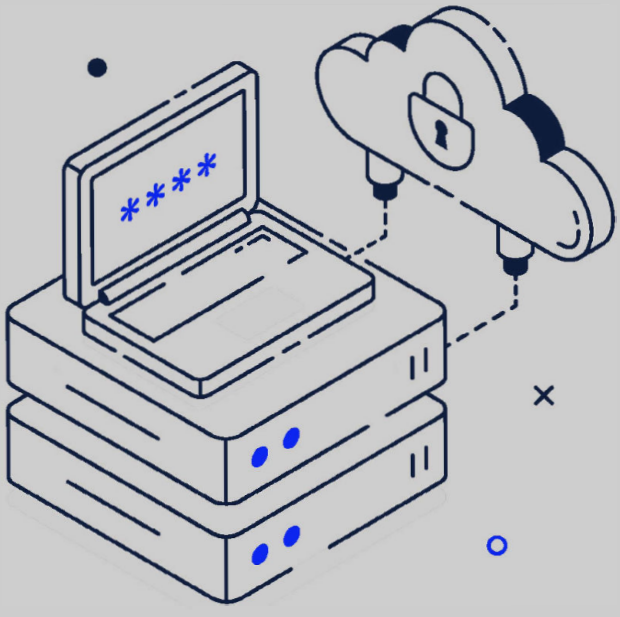
us signal

The Ultimate Cloud Comparison

Unbiased Insights Into Today's Leading Cloud Solutions



Modern business happens in the cloud.

Synergy Research Group data shows Amazon Web Services (AWS) leads the cloud market with a 31% share in Q3 2024, followed by Microsoft Azure (20%) and Google Cloud (13%). Collectively, the "Big Three" control over 60% of the market. But is bigger better? Or, more specifically, should your business rely on these established players to meet the unique needs of your critical workloads?

To answer this, you can't rely on promotional language from marketers aiming to influence your purchasing decisions. What you need is an objective third party that can evaluate the leading cloud technologies and deliver impartial, quantitative results to guide your choice. In other words, you need proof.

That's why we commissioned Cloud Mercato—an independent research firm specializing in the study of the cloud market—to compare the performance and value delivered by leading cloud platforms, including AWS, Google Cloud, Microsoft Azure, Rackspace, Linode, DigitalOcean, and US Signal's OpenCloud®.

The results of the study may come as a surprise: higher name recognition doesn't always translate into a better product. Continue reading to discover how premium performance doesn't require a premium price.

Executive Summary

In approaching this study, Cloud Mercato understood that cloud users seek information on how the leading platforms perform across key dimensions such as performance, scalability and cost. With this in mind, the independent research firm conducted the analysis using synthetic benchmarking.

Synthetic benchmarking is a preferred method of analysis because it offers a controlled environment for precise measurement and comparison. It enables easily reproducible tests for consistent results and allows for targeted testing of specific components or features.

While synthetic benchmarks provide valuable insights, it's important to note they may not perfectly replicate real-world workloads. However, they serve as an excellent foundation for understanding the relative strengths of each platform.

The study reveals that while AWS, Google Cloud, and Azure all perform well in select categories, their smaller OpenCloud® competitor matches or exceeds their performance across most workloads while maintaining an edge in price-to-performance ratio.

