Red Universitaria Nacional, REUNA, www.reuna.cl

REUNA is the Chilean Research and Education Network (NREN), a non-profit private corporation currently integrated by 29 institutions - universities, astronomical observatories, research centers, CRUCH¹, RedG9² and CONICYT³. Our mission is to promote and support the development of the Chilean education, innovation and research communities through the deployment and management of an advanced e-infrastructure. We supply a digital platform for research and education. We adopt and develop new technologies, in order to support our community with a world-class network infrastructure, services and applications. All of these functions aim to strengthen the communication and collaboration among the member institutions and their global partners.

High Demand Networking “Problem”

- The needs of intensive data science are constantly increasing due to high performance computing, data storage, data visualization, etc.
- REUNA is developing a national photonic (DWDM) network to serve the national science and education community
- In universities the local internet networks are designed to serve the core administrative services as e-mail, web, accounting and scholarship systems. The design has poor performance for the data intensive science and the networks cannot respond to the demands of the academic research communities
- There are two possibilities to resolve the problem:
  - Science DMZ⁴ (ESNET proposal), network optimized for high performance scientific applications that coexist with general purpose facilities of the institution
  - SND⁵ software defined network which intends to optimize the use of the network for specific needs over a dynamic management of the network resources

Internship proposal

Pilot: LAN for the use of science in the member institutions of REUNA

- Design and testing of a prototype based on Science DMZ model for a local area network of the institutions (universities) in the network
- The person responsible for the execution of the project has to:
  - Immerse in the above mentioned technologies
  - Have the basic understanding of the internal networks of the universities
  - Introduce the project proposal to the IT staff of the universities and implement the prototype with them
  - Document the pilot project to allow the replication of the model in other institutions of the network
  - The person will integrate the Technology Area of REUNA working as a team with the CTO and the other engineers of the group

Professional Background/Expected competencies:

- Ms. C. -level engineering studies in the fields of IT
- Knowledge in advanced networking concepts, LAN and routing protocols
- Network designing skills and fast to absorb new knowledge
- Good communication skills to work with inter institutional working groups
- Proactive, resourceful, responsible and committed
- Language: Spanish and English (written and spoken)

Applications (CV + cover letter) or questions to info(a)reuna.cl with the title “Práctica IT”. REUNA do not provide a salary to the intern but a lunch and locomotion allowance can be negotiated. The ideal duration of the internship would be from 5-6 months.

¹ http://www.consejoderectores.cl/web/, Consejo de Rectores
² http://redg9.cl, Grupo G9
³ http://www.conicyt.cl, National Commission for Scientific and Technological Research
⁴ https://fasterdata.es.net/science-dmz/
⁵ https://www.opennetworking.org