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Monitoring and Analytics at INFN Tier-1: the next step

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In modern data centers an effective and efficient monitoring system is a critical asset, yet a continuous concern for administrators. Since its birth, INFN Tier-1 data center, hosted at CNAF, has used various monitoring tools all replaced, since a few years, by a system common to all CNAF departments (based on Sensu, Influxdb, Grafana).

Given the complexity of the inter-dependencies of the several services running at the data center and the foreseen large increase of resources in the near future, a more powerful and versatile monitoring system is needed. This new monitoring system should be able to automatically correlate log files and metrics coming from heterogeneous sources and devices (including services, hardware and infrastructure) thus providing us with a suitable framework to implement a solution for the predictive analysis of the status of the whole environment.

In particular, the possibility to correlate IT infrastructure monitoring information with the logs of running applications is of great relevance in order to be able to quickly find application failure root cause. At the same time, a modern, flexible and user friendly analytics solution is needed in order to enable users, IT engineers and IT managers to extract valuable information from the different sources of collected data in a timely fashion. In this paper, a prototype of such a system, installed at the INFN Tier-1, is described with an assessment of the state and an evaluation of the resources needed for a fully production system. Technologies adopted, amount of foreseen data, target KPIs and production design is illustrated. Also, some aspects about possible usage of Machine Learning techniques, in order to automate the operations tasks, are covered with some examples.

Consider for promotion

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