EsseOS: Tailored Services for the Cloud

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Infrastructure-as-a-Service (IaaS) clouds comprise a large number of software layers: Each physical machine in the provider's datacenter runs a some virtual machines (VMs) that provide resources the cloud users. Within these VMs, users typically run commodity operating systems like Linux or Windows to host a language VM for the actual service. This huge stack of software layers is a source of many security issues and a burden to manage.

In this talk we present EsseOS, a thin operating system layer written in Haskell for simple service hosting in IaaS clouds. The system is reconfigurable to include only the essential set of features to support a given application, thus reducing the possible attack surface. The properties of the Haskell language also encourage writing type-safe programs with clearly isolated modules, which make security issues less likely.