

# OPTIMIZE YOUR CLOUD AND DRIVE PERFORMANCE WITH C3D VMs

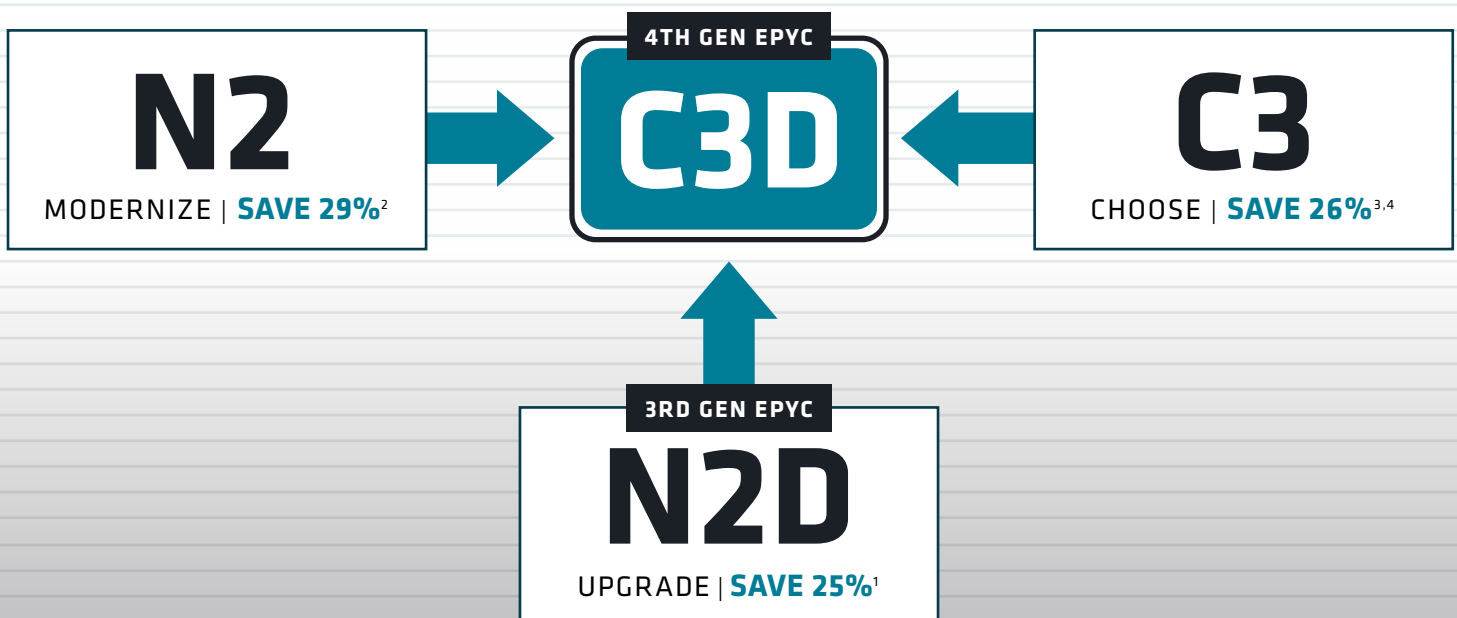
Powered by 4th Generation AMD EPYC™ processors

Today's workloads require consistent, scalable, and fast-processing cloud infrastructure. These include foundational workloads such as streaming, media, ad servers, and advanced data analytics, as well as transformational workloads such as Gen AI. You need a VM for these workloads that frees up your cloud budget and resources so you can focus efforts on these high-performance workloads.

Public cloud offers more flexibility and cost optimization opportunities compared to traditional data center architecture. However, unexpected compute usage makes it tough to control and optimize costs, especially when dealing with high performance use cases. Organizations often face a choice: pursue peak performance and pay the price, or sacrifice performance to save money.

VMs are your answer to maintaining performance with these foundational and transformational workloads and controlling cost when optimizing your cloud resources. By choosing the right machine for your workload throughput, you are able to reduce compute time and cloud costs, increase overall performance, and ensure downtime is limited.

