CLOUDPHYSICS

Calculating the Real Costs and Benefits of Migrating to the Public Cloud

How much will it really cost to run your applications in the public cloud, compared to keeping them on-premises? Will you save money or could it actually cost you more? Accurate answers to these questions make all the difference when it comes to deciding when – and whether – to migrate to a public cloud. You can get that accuracy only by Rightsizing.

What is Rightsizing?

Rightsizing is the process you go through to ensure that your VMs are resourced correctly, prior to considering the move to a cloud. The Rightsizing exercise ensures that each VM has adequate resources to do its job, and also ensures that no VM has been provisioned with more resources than it needs.

Why is Rightsizing important for cloud planning?

IT administrators are constantly asked if the enterprise can save money by moving applications to the cloud. True answers to this question can only emerge after considering opportunities to Rightsize each and every VM.

Why is that? It's well known that virtual data center administrators often configure virtual machines (VMs) conservatively, which means they end up with more resources than they ultimately need. While applications running inside underprovisioned VMs are easy to spot (they lack the resources they need to run properly), these overprovisioned VMs often go unnoticed and uncorrected.

Why is that important? All too frequently, IT administrators use those overprovisioned VMs as a measure to size their cloud equivalents when migrating these VMs to the cloud. This can vastly overstate the OpEx costs of moving on-premises workloads to the cloud. Such overstating heavily impacts the cost estimates for running applications in the public cloud, compared to on-premises data centers, thus yielding an inaccurate and lower picture of potential cloud savings.

Key Benefits

- Flows out continuous results, automatically updated in real time
- Enables quick, data-driven decisions and eliminates guessing
- Uses granular, current data from the user's own data center
- Reveals the, verifiable costs of moving each VM
- Produces instant rightsizing scenarios

How can I arrive at the true cost difference between running workloads in the public cloud versus keeping them private?

CEOs and CIOs often turn to their IT teams to answer this highly consequential question: will moving applications to the cloud save money? The answer is that running your applications in a high-performance public cloud data center may save substantial funds, but that answer only becomes apparent when cloud cost estimates rely on accurate resourcing needs to address the following key issues:

- Is this the right time to migrate?
- What are the true costs of the cloud for my workloads?
- Will running workloads in the cloud save money, versus keeping them private?
- Will the cloud enable faster application deployment?
- Could the cloud wind up costing more?

Guesses don't inspire confidence when it comes to estimating the possible cost savings. Only data-driven answers, along with accurate scenario-building capabilities can drive and support on-target decision-making.

Now you have the instrument you need to achieve that data-driven accuracy, using a precise, minute-by-minute comparison of the costs to you in the public cloud versus on-prem costs.

The CloudPhysics Public Cloud Planning Rightsizer

The Public Cloud Planning Rightsizer is CloudPhysics' transformative software solution that applies granular usage data from your own organization to analyze each VM in your data center. The Rightsizer quickly and accurately informs you which service provider instance will be the best fit for each VM in various public clouds. Now IT teams can quickly and easily make data-supported decisions about the costs of running applications in the cloud—based on the actual resource needs of those VMs.

There's no need for risky "gut feelings" or guesses. The Rightsizer delivers granular statistics that reveal the most beneficial decision, and all in near real time. The Public Cloud Planning Rightsizer flows out continuous, automatic results, without need for manual input or additional onsite resources. It's always current and accurate, because the calculator automatically adjusts and reflects changes as they happen.

Key Capabilities and Features

The Public Cloud Planning Rightsizer profiles VM workloads with fine granularity and without bias, allowing users to achieve verifiable insights on the cost difference between on-prem and cloud.

Here's how: The Rightsizer collects resource utilization data from each VM in the data center on a fine-grained basis. Then, it analyzes those data across time, allowing you to discover the resources that each VM actually needs to perform its duties. For example, if an on-premises VM has been configured with 8 vCPUs, but the Rightsizer shows you that it never uses more than 2 vCPUs to run its applications, then you have discovered an opportunity to Rightsize that VM to a smaller instance when you move it to the Cloud, saving money.
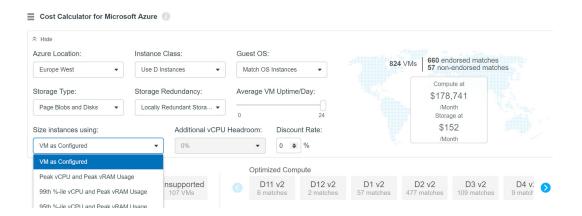
The Rightsizer maps each VM in the entire data center to its best-fitting public cloud instance, whether Azure, AWS or others, so you see the exact costs of running each VM in the cloud you choose to evaluate. Your best decision is easily apparent.