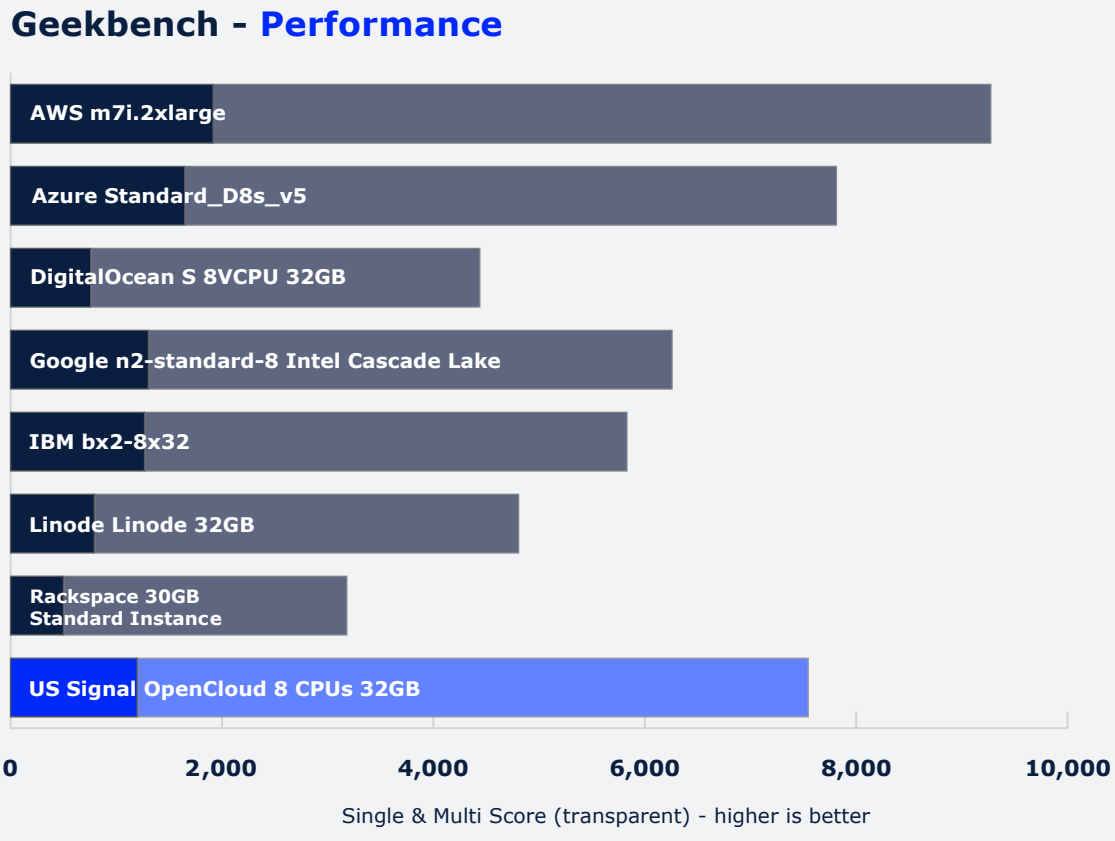
Compute Benchmark Data

The best way to understand how the leading cloud platforms stack up is to analyze compute performance across several key benchmarks. Check out the complete study to see the full analysis. In this ebook, we'll highlight the metrics IT decision-makers care about most: Geekbench 6, sysbench CPU, I/O Operations Per Second (IOPS) and network latency.

GeekBench 6

Geekbench 6 benchmarks cloud platforms by testing both single-core and multi-core performance. It simulates real-world cloud tasks such as data processing, machine learning and backend services for mobile applications. Geekbench 6 provides insights into the raw compute power offered by the different cloud providers being assessed. Its scoring system offers a standardized measure, with higher scores indicating superior performance.

The results of the Cloud Mercato benchmark study show that tech titans AWS and Azure score near the top of the class in nearly every instance type, whether general-purpose, compute-optimized or memory-optimized. However, note that US Signal's offerings are competitive to these larger rivals. The top four results are as follows:

