of Internet Governance globally," said Shri Anand Raje, CTO AIORI Program &Co Founder – India Internet Foundation.

For more information refer Annexure and visit https://aiori.in

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