SC26 Network Research Exhibition: Demonstration Publishable Abstract

perfSONAR in the Cook County Community

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Abstract

perfSONAR is the de facto network measurement toolkit for research & education networks. Building on SC25-NRE-113 (perfSONAR for Community Access Broadband Initiatives), this NRE extends those methods to additional network operators across Cook County (SC26's host region), with the goal of bridging the digital divide by connecting community-built perfSONAR nodes into the SC26 show floor.

Beyond the technical demonstration, this effort will engage and train Chicagoland participants in practical R&E networking skills through hands-on server-building workshops, preparing them for entry into registered apprenticeships or related cyberinfrastructure career pathways.

Goals

1. Build perfSONAR x86 servers and Raspberry Pi hosts at multiple locations throughout Cook County, Illinois.
2. Utilize networks in Cook County such as Quilt NFP's Community Access Broadband Initiative (CABI), Metropolitan Research & Education Network (MREN), Cook County Fiber Network (CCFN) and Illinois Century Network (ICN) to connect these perfSONAR hosts into the SC26 show floor
3. Work with SCinet Research Hotel staff to host a community-built perfSONAR node, maximizing traffic between SC26 show floor and these community-built perfSONAR nodes throughout Cook County
4. Setup a perfSONAR central management server to build a network testing mesh throughout multiple community centers and schools (stretch goal)

Chicagoland has a deep pool of technical talent and a strong ecosystem of regional organizations, working to create new pathways into the cyberinfrastructure workforce. Building perfSONAR measurement infrastructure near the Quilt CABI on-net locations it will create practical, hands-on opportunities for newcomers to get real exposure to R&E networking. Having these perfSONAR nodes and SCinet connectivity in place for SC26 will pair naturally with the CommUNITY@SC26 program, giving regional participants real infrastructure to learn on.

Impacts

SCinet has long connected the SC show floor to national and international R&E networks. With SC26 in Chicago, this NRE extends that reach into local networks throughout Cook County while training the next generation of network engineers. A key deliverable is making the process repeatable: documenting how local network operators can connect into SCinet, so future SC host cities can bring their own regional networks to the show floor and grow their local technical workforce.

Resources

This NRE will utilize new connectivity between CCFN and ICN alongside existing connectivity between MREN and ESnet to reach SC26.

Involved Parties

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