

SC18 INDIS Workshop

Architecture, Xnet, NRE



SC18
Dallas, TX | **hpc**
inspires.

SC star **inet**

1. Experimental Network - XNET
2. Network Research Exhibition - NRE
3. SCinet Architecture

XNET



SCinet Experimental Networks

Each year SCinet evolves and creates a new network to allow Researchers to perform new experiments and undertake new technical challenges.

SCinet has a team of volunteer subject matter experts (SMEs) that evaluate new technologies and new appliances to achieve this evolution. Some experiments are conclusive immediately, others require additional time to achieve the desired results.

For SC18, the Experimental Network (XNET) team was involved in 4 such experiments inside SCinet and on the Exhibit floor.



The XNET Experiments

- Optical Cross Connect
- Scalable 8x100G DTN
- FAUCET
- 400GE ring

"Analysis of CPU Pinning and Storage Configuration in 100 Gbps Network Data Transfer"

-Se-Young Yu & others.

"BigDataExpress: Toward Schedulable, Predictable, and High-performance Data Transfer"

-WenjiWu & other

"Flowzilla: A methodology for Detecting Data Transfer Anomalies in Research Networks."

-AnnaGiannakou & others

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- FAUCET scales to terabits doing IPv4/IPv6 L2/L3 switching and routing
 - FAUCET can control switches from multiple vendors, including P4 vendors who provide a P4-to-OF bridge, and interoperates with non-SDN networks
 - FAUCET provides automated integration tests, allowing many bugs to be caught early (sometimes even by the switch vendor) before shipping new releases

NRE

Architecture

