

International Update: My Internet2 Connection Reaches Who, What and Where?

Internet2 Spring Member Meeting
Track Session

Tuesday, April 21, 8:45 – 10:00 a.m.



Session Overview

- Introduction and Overview
 - Heather Boyles
- NSF IRNC Program
 - Kevin Thompson
- US universities' overseas campuses and their need for R&E network connectivity
 - Tim Chester
- Collaborating with counterparts in other countries over Internet2 and its international partners' networks
 - Tom Snook

Internet2 International Connectivity Goals

- Provide access for Internet2 Network user community to same type of high-performance, advanced network environment as enjoy in US on global basis
- Support the international research, teaching, learning, clinical, outreach missions of Internet2 community

International Connectivity Pieces

1. US-based international exchange points
 - And Internet2 Network connectivity to them
2. Circuits across oceans and northern, southern borders
3. Infrastructure within other countries, regions
 - Transit across partner networks

1) US-based international exchange points

- Based around “coasts” of US
- Typically run by members of Internet2 community
- Provide fabric for interconnecting R&E networks with presence in those geographic areas
- Star Light, PacificWave, MAN LAN, AMPATH, AtlanticWave

2) Circuits across oceans and northern, southern borders

- Provided by partners outside US
 - Most paid/procured by non-US networks (still)
- NSF funds
 - NSF IRNC program
- DOE funds
 - CalTech procures LHCnet (CERN to Fermi and Brookhaven) links
- IEEAF donated links
 - (about to end, but 10Gbps+622Mbps across Atlantic and Pacific)
- Internet2
 - One 10Gbps OC192c paid/procured by Internet2 (NYC-London) for point to point circuit work with Europe
- RONS cross-border
 - Partnerships between bordering networks (NYSERNET-RISQ, Merit-ORION, UT El Paso-UA Ciudad Juarez, etc.) provide cross-border fiber infrastructure



— NSF IRNC-sponsored connections
 — Other international connections

- U.S. Exchange Points**
- PacificWave
 - PacificWave-North
 - PacificWave-Bay Area
 - PacificWave-South
 - StarLight
 - AtlanticWave
 - MANLAN
 - NGIX-East
 - AMPATH

For further information regarding the international programs of Internet2, visit <http://international.internet2.edu/> or contact Heather Boyles, International Relations Director, heather@internet2.edu.
 A listing of networks reachable via the Internet2 Network is found on the back of this page.

3) Infrastructure within other countries, regions

- NRENs around the world
 - Pre-existed Internet2
 - Continuing to grow in number
- Regional (continental-scale) connectivity between NRENs

International Partner Program

- Forms partnerships between organizations with similar goals/objectives and similar constituencies – counterparts in other countries
- 50 partnership agreements - well over 50 NRENs
- Benefits
 - Provide access for users of the Internet2 Network to the Research and Education Networks of over 87 countries
 - Basis for understanding how to facilitate collaborations between US Internet2 community and counterparts in other countries
 - Basis for joint development activities with Internet2 counterparts in other countries

Current International Partners

Europe

ARNES (Slovenia)
BELNET (Belgium)
CARNET (Croatia)
CESnet (Czech Republic)
DANTE (Europe)
DFN-Verein (Germany)
FCCN (Portugal)
GARR (Italy)
GIP- RENATER (France)
GRNET (Greece)
HEAnet (Ireland)
HUNGARNET (Hungary)
NORDUnet (Nordic Countries)
PSNC/PIONER (Poland)
RedIRIS (Spain)
RESTENA (Luxembourg)
RIPN (Russia)
SANET (Slovakia)
Stichting SURF (Netherlands)
SWITCH (Switzerland)
TERENA (Europe)
JISC, UKERNA (United Kingdom)

Africa

MCIT [EUN/ENSTINET]
(Egypt)
TENET (South Africa)

