

Enabling fine-grain elasticity through the operating system

ABSTRACT:

This talk examines the use of an application-specific libraryOS (aka. unikernel) as an alternative approach for enabling fine-grain elasticity in cloud applications. The "serverless" model gives developers a natural way to express fine-grain resource elasticity within their application. However, traditional OS abstractions for isolation (processes, containers, and VMs) have proven insufficient to meet the performance requirements for deploying serverless applications. An alternative approach, optimized for boot-time latency, combines a minimal isolation abstraction with a light-weight libraryOS capable to support a high-level language runtime.

BIO:

Jim Cadden is a sixth year PhD student at Boston University with a research background in operating systems, distributed systems, and cloud infrastructure. Jim's thesis work is focused on system-level abstractions to enable applications support of fine-grain resource elasticity. This past summer, Jim interned with the Cloud Programming Technology group at IBM Research, where he applied his research to their "serverless" product platform, OpenWhisk. Jim intends to graduate in Fall 2018.