The Rightsizer is ideal for arriving at post-migration runtime costs, because it takes into account all relevant issues. For example, companies often select from a menu of differently sized VM templates when they provision a workload. Typically, they base the selection on gut feeling. So while choosing too small a template is quickly apparent in slowed or unreliable performance, provisioning an application in a template that is larger than needed is often an invisible mistake, leading to oversubscribed VMs—a major money-waster, and especially when those inflated configurations are used as the basis for selecting the cloud instance.
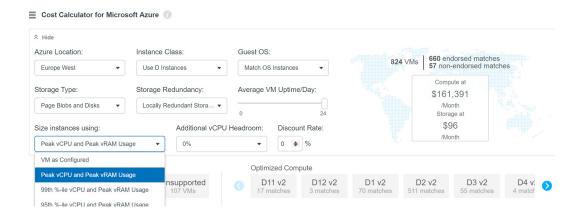
The Public Cloud Planning Rightsizer offers a "go-to" tool for calculating unbiased answers to the key question: "What will it cost to run my VMs in the Cloud?" The Rightsizer:

- **Achieves granular accuracy** with usage data updated every 20 seconds and no roundings or rollups, using CloudPhysics proprietary data collection engine.

- **Keeps resource utilization information forever,** easily available for comparison at a click, because no samples are ever discarded.

- **Informs you of the amount of resources each VM needs for ideal, real-world function,** using easily readable histogram-based scenarios to analyze workloads. You know costs instantly for on-target comparisons.

- **Offers more user options** with multi-cloud applicability, thanks to its unbiased, vendor-neutral analysis capabilities.

- **Eliminates chancy guesswork or estimates** with its verifiable, data-based recommendations.

- **Deploys quickly and easily** with SaaS delivery model, for continuous updating, scenario-building, automated discovery, quick slice-and-dice, and mapping of on-premise intelligence to the cloud.

- **Benefits all levels in the organization.** CIOs and VPs of IT gain objective, data-driven answers to cost-savings questions, while IT admins gain work/effort/time efficiency.
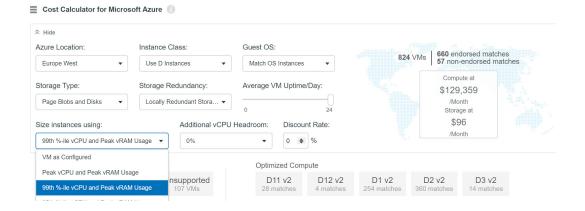
Cloud cost using each VM as configured

Cloud migration at peak CPU utilization (7 day peak)

Cost Calculator for Microsoft Azure

⌃ Hide

Azure Location:
Europe West ▼

Instance Class:
Use D Instances ▼

Guest OS:
Match OS Instances ▼

Storage Type:
Page Blobs and Disks ▼

Storage Redundancy:
Locally Redundant Stora… ▼

Average VM Uptime/Day:
0   24

Size instances using:
Peak vCPU and Peak vRAM Usage ▼

VM as Configured
Peak vCPU and Peak vRAM Usage
99th %-ile vCPU and Peak vRAM Usage
95th %-ile vCPU and Peak vRAM Usage

Additional vCPU Headroom:
0% ▼

Discount Rate:
0 ⇕ %

824 VMs | **660** endorsed matches
57 non-endorsed matches

Compute at
$161,391
/Month
Storage at
$96
/Month

nsupported
107 VMs

Optimized Compute

D11 v2	D12 v2	D1 v2	D2 v2	D3 v2	D4 v:
17 matches	3 matches	70 matches	511 matches	55 matches	4 match

Cloud migration cost using data-driven 99th percentile

Cost Calculator for Microsoft Azure

⌃ Hide

Azure Location:
Europe West ▼

Instance Class:
Use D Instances ▼

Guest OS:
Match OS Instances ▼

Storage Type:
Page Blobs and Disks ▼

Storage Redundancy:
Locally Redundant Stora… ▼

Average VM Uptime/Day:
0   24

Size instances using:
99th %-ile vCPU and Peak vRAM Usage ▼

VM as Configured
Peak vCPU and Peak vRAM Usage
99th %-ile vCPU and Peak vRAM Usage

Additional vCPU Headroom:
0% ▼

Discount Rate:
0 ⇕ %

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$129,359
/Month
Storage at
$96
/Month

nsupported
107 VMs

Optimized Compute

D11 v2	D12 v2	D1 v2	D2 v2	D3 v2
28 matches	4 matches	254 matches	360 matches	14 matches

About CloudPhysics

CloudPhysics provides data-driven insights for smarter IT, delivering unprecedented data center analytics to a broad range of users. CloudPhysics' agile, scalable SaaS solution continuously analyzes customer environments and leverages collective intelligence to yield actionable results that optimize performance, lower costs, reduce risk, and enable smarter business decisions. Headquartered in Santa Clara, CA, CloudPhysics serves thousands of end users worldwide across major industries and supports a robust partner network. For more information, **www.cloudphysics.com**