



SC15 Technical Program Workshop

INDIS 2015:

Innovating the Network for Data Intensive Science

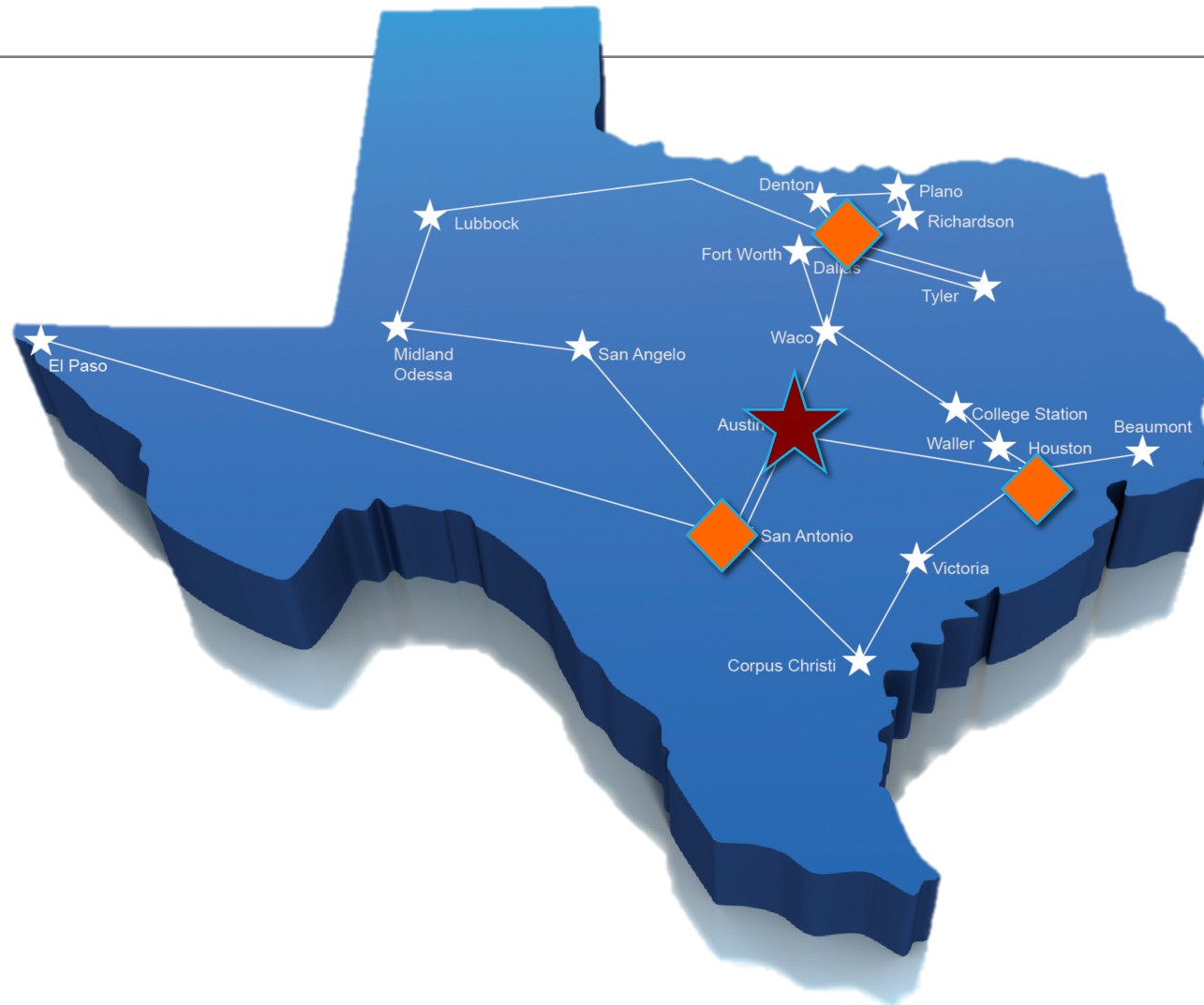
Davey Wheeler

NCSA / University of Illinois

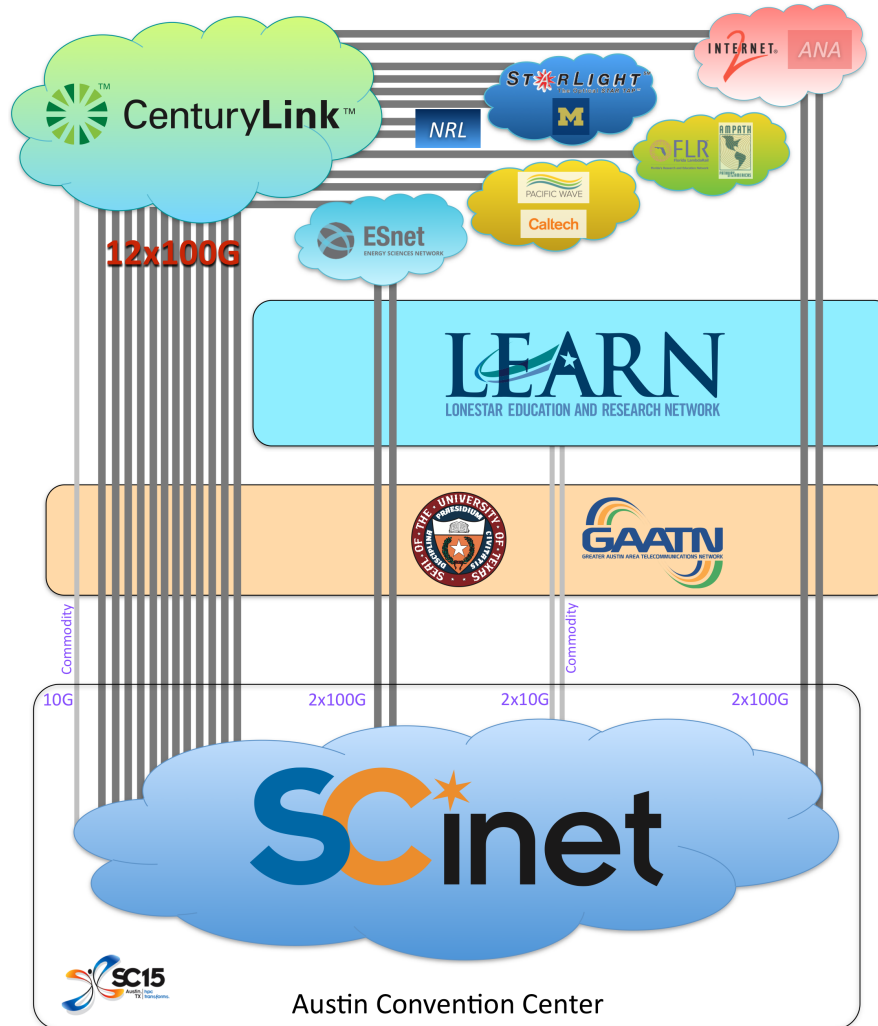
November 16, 2015

Austin, TX

-
- **Total bandwidth delivered: 1.63 Tbps**
 - **89 mi/143 km of fiber deployed on exhibit floor**
 - **Over \$22 million in loaned equipment**
 - **Over 130 international volunteers from over 15 countries**
 - **337 SCinet Wireless Access Points Configured**
 - **7 Distributed NOCs (DNOC) on exhibit floor**
 - **39 managed and 73 unmanaged switches**