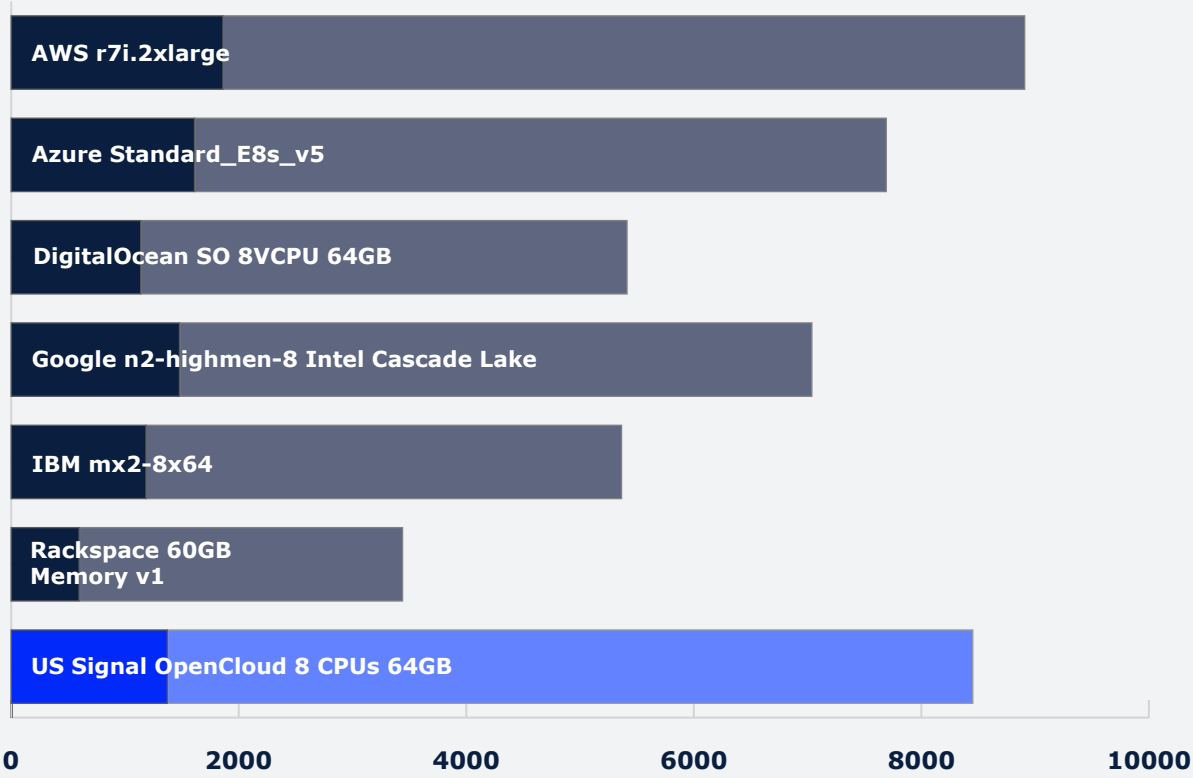


Geekbench - Compute Optimized



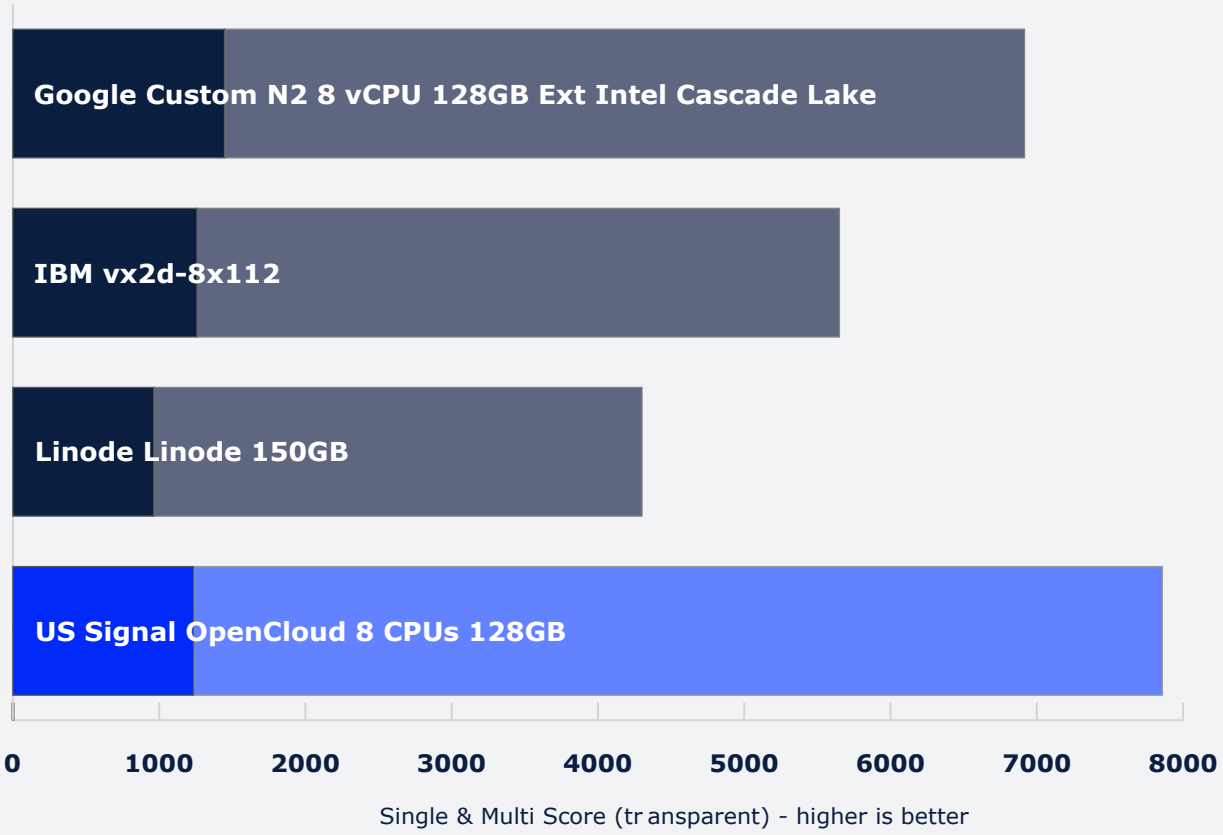
Single & Multi Score (transparent) - higher is better

Geekbench - Memory Optimized



Single & Multi Score (transparent) - higher is better

Geekbench - Extended Memory



Cloud Provider Instance Types

The seven cloud providers included in this study were evaluated across a range of virtual machine types, categorized as:

