SC16 Technical Program Workshop
INDIS 2016:
Innovating the Network for Data-Intensive Science

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Salt Lake City, Utah | hpc matters.

SCinet

Corby Schmitz, SCinet Chair 2016
Argonne National Laboratory
November 13, 2016
Salt Lake City, UT

Summary Highlights

- Total WAN bandwidth delivered: 3.15 Tbps
- Total metro bandwidth delivered: 5.4 Tbps
- Routing and switching capacity: 14Tbps+
- 56 mi/90km of fiber deployed on exhibit floor
- Over $32 million in loaned equipment
- Over 200 volunteers from over 18 countries
- 200+ SCinet Wireless Access Points configured
- 8 Distributed NOCs (DNOC) on exhibit floor
- 120 managed and 78 unmanaged switches

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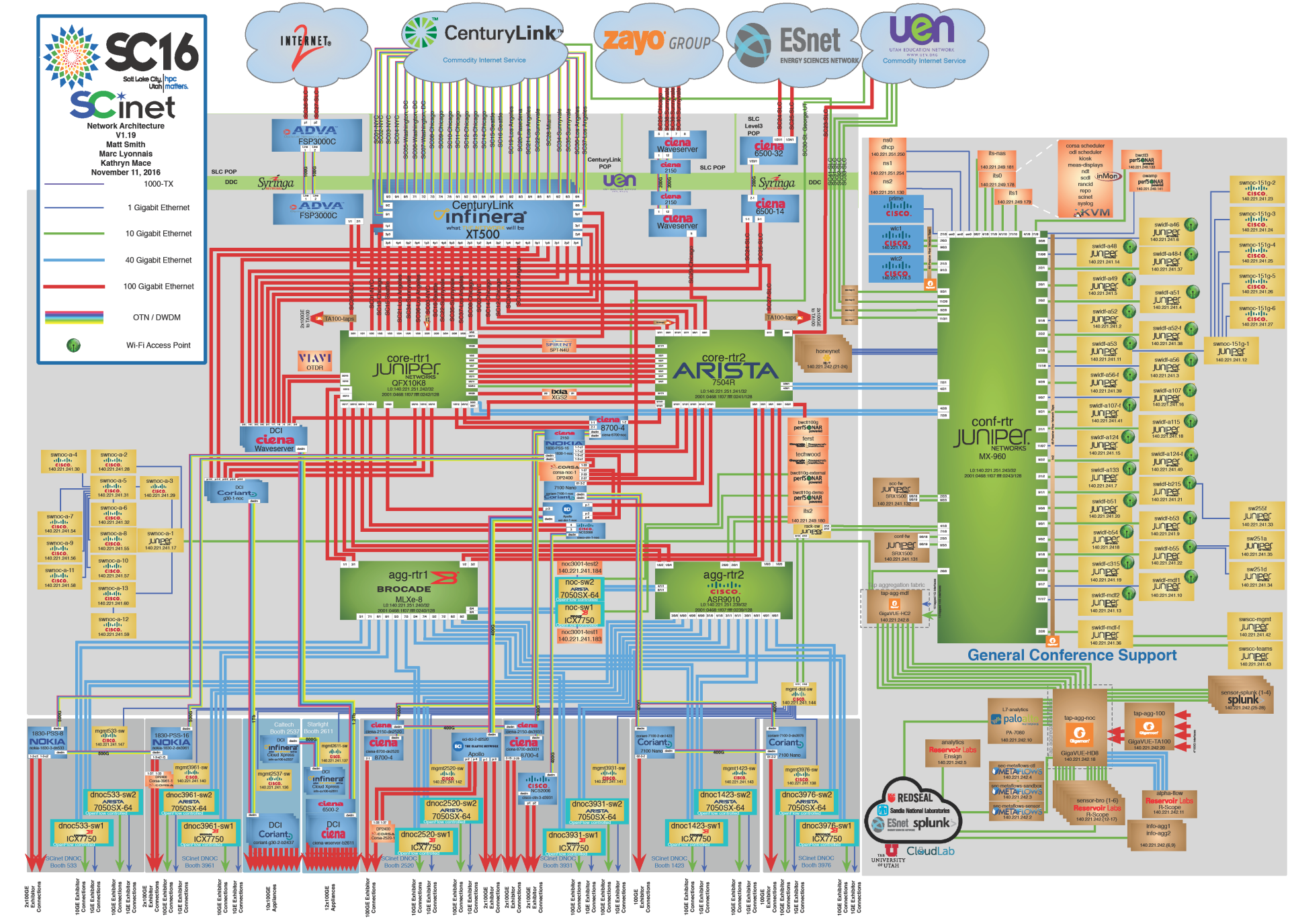
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SCinet
Network Architecture
V1.19
Matt Smith
Marc Lyonnais
Kathryn Mace
November 11, 2016
1000-TX
1 Gigabit Ethernet
10 Gigabit Ethernet
40 Gigabit Ethernet
100 Gigabit Ethernet
OTN / DWDM
Wi-Fi Access Point
INTERNET2
CenturyLink
Commodity Internet Service
zayo GROUP
ESnet
ENERGY SCIENCES NETWORK
uen
UTAH EDUCATION NETWORK
Commodity Internet Service
ADVA FSP3000C
Syringa
CenturyLink infinera XT500
SLC POP
DDC
CenturyLink POP
ciena Waveserver
ciena 6500-32
ciena 6500-14
ciena 2150
core-rtr1 JUNIPER NETWORKS QFX10K8
core-rtr2 ARISTA 7504R
conf-rtr JUNIPER MX-960
agg-rtr1 BROCADE MLXe-8
agg-rtr2 cisco ASR9010
ciena 8700-4
DCI ciena Waveserver
DCI Coriant gto-1-noc
TA100-taps
VIAVI OTDR
SPIRENT SPT-N4U
ixia XGS2
honeynet
its-nas
its0
its1
its2
ns0 dhcp
ns1
ns2
prime
wlc1
wlc2
corsa scheduler
odl scheduler
kiosk
meas-displays
ndt
scdi
rancid
repo
scinet
syslog
KVM
inMon
perfSONAR
owamp
swmoc-a-1
swmoc-a-2
swmoc-a-3
swmoc-a-4
swmoc-a-5
swmoc-a-6
swmoc-a-7
swmoc-a-8
swmoc-a-9
swmoc-a-10
swmoc-a-11
swmoc-a-12
swmoc-a-13
swmoc-151g-1
swmoc-151g-2
swmoc-151g-3
swmoc-151g-4
swmoc-151g-5
swmoc-151g-6
swidf-a46
swidf-a48
swidf-a48-f
swidf-a49
swidf-a51
swidf-a52
swidf-a52-f
swidf-a53
swidf-a56
swidf-a56-f
swidf-a107
swidf-a107-f
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swidf-a124-f
