Reducing Garbage Collection Interference on Clouds

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Interference in Multitenant Clouds

Clouds limit their tenants’ access to resources. However, if they run on the same host, they can still interfere with each other.

Elastic GC
Elastic GC is a proposed technique that mitigates the GC interference of a tenant to its neighbors. It detects periods of low load, during which, it limits the GC to a fraction of the available resources.

Sample Run

The top graph shows the response time of a neighboring tenant. Elastic GC produces shorter but more frequent response-time delays.

The bottom graph shows the CPU utilization. CPU spikes occur during GCs and the Elastic GC techniques keeps them at lower levels; thus, mitigating interference.

High-level languages (Java, Node.js, C#, etc.) offer Garbage Collection (GC) and are often chosen for cloud deployments. However, GCs are CPU-intensive and can cause interference.

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