Middle East

Khalifa University of Sci
& Technology(UAE)
Israel-IUCC (Israel)
Qatar Foundation (Qatar)

South Asia

ERNET/CDAC (India)
PERN (Pakistan)

Asia-Pacific

AAIREP (Australia)
APAN (Asia-Pacific)
ANF (Korea)
CERNET/CSTNET/
NSFCNET (China)
JAIRC (Japan)
JUCC (Hong Kong)
MYREN/MDeC (Malaysia)
NECTEC/UNINET (Thailand)
REANNZ (New Zealand)
SingAREN (Singapore)
NCHC/TANet (Taiwan)

Americas

CANARIE (Canada)
CEDIA (Ecuador)
CLARA (Latin
America & Caribbean)
CNTI (Venezuela)
CR2NET (Costa Rica)
CUDI (Mexico)
REUNA (Chile)
RETINA (Argentina)
RNP [FAPESP] (Brazil)
SENACYT (Panama)





INTERNET2 NETWORK INTERNATIONAL REACH

AMERICAS

Argentina (RETINA)
Brazil (RNP2/ANSP)
Canada (CA*net)
Chile (REUNA)
Colombia (RENATA)
Costa Rica (CR2Net)
Ecuador (CEDIA)
El Salvador (RAICES)
Guatemala (RAGIE)
Mexico (Red-CUDI)
Panama (RedCyT)
Peru (RAAP)
Uruguay (RAU2)
Venezuela (REACCIUN2)

EUROPE and MIDDLE EAST

Albania (ASA/INIMA)
Austria (ACOnet)
Belgium (BELNET)
Bosnia-Herzegovina (BIHARNET)
Bulgaria (ISTF)
Croatia (CARNet)
Cyprus (CYNET)
Czech Republic (CESNET)
Denmark (Forskningsnettet)
Estonia (EENet)
Finland (Funet)
France (Renater)
Germany (G-WIN)

EUROPE and MIDDLE EAST cont'd

Greece (GRNET)
Hungary (HUNGARNET)
Iceland (RHnet)
Ireland (HEAnet)
Israel (IUCC)
Italy (GARR)
Jordan (JUNET)
Latvia (LATNET)
Lithuania (LITNET)
Luxembourg (RESTENA)
Macedonia (MARNET)
Malta (Univ. Malta)
Netherlands (SURFnet)
Norway (UNINETT)
Palestinian Territories (Gov't
Computing Center)
Poland (PIONIER)
Portugal (RCTS2)
Qatar (Qatar FN)
Romania (RoEduNet)
Serbia-Montenegro (AMREJ, UoM/MREN)
Slovakia (SANET)
Slovenia (ARNES)
Spain (redIRIS)
Sweden (SUNET)
Switzerland (SWITCH)
Syria (HIAST)
Ukraine (URAN)
United Kingdom (JANET)
Turkey (ULAKBYM)

ASIA and PACIFIC

Australia (AARNET)
China (CERNET,CSTNET,NSFCNET)
Fiji (USP-SUVA)
Hong Kong (HARNET)
India (ERNET)
Indonesia (ITB)
Japan (SINET, WIDE, JGN2)
Korea (KOREN, KREONET2)
Malaysia (MYREN)
New Zealand (KAREN)
Philippines (PREGINET)
Russia (RBnet, RUNNET)
Singapore (SingAREN)
Taiwan (TANet2, ASNet)
Thailand (UNINET, ThaiSARN)
Vietnam (VINAREN)

MULTINATIONAL NETWORKS

APAN
GEANT2
redCLARA

AFRICA

Algeria (CERIST)
Egypt (EUN/ENSTINET)
Morocco (CNRST)
South Africa (TENET)
Tunisia (RFR)

CENTRAL ASIA

Armenia (ARENA)
Georgia (GRENA)
Kazakhstan (KAZRENA)
Tajikistan (TARENA)
Uzbekistan (UZSCI)

Inquiries on who is reachable?

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