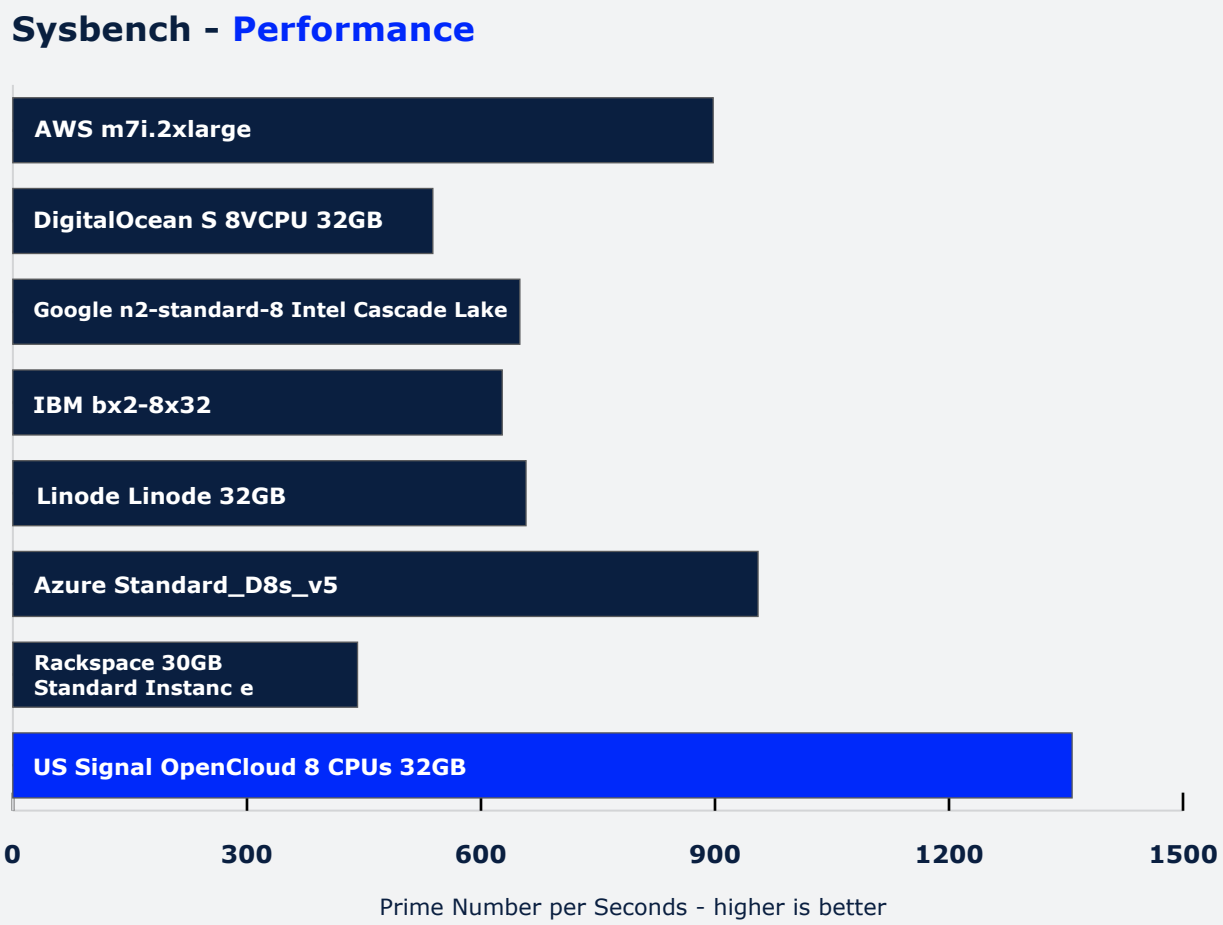
- **General purpose:** Suitable for a wide variety of workloads with a balanced mix of CPU, memory and storage.
- **Compute optimized:** Designed for high-performance computing tasks requiring significant processing power.
- **Memory optimized:** Ideal for applications demanding large amounts of memory, such as in-memory databases and machine learning.
- **Extended memory (where available):** Optimized for specialized workloads with exceptionally high memory requirements.

US Signal's multi-core score surpasses Azure across each test, and even outperforms AWS in the memory-optimized and extended memory instances.

Sysbench CPU

Sysbench CPU is designed to measure the processing power and efficiency of a system's central processing unit. It achieves this by subjecting the CPU to a series of computationally demanding tasks, such as mathematical operations (e.g., integer arithmetic and floating-point calculations) and data processing algorithms.

