CS 6480: Class discussion summary
HA 2.b

José Monterroso

School of Computing, University of Utah

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Discussion summary

- *Summary:* We first discussed the definitions of containers and VMs. We defined containerization as a lightweight distribution of packaged applications for deployment and management. While VMs are about hardware allocation and management. Next we touched on the ideas of dependencies and life cycles of containers, this led to our primary discussion on orchestration. An orchestration plan describes components, their dependencies and container life cycles. Orchestration is needed for complex containers. Two orchestration mechanisms listed in the paper are Mesos, and Kubernetes. We then discussed the Linux kernel and how it uses namespaces and control groups. Next we discussed how a container engine runs container images. These image are the realization of rules that containers need to follow. One thing I failed to notice was the differences between micro-services and containers. Micro-services is the approach of developing a single application as a suit of small services; each running its own process. While containers are the underlying technology that enables micro-services.

- *Strengths and weaknesses:* The consensus regarding the paper during the discussion was split. However, it seems that the weaknesses outweigh the strengths. For example, we all seemed to agree that the paper contained great content with regards to the overall details covered and the amount of contented that was actually presented in the paper. The weaknesses of the paper lie within the paper format structure, the lack of figure and table explanations, and excessive repetition of recently presented ideas. My insights were actually identical to this as I brought up these same points in my paper summary.

- *Connection with other work:* From "A View of Cloud Computing," we were introduced to the idea of virtualization. To note, virtualization is what allows cloud computing to work. However, that paper hardly, if any goes into specifics about virtualization in cloud computing. From reading HA2's paper we learn about containers and VMs, which are both types of virtualization. A small connection was that we brought up the idea of containers having their own IP address and acting as linux routers. This in fact, is what we will be implementing in our Lab 1 assignment.

- *Future work:* We discussed the idea of added complexity when we use multiple apps within a container. This might be good future work because we could analyze time constraints, connectivity constraints, and provide a good orchestration solution to certain types of container complexities. Another Idea is the study of Mesos and Kubernetes orchestration in various complex driven containers.