

ASNET-AM Network Activity during 2011

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ASNET-AM network activity during 2011

- HPSEE project was started
- Internet bandwidth via GEANT was increased from 34 Mbps to 45 Mbps
- Backup Internet bandwidth via local ISP UCOM is 16 Mbps
- ASNET-AM is supporting AMNIC in increasing availability of AM domain DNS-es in the Internet. Now it has additional links via GEANT and ArmenTel channels, owned by ASNET-AM

ASNET-AM network activity during 2011

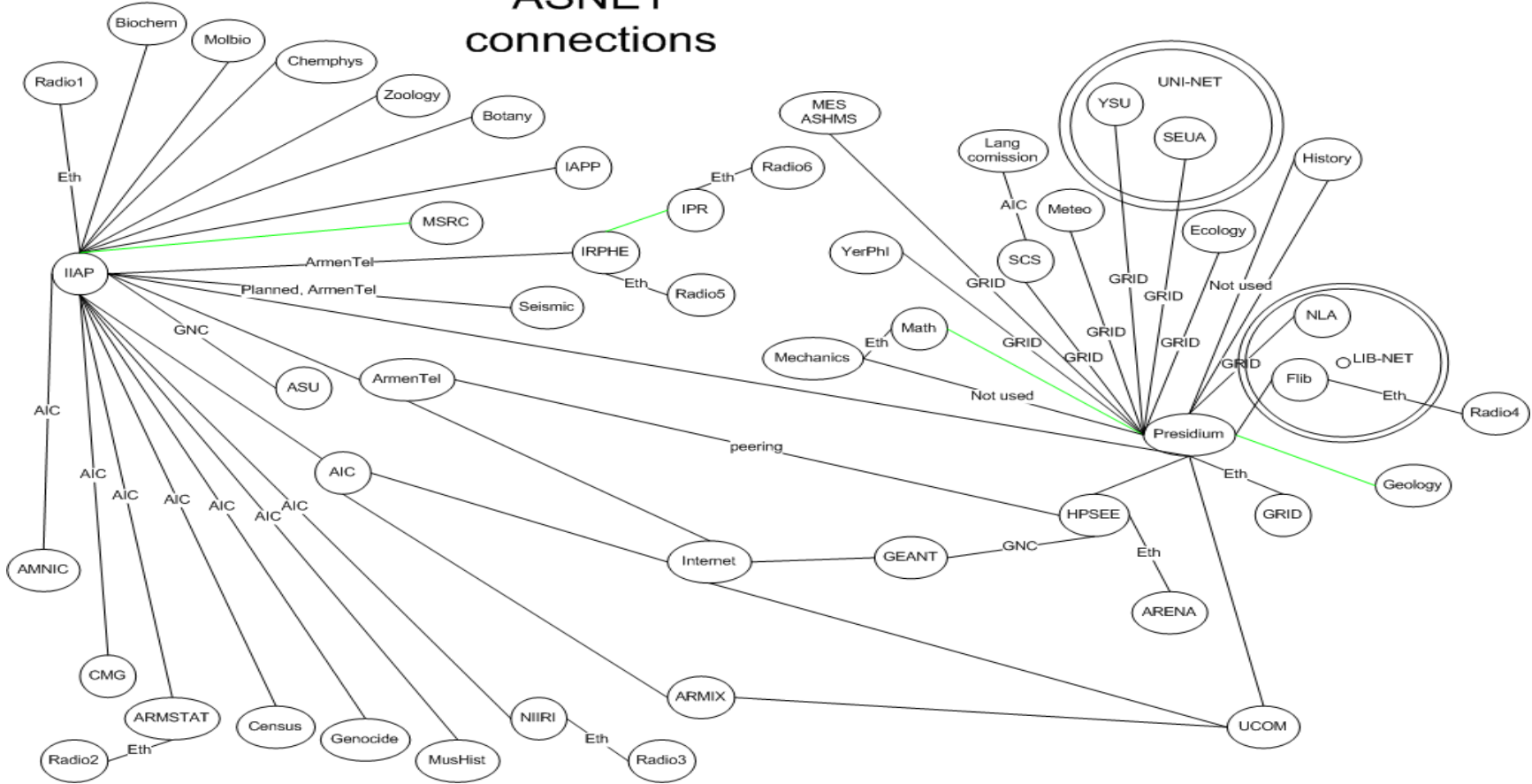
- ASNET-AM continues to support Freenet project. Now it's Internet bandwidth increased with new channel via ArmenTel
- ASNET-AM created new gigabit fiber optics links in Yerevan to the following institutes:
Biochemistry, Molecular Biology, Chemical Physics, Zoology, Botany, Applied Problems of Physics, Center for Ecological Noosphere Studies, National Library of Armenia. Those lines are using now instead of old NFSAT lines.

ASNET-AM network activity during 2011

- New organizations were connected to ASNET-AM with leased 10 Mbps fiber optics lines: Artsakh State University, Center of Medical Genetics and Primary Health Care, Census Bureau
- Ring network structure was changed to two stars structure with two main nodes: IIAP and Presidium

ASNET-AM network activity during 2011

L2 F/O
ASNET
connections



ASNET-AM network activity during 2011

- ASNET-AM is involved in IPv6 project. Currently Arminco and GEANT provide IPv6 BGPv6 links to ASNET-AM, negotiations with ArmenTel and UCOM are in progress
- IPv6 currently is implemented in 3G service, in IIAP and Presidium and work is going on implementation in BAO and other institutes

ASNET-AM network activity during 2011

- To make ASNET-AM manageable old dumb switches are replacing to new smart gigabit switches
- To increase ASNET-AM stability new RouterBoard routers, managing remotely with winbox GUI, from MikroTik are installing, dividing ASNET-AM to smaller L3 parts and increasing network security level. Old VTUN tunnels are changing to EoIP tunnels. VLANs makes ASNET-AM more robust

ASNET-AM network activity during 2011

- ASNET-AM has multilevel monitoring system:
 - 1. Smokeping server to plot ping results each 5 minutes for chosen hosts
 - 2. Cacti server to monitor SNMP information from switches and routers
 - 3. ntop server to monitor Netflow v5, v9 packets from routers
 - 4. Weathermap server to show main links bandwidth

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- 5. nfsen server to show detailed traffic information, emitted by routers via Netflow. Every packet header is recording and can be used in security case analysis. Specially designed in ASNET-AM application shows hourly/daily/monthly/yearly traffic graphs by institutes
- 6. Ganglia server shows physical servers state and also is using for GRID monitoring
- 7. Nagios server shows global ASNET-AM state

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- 8. Dude server from MikroTik shows detailed network information
- 9. Log server store server logs
- To estimate network quality we regularly run bandwidth tests: local (iperf, btest) and external (<http://my-speedtest.com/> and others)

ASNET-AM network activity during 2011

- ASNET-AM is responsible for providing negotiated bandwidth to 3 main customers: ASNET-AM itself, ARMGRID and ARENA. QoS on border ASNET-AM router do the job
- Inside ASNET-AM bandwidth is distributed by dedicated router. Every institute has guaranteed minimal bandwidth, but bandwidth, unused by others can be used in some limits
- QoS on all MikroTik routers includes IPv6 traffic