swidf-a133
swidf-b51
swidf-b53
swidf-b54
swidf-b55
swidf-b215
swidf-c315
swidf-mdf1
swidf-mdf2
swidf-mdf-f
sw255f
sw251a
sw251d
swscc-mgmt
swscc-teams
General Conference Support
noc3001-test2 140.221.241.184
noc-sw2 ARISTA 7050SX-64
noc-sw1 cisco ICX7750
noc3001-test1 140.221.241.183
mgmt-dist-sw 140.221.241.144
dnoc533-sw2
dnoc3961-sw2
dnoc2520-sw2
dnoc3931-sw2
dnoc1423-sw2
dnoc3976-sw2
dnoc533-sw1
dnoc3961-sw1
dnoc2520-sw1
dnoc3931-sw1
dnoc1423-sw1
dnoc3976-sw1
SCinet DNOC Booth 533
SCinet DNOC Booth 3961
SCinet DNOC Booth 2520
SCinet DNOC Booth 3931
SCinet DNOC Booth 1423
SCinet DNOC Booth 3976
Caltech Booth 2537
Starlight Booth 2611
tap-agg-mdf
GigaVUE-HC2
tap-agg-noc
GigaVUE-HD8
tap-agg-100
GigaVUE-TA100
sensor-splunk (1-4)
splunk
L7-analytics
palo alto
PA-7080
analytics
Reservoir Labs
Ensign
sec-metaflows-dl
sec-metaflows-sandbox
sec-metaflows-sensor
METAFLOWS
sensor-bro (1-6)
Reservoir Labs
R-Scope
alpha-flow
info-agg1
info-agg2
REDSEAL
Sandia National Laboratories
ESnet
splunk
CloudLab
THE UNIVERSITY OF UTAH
2x100GE Exhibitor Connections
10GE Exhibitor Connections
1GE Exhibitor Connections
10x10GE Appliances
12x10GE Appliances
100GE Exhibitor Connections

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What Good is SCinet?

- Unrivaled International Networking Laboratory
  - Leading experts 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 exhibit component
  - Vendor, service provider and customer participation
  - Network Research Exhibition (NRE) demonstrations

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- Innovating for 26 years
  - Amazing transformations in networking with advances every year
  - Pursuing richer capabilities and more functionality in networking
  - SCinet 26.20
- Long History of Software Defined Networking
  - Database driven network design going back more than a decade
  - Auto routing infrastructure
  - Fully incorporated SDN advances and implementation
- Continued Exploration in this crucial time in networking development
- Provide a platform to herald the importance of network research

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