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## PGP in Cloud Computing

### CAPSTONE PROJECT

## Use Case – Coursera

Coursera is an educational technology company with a mission to provide universal access to the world's best curricula. The company partners with top universities and organizations worldwide to offer online courses for anyone to take, for free. Coursera has more than 13 million users from 190 countries enrolled and offers more than 1,000 courses from 119 institutions, everything from Programming in Python to Songwriting.

## The Challenge

Coursera had a large monolithic application for processing batch jobs that was difficult to run, deploy, and scale. A new thread was created whenever a new job needed to be completed, and each job took up different amounts of memory and CPU, continually creating inefficiencies.

A lack of resource isolation allowed memory-limit errors to bring down the entire application.

The infrastructure engineering team attempted to move to a microservices architecture using Docker containers, but they ran into problems as they tried to use Apache Mesos to manage the cluster and containers—Mesos was complicated to set up and Coursera didn't have the expertise or time required to manage a Mesos cluster.