In this study, Cloud Mercato used the sysbench CPU tool to measure how many prime numbers could be calculated per second. DigitalOcean, Google Cloud, and US Signal performed best in most instances. The top three results are as follows:



Sysbench - Compute Optimized



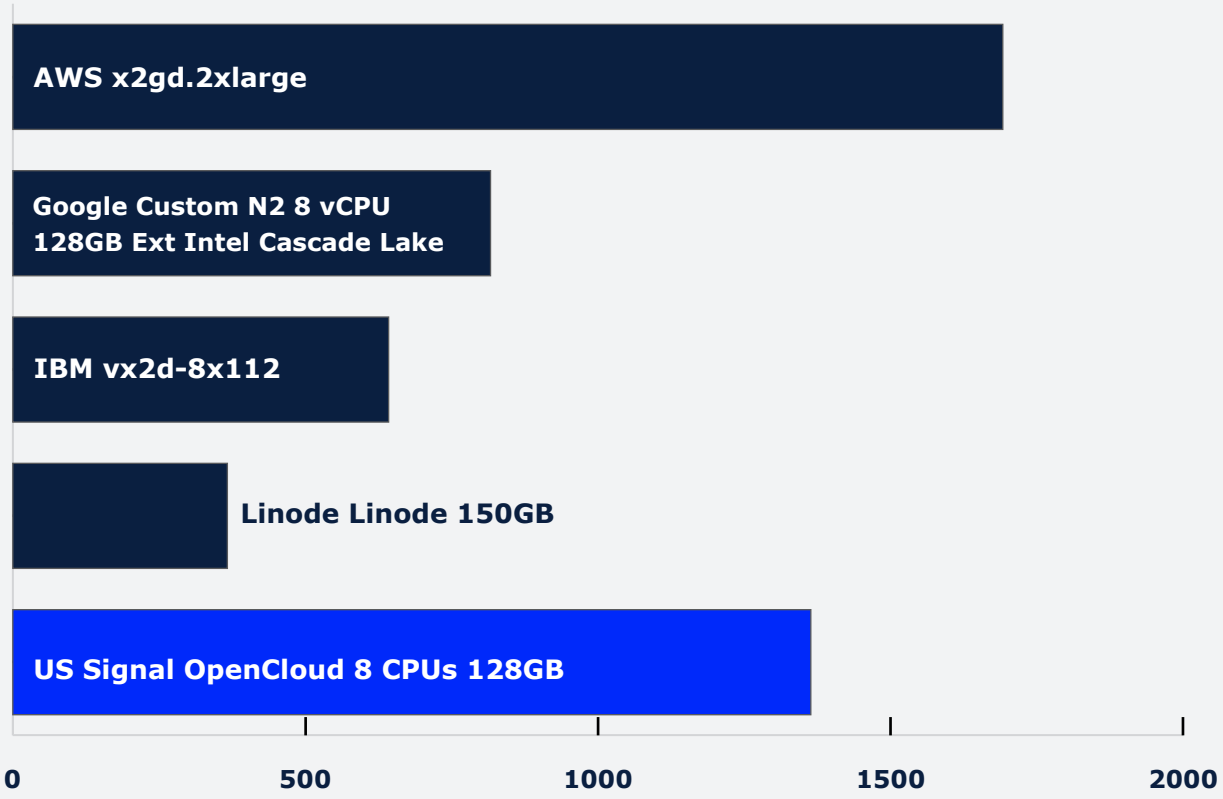
Prime Number per Seconds - higher is better

