Offer #2022-05197

GNU/Linux System Administrator

Contract type : Fixed-term contract

Renewable contract : Yes

Level of qualifications required : Graduate degree or equivalent

Fonction : Temporary scientific engineer

Level of experience : From 3 to 5 years

Context

[Software Heritage](#) is an ambitious nonprofit, entirely Free/Open Source Software (FOSS) project that aims at collecting, organizing, preserving for the very long term, and sharing all publicly available software in source code form, together with the corresponding complete development history (e.g., from a Version Control System) where available. The Software Heritage archive already contains about 12 billion unique source code files, retrieved from more than 150 million software projects.

The Software Heritage offices are hosted at the Inria Paris research center, located at 2, Rue Simone Iff, in Paris

Assignment

The Software Heritage infrastructure is a mix of in-house servers and cloud-based ones. It consists in a massive Postgresql and Cassandra based storage plus a large and replicated object storage, as well as all the required management parts (back-end workers, job schedulers, supervision and monitoring, backup and replication, etc.)

We are looking for a system / DevOps engineer to grow our operations team. The candidate must be fluent with Debian GNU/Linux system administration and have working knowledge of the Python ecosystem, with a strong interest in Free/Open Source Software (FOSS).

As a member of the Software Heritage team, the candidate will participate in maintaining the Software Heritage stack and infrastructure. He/she will also help the development team in designing future software architecture and infrastructure evolutions. As part of this position the candidate will primarily work on the following:

- keep the production Software Heritage infrastructure in good working conditions (public facing services, back-end workers, databases, file and object storage, task scheduling, CI/CD, monitoring, development tools, etc.);
- automate the deployment of new parts of the Software Heritage infrastructure or existing parts in novel contexts, to ensure automatic scalability using a mixture of cloud and in-house resources;
- actively participating in the FOSS communities of software and infrastructure components used by Software Heritage;
- help in designing the architecture of upcoming components of the Software Heritage software ecosystem, aiming at ensuring horizontal and/or vertical scalability.

Main activities

- supervision and maintenance of the Software Heritage infrastructure
- deployment and automation
- active participation in team life
- interaction with relevant Open Source communities and with Software Heritage partners

Skills

The ideal candidate should have experience in participating in existing FOSS projects, in any capacity (developer, community organizer, technical writer, etc.). According to the candidate experience, we expect self-organisation and autonomy skills. System administration good practices should be well known or mastered, especially in the context of FOSS development, and software development should be at least a familiar skill.

The following skills are expected:

- Debian GNU/Linux system administration
- Python application deployment and operation
- Puppet or equivalent infrastructure automation languages
- Postgres or equivalent DB administration
- Container technologies
- Good English level (written and oral)
- Good relational and communication skills

Knowledge and experience of the following will be considered a plus:

- Python application development
- Distributed scheduling technologies (e.g., RabbitMQ, Kafka, etc.)
- NoSQL databases (e.g., Cassandra, MongoDB, etc.)
- Scale-out storage (e.g., Ceph, cloud-based blob storage, ZFS, Swift, etc.)
- Working knowledge of distributed software architectures
- System programming in C

Benefits package

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking (after 6 months of employment) and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage

Remuneration

Based on degree and work experience

General Information

- **Town/city** : Paris
- **Inria Center** : Siège
- **Starting date** : 2022-09-01
- **Duration of contract** : 2 years
- **Deadline to apply** : 2023-01-31

Contacts

- **Inria Team** : DGD-I (DGD-I)
- **Recruiter** :
  Dupre Laurence / Laurence.Dupre@inria.fr

About Inria

Inria is the French national research institute dedicated to digital science and technology. It employs 2,600 people. Its 200 agile project teams, generally run jointly with academic partners, include more than 3,500 scientists and engineers working to meet the challenges of digital technology, often at the interface with other disciplines. The Institute also employs numerous talents in over forty different professions. 900 research support staff contribute to the preparation and development of scientific and entrepreneurial projects that have a worldwide impact.

The keys to success

The ideal candidate should be:

- at ease with maintaining critical GNU/Linux systems,
- have working knowledge of Python and Python ecosystem tools (PyPI, pip, virtualenvs, etc.),
- fluent with one or more infrastructure automation language (e.g., Puppet, Chef, Ansible, etc.)
- familiar with virtualization tools (e.g., Proxmox, kvm/libvirt, etc.)
- familiar with containers and related deployment tools (e.g., Docker, Docker Compose, Docker Swarm, Kubernetes, etc.)
- familiar with offerings by one or more major cloud providers (e.g., Azure, Amazon, Google),
- familiar with large RDBMS (e.g., Postgres, MySQL, etc.) administration
- familiar with one ore distributed storage system (e.g., Ceph, ZFS, etc.),
- familiar with one or more monitoring and supervision tool (e.g., Prometheus, Icinga, stasd, etc.)
- rigorous in day-to-day organization, especially using software forges (e.g., GitHub, GitLab, etc.),
- comfortable with the customs of FOSS development communities (distributed organization, IRC and mailing list based communication, sprints, etc.)

We do not expect candidates to be familiar with all of them, but **expertise with one or more** of the above technologies will be appreciated.

Instruction to apply

CV and cover letter

Defence Security :
This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST).Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

Recruitment Policy :
As part of its diversity policy, all Inria positions are accessible to people with disabilities.