## OPTIMIZE CLOUD SPENDING WITH C3D



## GET SIGNIFICANT CLOUD OPEX SAVINGS WITH C3D

Google Cloud C3D is a general-purpose VM offering that offers consistently high performance and reliability while helping customers reduce total compute time and costs. The C3D machine series is powered by 4th Generation AMD EPYC™ processors, which help maximize efficiency. These efficiency savings are especially apparent when leveraging Google Compute Engine (GCE) and Google Kubernetes Engine (GKE).

### C3D vs N2D

	PERF <sup>5</sup>	PERF/\$ <sup>5</sup>	OPEX SAVINGS <sup>1</sup>
MySQL	1.37x	1.28x	22%
Redis	1.62x	1.50x	33%
NGINX	1.58x	1.47x	32%
Server-side Java	1.44x	1.34x	25%
FFmpeg	1.21x	1.12x	11%
<b>AVERAGE</b>	<b>1.44x</b>	<b>1.34x</b>	<b>25%</b>

Compared to N2D, C3D VMs noticeably reduce cloud footprint and costs for organizations, with approximately 25% lower cloud OpEx. Optimize your cloud spending across a wide range of foundational workloads.

### C3D vs N2

	PERF <sup>6</sup>	PERF/\$ <sup>6</sup>	OPEX SAVINGS <sup>2</sup>
MySQL	1.20x	1.28x	22%
Redis	1.38x	1.48x	32%
NGINX	1.11x	1.19x	16%
Server-side Java	1.69x	1.81x	45%
FFmpeg	1.39x	1.49x	33%
<b>AVERAGE</b>	<b>1.35x</b>	<b>1.45x</b>	<b>29%</b>

Choosing C3D VMs can mean significant savings on operating costs. When adopting C3D, users can see a 35% performance uplift and save an average of 29% on cloud OpEx when compared to the prior generation Intel-based N2 VMs.

### C3D VS C3\*

	PERF <sup>7</sup>	PERF/\$ <sup>7</sup>	OPEX SAVINGS <sup>3,4</sup>
MySQL	1.05x	1.20x	17%
Redis	1.36x	1.56x	36%
NGINX	1.12x	1.29x	22%
Server-side Java	1.16x	1.33x	25%
FFmpeg	1.24x	1.43x	30%
<b>AVERAGE</b>	<b>1.18x</b>	<b>1.36x</b>	<b>26%</b>

Compared to Intel-based C3 VMs, C3D delivers an average of 26% cloud OpEx savings, making AMD-based VMs a great choice for organizations that need to watch their cloud budgets while getting even greater performance on their workloads.

\*C3D vCPU vs C3 8 vCPU for MySQL, Redis, NGINX, FFmpeg, C3D 16 vCPU vs C3 22 vCPU (per vCPU) for Java

## MANAGE HIGH-PERFORMING WORKLOADS

*C3D VMs are designed to help optimize your cloud for high-performance workloads, including:*



HIGH-TRAFFIC WEB, APP,  
AND AD SERVERS



MEDIUM-TO-LARGE  
DATABASES



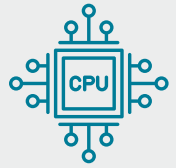
GEN AI



MEDIA STREAMING  
AND TRANSCODING



DATA ANALYTICS



CPU-BASED  
INFERRING

## SCALABLE TO SUIT YOUR NEEDS

C3D VMs scale up to 360 vCPUs and 2.8 TB of DDR5 memory across three memory configurations: highcpu (2GB/vCPU), standard (4GB/vCPU) and highmem (8GB/vCPU), with up to 12TB of Local SSD on standard and high-mem configurations.

## GET STARTED WITH C3D

*C3D VMs are available through Google Cloud in the following regions: us-west4 (Las Vegas), us-central1 (Iowa), us-east1 (S. Carolina), us-east4 (North Virginia), europe-west1 (Belgium), europe-west4 (Netherlands), asia-southeast1 (Singapore), australia-southeast1 (Sydney). New regions are coming online continuously.*

*To use C3D, select C3D under the General Purpose machine family when creating a new VM or GKE node pool in the Google Cloud console.*

<sup>1</sup>SP5C-049; <sup>2</sup>SP5C-048; <sup>3</sup>SP5C-046; <sup>4</sup>SP5C-047; <sup>5</sup>Comparing Google Cloud C3D vs. N2D Instances; <sup>6</sup>Comparing Google Cloud C3D vs. N2 Instances; <sup>7</sup>Comparing Google Cloud C3D vs. C3 Instances