Sysbench - Memory Optimized



Prime Number per Seconds - higher is better

Sysbench - Extended Memory



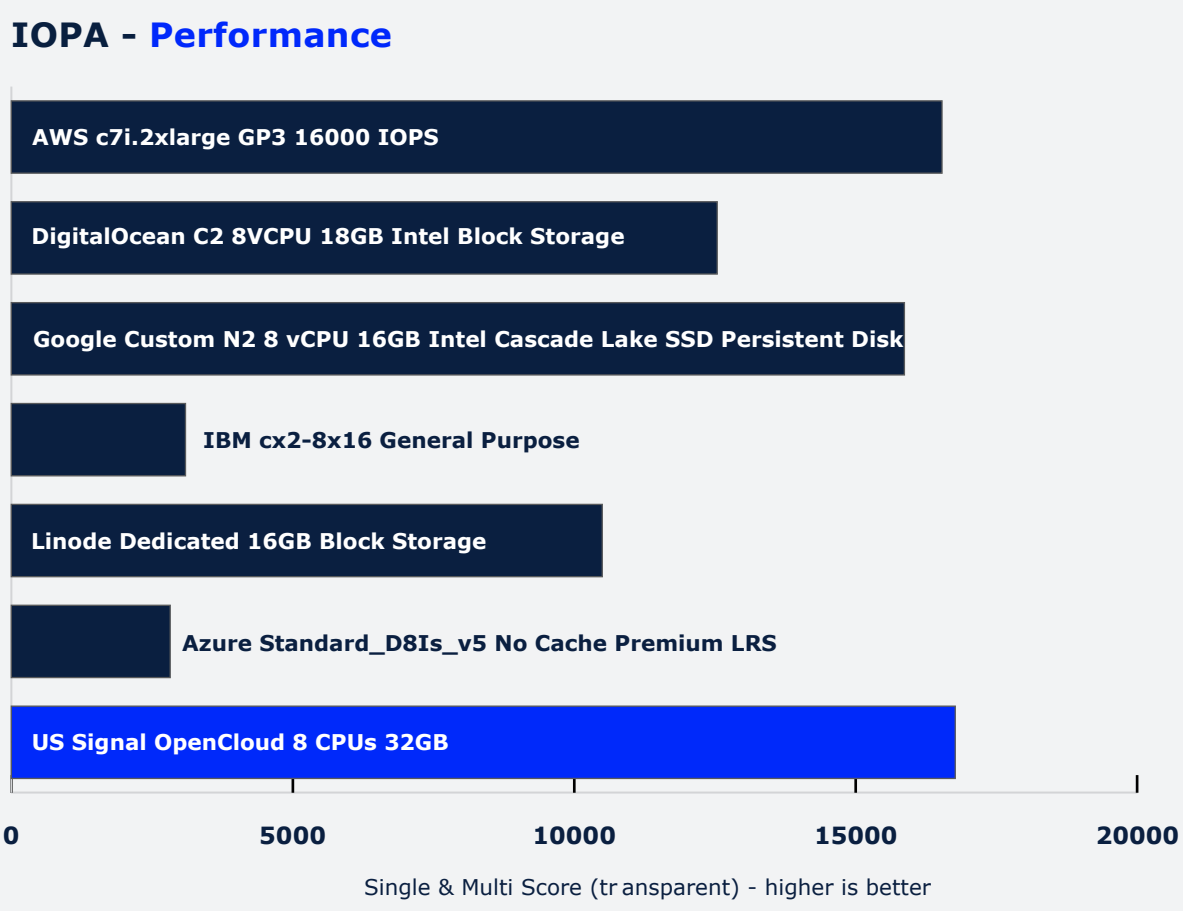
In the memory optimized instance, US Signal calculates 79% more prime numbers per second than the second place competitor, Azure.

IOPS

The I/O Operations Per Second benchmark measures how efficiently a system can perform input and output operations. Specifically, it quantifies the number of input/output operations (reads and writes) a storage device can execute within a single second. The average IOPS provides insights into the speed of a database or any disk-intensive task. High IOPS values translate to faster response times and improved user experiences.

To measure IOPS for this study, Cloud Mercato used the well-known tool Flexible I/O Tester (FIO) with the following configuration:

- 4KB blocks
- Random access
- Direct access to device without filesystems
- Libaio engine
- Number of jobs equal to CPU
- Read then write



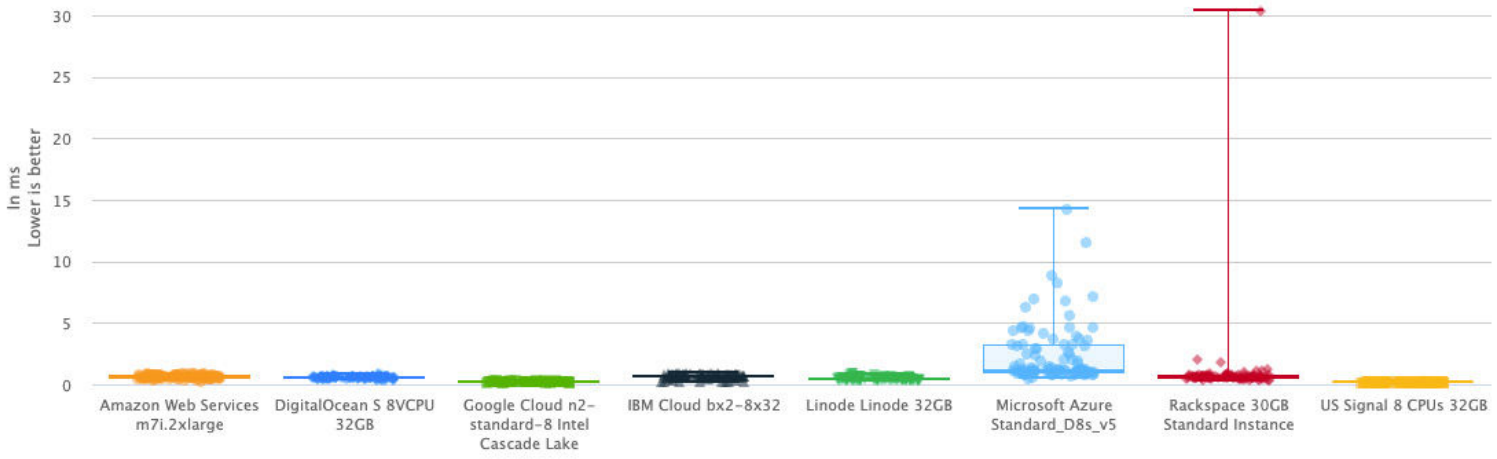
Examining the price/performance ratio reveals which platform is most cost-efficient. In this comparison, US Signal achieved a price/performance score of 181.25, ahead of second-place AWS at 138.69 and third-place Google Cloud at 135.43.

