



## Electronics/Computer and Software Engineer - System Manager

The Atacama Pathfinder Experiment (APEX) Observatory and the Millimeter and Submillimeter Astronomy Department of the Max-Planck-Institut für Radioastronomie (MPIfR) in Bonn, Germany, in collaboration with the Pontificia Universidad Católica de Chile (PUC) in Santiago, are seeking a highly motivated Electronics or Computer Engineer with a strong software and IT background to join our team as a **Hands-on System Manager**.

The successful applicant will perform network and system administration of the hardware, as well as software maintenance and development in a complex distributed system, which include real time control, monitoring and data acquisition. As an APEX team member, she/he will collaborate and give support to external multinational teams coming to install and test new equipment.

The APEX Observatory does not use external service providers to deal with problems in our equipment and services. This, due to the unique characteristics of the APEX infrastructure setup, as well as to the APEX location, which makes the inherent response times of these external services slow. Hence, most problems are solved in-house. Therefore, a very important part of the job is to be able to find creative solutions to a variety of services and equipment problems. It is expected that the developed solutions are efficient, effective, durable, low-maintenance, able to be remotely monitored, cost effective, upgradable, and well documented. Here, attention to detail is key.

### About APEX:

The Atacama Pathfinder EXperiment (APEX) 12m (sub)mm telescope on the Chajnantor Plateau in the Chilean Andes has been conducting ground-breaking observations and exciting research on the cold Universe for more than 19 years. It plays an important role not only as a pathfinder, but also as a complementary instrument for ALMA and the Event Horizon Telescope (EHT). Large programs such as ATLASGAL, SEDIGISM, and LESS have been ground-breaking for research on the dense galactic interstellar medium and the early Universe, respectively.

### Main Duties and Responsibilities:

As an APEX System Manager, you will play an essential role in supporting observations by maintaining equipment and the IT infrastructure (both software and hardware) at our world-class facilities. Your responsibilities will include, but will not be limited to:

- Monitoring and maintaining the APEX Linux server machines holding different types of services, as well as virtual machines.
- Installing and configuring Linux server machines, as well as the software and libraries of varied areas needed in them.
- Managing the internal and external IT services (Jira Tickets system, web service, mail service, DNS and DHCP services, Grafana services, etc.).
- Monitoring and maintaining the database engines and the databases in them, as well as the backup systems for scientific and non-scientific data.
- Support the Science Operations group by maintaining and installing software programs and libraries, as required by the group.
- Development of software (programs and scripts) for different purposes, such as: monitoring of real world and virtual variables, control of real world and virtual systems, backup of scientific data, and in general, data processing of different kinds.
- Managing, maintaining and updating the network infrastructure, which contains switches, routers, firewall services, SSH and VPN services, wireless point to point communication equipment, etc.
- Managing and maintaining our VOIP system.
- Be the first support point for all our IT infrastructure.



### Location and Working Conditions:

- The position is based at the APEX Observatory near San Pedro de Atacama, Chile, with occasional travel to the telescope at 5,100 meters above sea level.
- The position involves 40 working weeks in regular 8-day shifts at APEX, full lodging accommodation provided on site, followed by 6 days off-shift.
- Office space is also provided at the Astro-Engineering Center (AIUC) PUC in Santiago, Chile, in case required during the off-shift period.

### Reports to:

The Head of Engineering.

### Key Competences and Experience:

#### Personal skills:

- Ability to organize small projects
- Good time management and multi task working
- Able to early identify problems and pro-actively develop solutions
- Willingness to learn and deal with new situations and issues
- Work under pressure in harsh environments (high altitude)

#### Team working skills:

- Contributes ideas for improvements and developments to the working of the team.
- Has a flexible attitude to team roles and shares own knowledge, experience and skills to enable others to meet team and organization's goals.

#### Planning skills:

- Monitors progress of own work and delivers to agreed deadlines and standards.

#### Developing skills:

- Develops own skills and ensures that learning and development needs are identified, solutions are found, and outcomes are evaluated.

### Required Qualifications:

- Professional with university degree in Electronics or Computer Engineering, IT/System Management, Computer Science or equivalent experience.
- Linux OS experience, as advanced user (administrator would be a plus) and bash scripting experience.
- Database management and maintenance using SQL.
- Programming skills in some mayor language (e.g. Java, C, C++, Python)
- At least one year of professional experience in related areas.
- Excellent communication and collaboration skills.
- Excellent English language fluency (written and spoken) to work in our multi-national environment.
- Ability to work effectively in an international, multicultural, and multidisciplinary team.
- Chilean Class B driver's license and correspondent driving skills to commute between Sequitor and the Chajnantor site.



### Desirable Qualifications:

- Computer and network services: email, HTTP, Wiki/Documentation, DNS, DHCP, NFS protocols and others.
- Network management, including switches, routers and firewalls (for instance with HP/ARUBA or Cisco equipment).
- Hardware maintenance for server hosts and PCs (e.g.: replacement of power supplies, hard drives, RAM, CPU, expansion cards, etc.).
- Installation and setup of whole machines.
- Storage RAID systems management.
- Bash and Python scripting languages. C and C++ programming languages.
- Knowledge/experience with SCADA and HMI systems (for the visualization and analysis of monitored data, as well as for the control of output variables).
- Experience with ticketing systems and data backup systems.
- Background in programming of low-level hardware (e.g. monitoring and control devices) using client-server paradigm or Corba, would be valuable assets.

### Compensation and Benefits:

- The initial appointment is until December 31<sup>st</sup>, 2028, with the possibility of extension.
- Salary is paid in Chilean Pesos with a monthly gross range starting at \$1,800,000 depending on qualifications.

### Application:

Interested candidates should send application materials in English, including a letter of motivation, CV, a two-page summary of relevant experience, and the names of two professional referees who have been asked by the applicant to be willing to submit letters of recommendation by email to: [jobs@apex-telescope.org](mailto:jobs@apex-telescope.org)

**Deadline for applications is 20 April 2025.**

Initial review of applicants will begin on **April 20, 2025**, **but applications will be accepted until the position is filled**. Applications will also be considered for other positions to be opened soon at the APEX observatory and pre-selected candidates will be contacted directly.

**Due to travel requirements and the duty station, aptness to work at high altitude and a positive Geographic Altitude (up to 5.500 masl) medical certificate will be required prior to a contract offer.**

EEO/AAP Policy Statement:

APEX and PUC are an equal opportunity employers committed to fostering an environment that welcomes and embraces diversity, and does not discriminate on the basis of race, color, creed, religion, origin, disability, age, sexual orientation, or marital status in its activities, including employment, admissions, and educational programs.

For more information:

- APEX website: <https://www.apex-telescope.org/>
- PUC Faculty of Engineering and Sciences: <https://www.ing.uc.cl/en/academicos-e-investigacion/>
- MPIfR Millimeter and Submillimeter Astronomy Department: <https://www.mpifr-bonn.mpg.de/research/submm>

Other Chilean and University employment benefits may be found in:

- Foreign workers in Chile: <https://www.dt.gob.cl/portal/1626/w3-article-93693.html>
- University rules and regulations: <https://direcciondedesarrolloacademico.uc.cl/politicas-y-reglamentos>
- All members of the Pontificia Universidad Católica de Chile subscribe the Code of Ethics that can be found in <https://www.uc.cl/codigo-de-honor/>