Offre n°2024-07311

Development / System / Network engineer for CorteXlab

Type de contrat : Fixed-term contract

Niveau de diplôme exigé : Master's or equivalent

Fonction : Temporary scientific engineer

Niveau d'expérience souhaité : Up to 3 years

A propos du centre ou de la direction fonctionnelle

The Inria research centre in Lyon is the 9th Inria research centre, formally created in January 2022. It brings together approximately 300 people in 16 research teams and research support services.

Its staff are distributed at this stage on 2 campuses: in Villeurbanne La Doua (Centre / INSA Lyon / UCBL) on the one hand, and Lyon Gerland (ENS de Lyon) on the other.

The Lyon centre is active in the fields of software, distributed and high-performance computing, embedded systems, quantum computing and privacy in the digital world, but also in digital health and computational biology.

Contexte et atouts du poste

CorteXlab (https://www.cortexlab.fr) is an experimental testbed dedicated to radio communication research, specifically designed for Software Defined Radio experiments. It is hosted in the CITI lab (https://www.citi-lab.fr/), INSA Lyon.

With its 180m² EM shielded room that ensures experiment reproducibility and its 40 high-end SDR-capable radio nodes, CorteXlab provides a unique setup to experiment on new state-of-the-art radio techniques.

A major update of the platform hardware and software is planned for the following years, as well as the integration of the platform in the larger scale European SLICES-FR project (http://slices-ri.eu/), which aims at providing a large scale experimental platform in the domains of network protocols, radio technologies, Cloud, Edge and data services, as well as distributed and parallel computation.

This fixed-length contract is initially two years long, and we have the funding for renewing it two more years, so we are searching for a candidate who is willing to stay for the four years.

Mission confiée

The recruited engineer will be part of the CorteXlab team of four people, which gathers both radio communication and signal processing specialists, as well as development / system / network engineers.

He or she will work under the supervision of both the researchers defining the strategic orientation of the platform developments, and the technical director for the maintenance and development of the platform infrastructure.

He or she will be tasked to operate the platform (unix system administration), maintain, improve, or develop the software needed to run the platform (debugging, maintenance, evolution of custom in-house developed software, as well as deployment and configuration of off the shelf software, middlewares and services), and maintain existing hardware or install new hardware (servers, network equipments, and specific scientific devices such as software defined radio devices).

The aim of this work is to allow researchers to conduct innovating scientific experiments

Principales activités

- In a GNU/Linux Debian environment, contribute to the integration, administration or development of services needed for the operation of the platform. Some of these services are of the shelf standard common components (eg. NFS, DNS, DHCP, ...), while others are more specific (eg. OAR Batch scheduler http://oar.imag.fr/) and some are custom.

- Automate the deployment and configuration of most of the platform services with configuration tools (such as Ansible, Puppet). Until now, these tasks have been done with a custom tool and our goal is to switch to an of the shelf solution such as Ansible (https://www.ansible.com/).
- Contribute to the development, integration and maintenance of the software running the platform. Programming language is mainly Python, especially for the service piloting the experiments, with parts of the code in shell scripting language. Inter operation with other scientific platforms may also require other languages, such as Ruby.
- Contribute to the maintenance or creation of Docker images providing the software stack for running experiments (in particular: GNU Radio https://www.gnuradio.org/)
- Maintain or install hardware, such as servers, compute nodes, switches, routers, as well as SDR nodes such as NI / Ettus USRP radio nodes (https://www.ettus.com/product-categories/usrp-x-series/)
- Contribute to the maintenance or evolution of the platform network
- Interact with the users of the platform (CorteXlab scientific team as well as larger scientific community using the platform) to understand their needs and provide help and support
- Write or maintain documentation

Compétences

- Autonomy
- Good programming skills in Python, or alternatively very good skills in other programming languages ensuring a quick adaptation in a Python development environment
- Good skills in system administration.
- Good knowledge of GNU/Linux systems, in particular Debian. Some knowledge / experience with virtual machines or containers are a plus.
- Networking skills: basic knowledge of IPv4, IPv6, 802.1q VLans, basic network services (DNS, DHCP, NFS, LDAP, ...)
- Good practices in Devops style development: version control (git), automatic deployment and configuration (Ansible or Puppet or similar technologies)
- Good team work
- Beginner or first professional experience accepted

Avantages

- 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 (90 days / year) 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
- Complementary health insurance under conditions

Rémunération

Base of 2692 gross / month. Wage according to the profile

Informations générales

- **Thème/Domaine :** Distributed Systems and middleware
  System & Networks (BAP E)
- **Ville :** Villeurbanne
- **Centre Inria :** Centre Inria de Lyon
- **Date de prise de fonction souhaitée :** 2024-06-01
- **Durée de contrat :** 2 years
- **Date limite pour postuler :** 2024-05-15

Contacts

- **Équipe Inria :** MARACAS (DGD-I)
- **Recruteur :**
  Imbert Matthieu / matthieu.imbert@inria.fr

A propos d'Inria

Inria est l'institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 215 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3900 scientifiques pour relever les défis du numérique, souvent à l'interface d'autres disciplines. L'institut fait appel à de nombreux talents dans plus d'une quarantaine de métiers différents. 900 personnels d'appui à la recherche et à l'innovation contribuent à faire émerger et grandir des projets scientifiques ou entrepreneuriaux qui impactent le monde. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 200 start-up. L'institut s'efforce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

Attention: Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des

candidatures adressées par d'autres canaux n'est pas garanti.

Consignes pour postuler

Applications must be submitted online on the Inria website.

Processing of applications sent by other channels is not guaranteed.

Sécurité défense :
Ce poste est susceptible d'être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L'autorisation d'accès à une zone est délivrée par le chef d'établissement, après avis ministériel favorable, tel que défini dans l'arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l'annulation du recrutement.

Politique de recrutement :
Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.