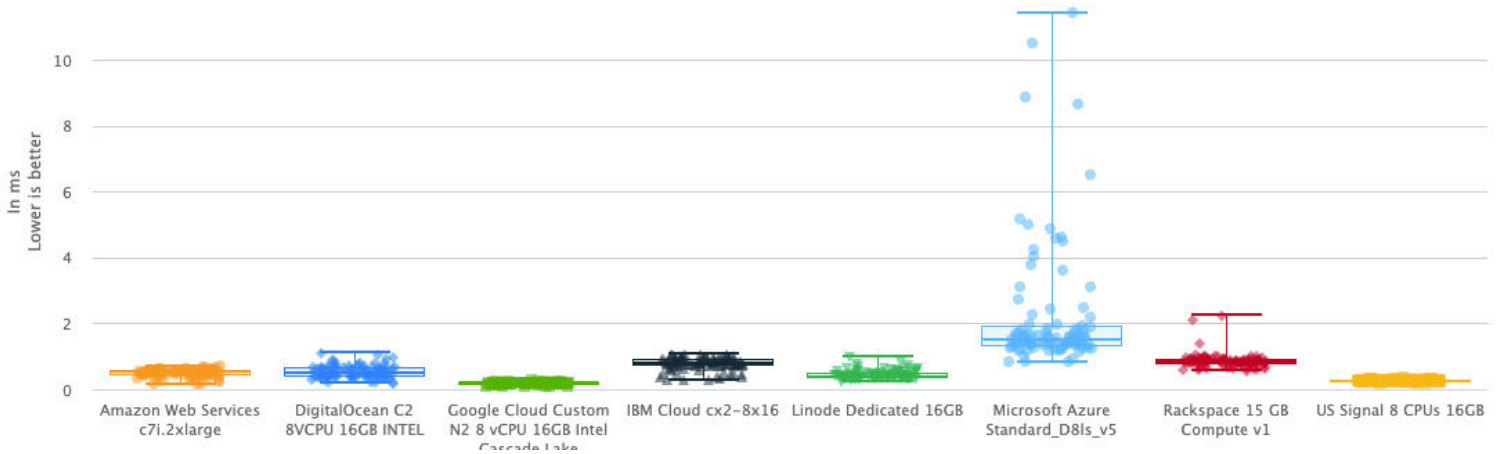
Network Latency

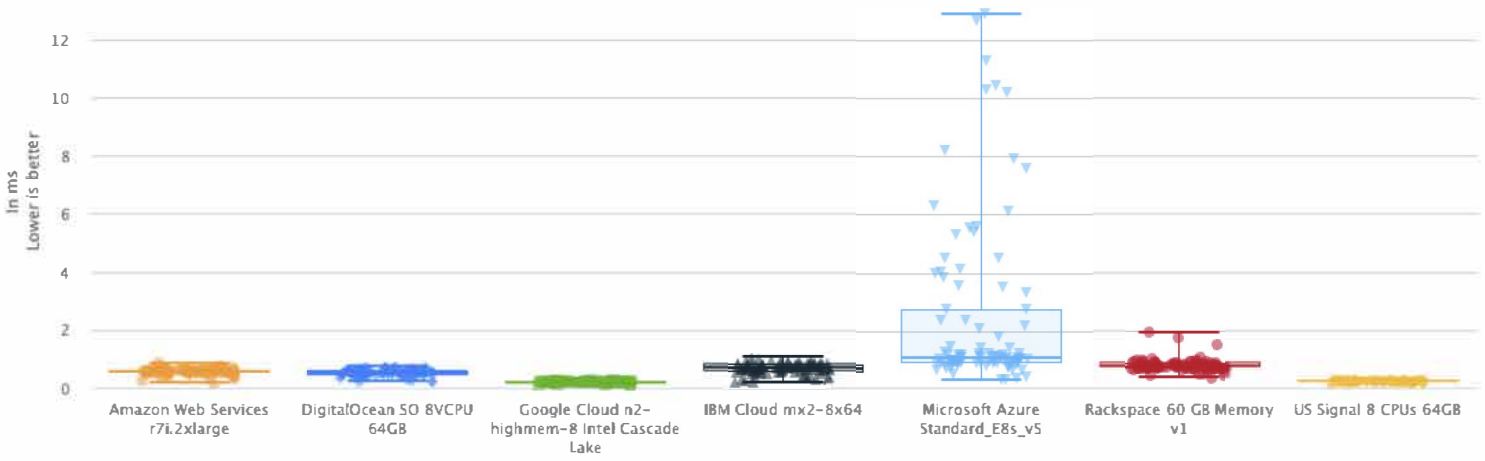
Network latency measures the time it takes for data to travel between two endpoints. A high-performing cloud platform features low latency so real-time applications execute without delays for a smooth user experience.