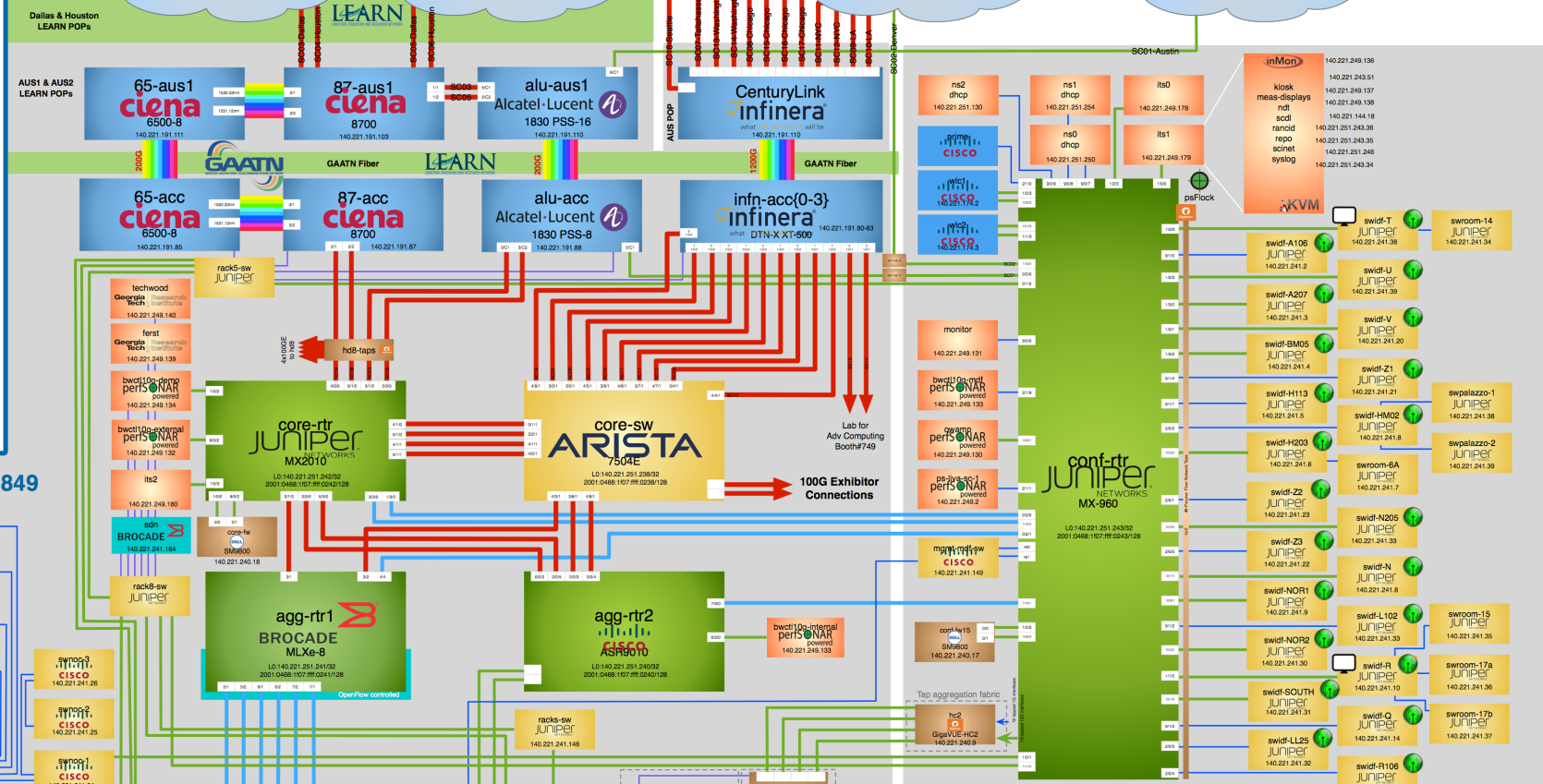
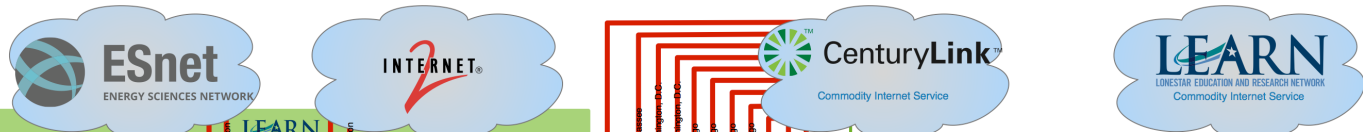
WAN Diagram



