



Elettra Sincrotrone Trieste

Junior System Administrator

Deadline: 24 November 2023

Ref: IA/23/37

Background

Elettra Sincrotrone Trieste is an international multidisciplinary research center operated as a user facility, featuring a 2.0/2.4 GeV, third-generation synchrotron light source (Elettra), a new free-electron laser light source (FERMI) and a variety of support laboratories. The extremely high quality of the machines and beamlines has set new performance records and has been producing results of great scientific and technological interest. In order to allow the laboratory to remain competitive in the next 20 years, an entirely new source - Elettra 2.0 - belonging to the new generation of storage rings (DLSR or Diffraction Limited Storage Ring) is being developed. The new source will exhibit a major increase in the brilliance and coherence fraction of the photon beams. The Elettra 2.0 optics is based on our enhanced symmetric six bend achromat structure (S6BA-E) with a 12-fold symmetry and an emittance of 200 pm-rad at 2.4 GeV. The new structure creates also straight sections in the arcs permitting the installation of additional insertion devices, thus increasing the number of beamlines. Existing beamlines will have to be upgraded and new beamlines developed to take full advantage of the characteristics of Elettra 2.0. The new machine is scheduled for commissioning in the second half of 2026. See <http://www.elettra.eu> for more information.

Beamline/Activity/Project description

The focus of the activity will be on the development of data compression techniques, data storage and related services. The League of European Accelerator-based Photon Sources (LEAPS) has launched the LEAPS-INNOV pilot project to solve key technological challenges for the light sources. Over 50 facilities in Europe and worldwide participate in the LEAPS-INNOV project to support the new generation diffraction-limited storage rings and X-ray FELs. It will kick-start the implementation of the LEAPS Technology Roadmap and, at the same time, will enhance partnership with industry through open innovation by offering joint technological developments and advanced research capabilities for industry as collaborators, suppliers and users. In the framework of the Workpackage 7 of the LEAPS-INNOV project the successful candidate will participate in the development of data compression techniques and related services. The successful candidate will also contribute to maintaining the services of Elettra Sincrotrone Trieste critical to the data communication, compression and storage functions.

Job description

Part of the activities of the successful candidate will be dedicated to contribute to Workpackage 7 (WP7, Data Reduction and Compression) of the LEAPS-INNOV project that aims at the development of data compression techniques and related services. WP7 focuses on the establishment of a collaboration platform for data reduction and compression, the assessment of future needs in this area and on the development of metrics for the possible techniques. It will also evaluate and adopt methods for reduction and algorithms for data compression and will exchange knowledge with industry.

For the remaining part of the activities, the successful candidate will contribute to maintaining the critical services of Elettra Sincrotrone Trieste critical to data communication, compression and storage. In particular he/she will also handle services related to data sharing and storage, back-up systems, provide user support for deployed systems and will be involved in the management of the company systems dedicated to the mail infrastructure, composed by an antispam appliance and a mail server, contributing to the development, update, and expansion of existing services.

Qualifications

A high school diploma (EQF 5) in Information and Communication Technology (ICT) together with a minimum 5 years of experience as System Administrator or a Bachelor degree (EQF 6) in ICT is required.

The following technical skills are required:

- Excellent knowledge of the Linux operating system, specifically Debian, Ubuntu, and Rocky distributions

Elettra - Sincrotrone Trieste S.C.p.A.

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Società di interesse nazionale
ai sensi dell'art. 10, comma 4,
L. 19 ottobre 1999 n. 370

CERTIFIED
MANAGEMENT SYSTEM



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Elettra Sincrotrone Trieste

- Good knowledge of storage systems, specifically Ceph, ZFS, and LTFS
- Experience with cloud storage systems, particularly Seafile
- Strong knowledge of networking, with a focus on server rooms and experience with high bandwidth links
- Proficiency in open source virtualization systems, specifically Proxmox clusters.
- Experience with electronic mail systems, specifically Zimbra and Libraesva

The following skills would be considered a plus:

- Familiarity with Microsoft Windows and macOS from both the user and the System Administration perspectives
- Knowledge of Zabbix monitoring system and Puppet configuration management tool
- Strong scripting skills in shell, Python, Perl, and PHP for automating system administration tasks
- Experience with network services such as DNS, DHCP, LDAP, and Radius
- Familiarity with open source backup systems.

A positive approach to problem-solving and user assistance is expected. Good time management skills and ability to prioritize are also expected, together with the ability to interact with the facility staff and international users at all levels and to work as part of a multi-disciplinary team.

Good oral and written communication skills in English are essential.

Applications should include a full curriculum vitae, the names and contact information (including electronic mail) of up to three persons who have agreed to provide references.

The appointment will be a fixed term contract of an initial duration of 18 months. The salary will be commensurate with previous experience and qualifications of the candidate.

The deadline for the submission of the application is November 24, 2023.

In accordance with the provisions of article 21 of the Italian legislative decree no. 39/2013 and in conjunction with article 53 (subsection 16ter) of Italian legislative decree no. 165/2001, employees or former employees of any Italian Public Entity who have exercised authority over Elettra Sincrotrone Trieste S.C.p.A. or have negotiated with Elettra - Sincrotrone Trieste S.C.p.A. within the last three years will be excluded from the present selection procedure. We thank all applicants in advance.

For more information, please contact Roberto Pugliese (email: roberto.pugliese@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=3521>

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