

## Call for contribution of expertise

CERN invites collaborating institutes and universities to contribute the expertise of their qualified employees to the activity described below.

*Start date:* 01/09/2018    *Duration:* One year, possible extension to a maximum of up to three years.

*Project/Activity:* Computing Engineer for monitoring the CERN Data Centre

### *Detailed description of Activity:*

The CERN Monitoring team provides a central service to collect, enhance and display data from the CERN Data centre and the WLCG worldwide distributed services. The monitoring infrastructure is built on a modern and scalable technology stack (e.g. Collectd, Apache Kafka, Apache Spark, Elasticsearch, InfluxDB, Grafana). The expert will join a dynamic team of developers and operators working following Agile methodologies and using established open-source services and software such as Openstack, Puppet, Linux and Git. In particular, the expert will contribute to the enhancement of the monitoring framework and tools for the CERN data centre, such as:

- Deployment and support of the new Collectd-based local alarms for the > 40000 nodes of the CERN data centre and CERN IT services
- Study and development of centralized alarms via stream processing of metrics and logs, using technologies like Kafka and Spark, to detect node failures, equipment anomalies, etc.
- Integration of IT Department KPIs Performance Indicators by service, migration out of custom tools (i.e. SLS), creation of default dashboards for support teams and management
- Infrastructure Tuning: better infrastructure modularity and scaling, validating latest versions of tools and exploiting new functionalities (e.g. Kafka, dockers)

*Profile:* Qualification: Bachelor's degree in the field of Computer Science or related field, or equivalent. General knowledge of Linux system administration. Basic experience with at least one programming language such as Python, Java or Scala. Knowledge of any of the technologies mentioned above would be an asset but is not necessary.

*Specific details:* Work will be in a young team of engineers with frequent contacts with users and therefore a dynamic attitude to share and discuss ideas and suggestions within the team is very important. The team works and communicates in English therefore, a good working knowledge is needed.

*Status at CERN:* Associated Member of the Personnel (Project Associate or COAS).

Conditions in accordance with CERN's Staff Rules and Regulations and Administrative Circular No. 11. Subsistence allowance is payable by CERN to cover the additional cost arising from the individual's (and, as applicable, their family's) stay in the local area while performing activities at CERN.

*Option:* Collaborating institutes and universities can propose to support the activity of the qualified employees participating in this "Call for contribution of expertise" with students or other employees. Their status and Subsistence allowance when applicable will be adapted to their relation with their institutions

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*Reference:* 2018\_Q2\_011