Computer Science
Seminar

Datacenter-scale Cloud Management: Experience, Insights and Future Challenges

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Abstract: Datacenter scale cloud platforms continue to exhibit increases in the scale and diversity of their infrastructure – cores, servers, enclosures, I/O – and the workloads they host – number and type of applications, virtual machines, etc. This results in significant challenges in the ability to effectively manage these platforms, to provide high resource utilization while also meeting client performance expectations, and to further evaluate the effectiveness of such management operation. In this talk, I will present our ongoing efforts toward management of compute, I/O and energy resources in cloud platforms, and will provide data regarding the insights we gained in the behavior of the management processes themselves, including their failures. For the results gathered in our experimental approach we use publicly available cloud traces as well as a range of popular cloud and enterprise workloads. Our evaluation with real cloud applications illustrate additional challenges due to the interactions of the cloud-level management processes and those present in modern cloud runtimes, like Hadoop.

Friday, April 26, 2013, 3:00 pm
Mathematics and Science Center: W301

Mathematics and Computer Science
Emory University