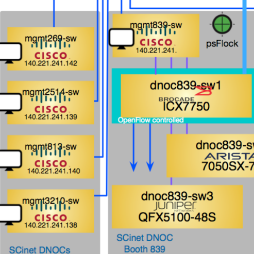


Network Architecture
V4.2
Linda Winkler
Nov. 15-20, 2015

- 1000-TX
- 1 Gigabit Ethernet
- 10 Gigabit Ethernet
- 40 Gigabit Ethernet
- 100 Gigabit Ethernet
- Dense Wave Division Multiplexing
- Wi-Fi Access Point
- Digital Signs

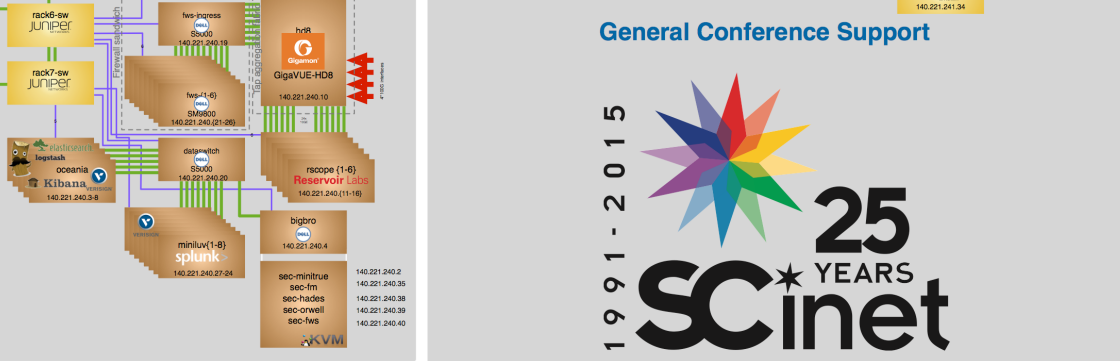


SCinet NOC Booth 849



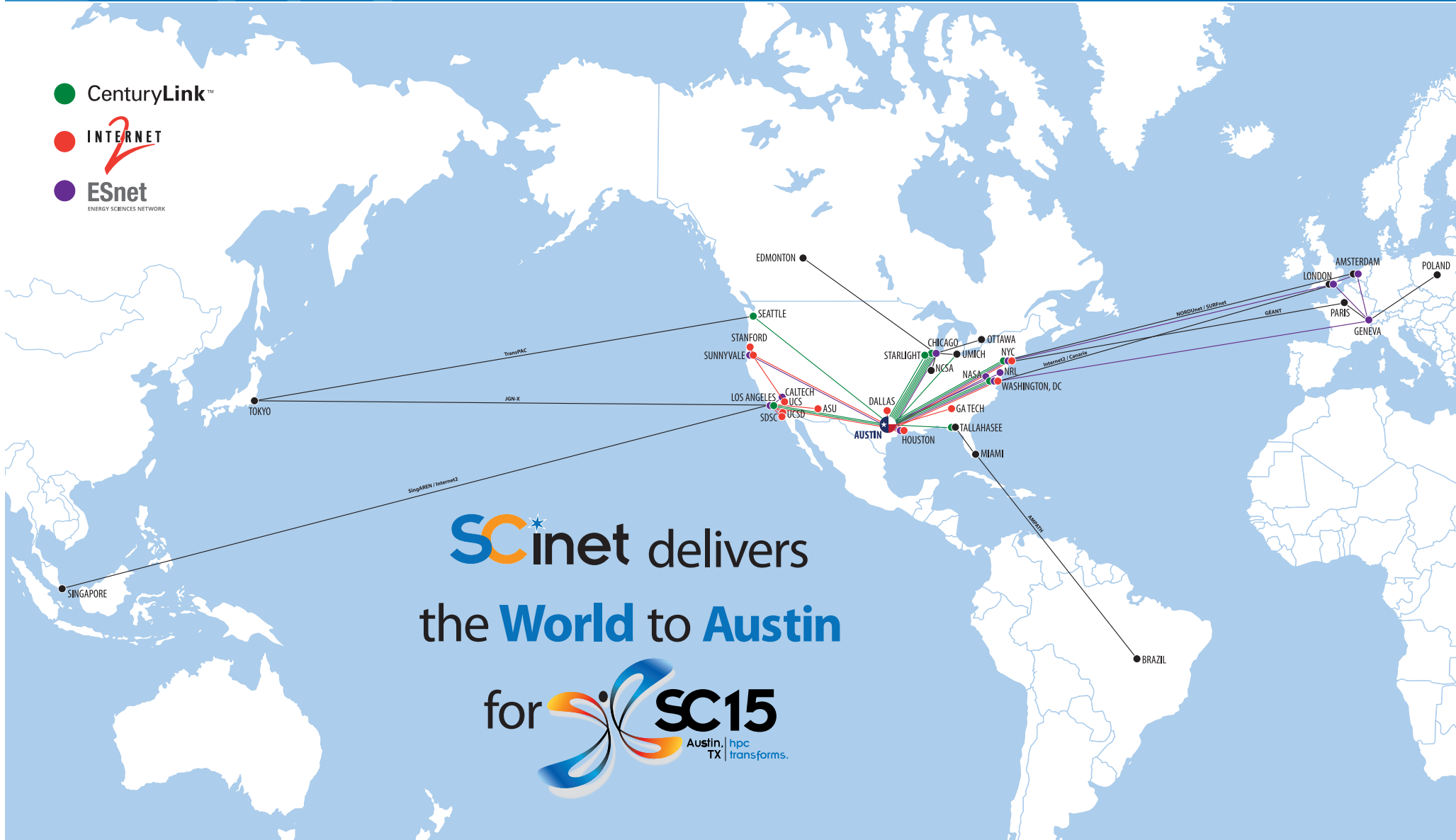
1G Exhibitor Connections
1G Exhibitor Connections
1G Exhibitor Connections
1G Exhibitor Connections

General Conference Support



DNOC	10-Gigabit Ethernet	100-Gigabit Ethernet	40-Gigabit Ethernet	Booth to Booth	Booth to SCinet	Gigabit Ethernet	Total
849	0	2	0	8	0	0	10
839	3	4	0	3	2	13	25
269	4	2	0	8	0	13	27
813	1	3	0	4	0	18	26
839	8	9	0	15	2	44	78
1625	1	0	0	0	0	9	10
2514	1	2	0	3	0	11	17
1625	2	2	0	3	0	20	27
1649	4	0	0	2	0	10	16
3210	4	0	0	0	0	12	16
1649	8	0	0	2	0	22	32
Unassigned	0	1	0	0	0	0	1
Total	18	14	0	28	2	86	148

- CenturyLink™
- INTERNET
- ESnet
ENERGY SCIENCES NETWORK



SCinet delivers
the **World** to **Austin**

for  **SC15**
Austin, TX | hpc transforms.



What Good is SCinet?



Unrivaled International Networking Laboratory

- Leading experts from government, industry and academia
- Diverse networking equipment
- Innovative philosophy of advancing networking

SC as a premier HPC, networking, and storage conference

- Rich technical program
- Extensive exhibits component
- Vendor, service provider, and customer participation



SCinet



Innovating for 25 years

- Amazing transformations in networking with advances every year
- Pursuing richer capabilities and more functionality in networking
- SCinet 25.0

Long History of Software Defined Networking

- Database driven network design going back a decade
- Auto routing infrastructure
- SDN advances and implementation this year



SC15 Tech Program INDIS Workshop Purpose



-
- Continued Exploration at this crucial time in networking development
 - Provide a platform to herald the importance of network research
 - Open application with a peer review process
 - Continue the 25 years of progress through:
 - Innovation in production networking and demonstrations
 - Open pursuit of ways to advance networking for HPC
 - <https://scinet.supercomputing.org/workshop/node/8>