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10h00
INP-ENSEEIHT, Salle des thèses

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Resource management and performance improvement in virtualized infrastructures

Jury:
Pascal FELBER - Professeur d'Université - Rapporteur
Gilles MULLER - Directeur de recherche - Rapporteur
Vivien QUEMA - Professeur d'Université - Rapporteur
Laurent REVEILLERE - Professeur d'Université - Examinateur
Gaël THOMAS - Professeur d'Université - Examinateur
Noel DE PALMA - Professeur d'Université - Examinateur
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Abstract: Numerous companies rely on cloud infrastructures for hosting their services because of their attractive costs. Electricity consumption is a major challenge in such infrastructures, it represents around 50% to 70% of the expenditures. It doubles every five years due to explosive growth in both the number and density of datacenters, according to the last Berkeley Lab report. So, this is also a critical issue for the planet because electricity consumption results in CO2 emission. Existing approaches, based on virtual machine (VM) packing and dynamic server power scaling, have reached their limit because of the server-centric architecture of datacenters on the one hand and the server bounded limitation of VM monitors on the other hand. The new trend to go further consists in building future datacenters as giant computers, called disaggregated datacenters. My research project aims at designing the first system software for such a datacenter.