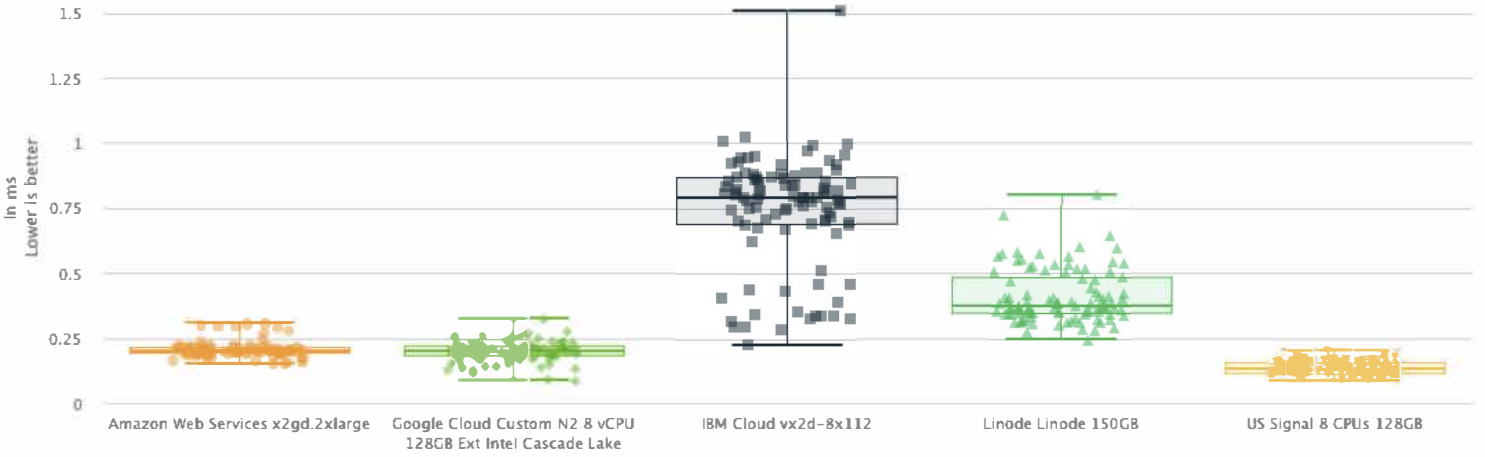
To test network latency in the study, Cloud Mercato used the traceroute tool which measures the time taken for data packets to travel between virtual machines within the same data center. This method delivered precise, repeatable results for an accurate comparison across providers.

When looking at median results, where a lower timeframe equals higher performance, AWS, Google Cloud, and US Signal came out on top. The top four results are as follows:









Google Cloud or US Signal consistently delivered the lowest latency across all instances.

About OpenCloud®

We designed OpenCloud® with customers' top priorities for a cloud platform in mind—specifically performance, cost-efficiency and reliability. The combination of an Apache CloudStack foundation, enterprise-grade engineering and a flexible N+1 infrastructure means clients enjoy a high-performance platform that is affordable and stable for guaranteed uptime. It's particularly attractive for businesses architecting highly available applications.

Drawing on direct input from customers, the platform leverages cutting-edge server and storage technologies, such as all-flash storage and Intel Xeon processors, to ensure maximum efficiency and performance. Each server is equipped with a dedicated 2x100 Gbps network interface card (NIC) for high-speed connectivity and low-latency data processing.

To handle the immense throughput demands, OpenCloud® utilizes an Arista Networks leaf-spine fabric with 100 Gbps port density and multiple 400Gbps links between switches. This design provides ample bandwidth for both converged network and storage traffic so users experience seamless data flows.

Additionally, OpenCloud® incorporates enterprise-grade hypervisors to provide a familiar and robust virtualization layer. Its modular architecture is intentionally designed to scale and adapt to evolving business needs.

Plus, OpenCloud® allows for flexible resource usage without requiring long-term contracts so you can easily adapt to changing business requirements. We provide a self-service portal where you can scale resources on demand without having to go through the hassle of contacting a sales rep. As of the time of writing, OpenCloud® is the only private, open source-based cloud infrastructure platform that also offers flexible resource usage.

Moving Forward

The findings of this study underscore the importance of looking beyond market share and brand recognition when selecting a cloud provider. While the "Big Three" providers—AWS, Microsoft Azure, and Google Cloud—undoubtedly dominate the market, their size and reputation do not always correlate with delivering the best value or performance for every workload.

As the study reveals, US Signal's OpenCloud® offers a compelling alternative. OpenCloud® not only competes with but often surpasses its larger counterparts in critical areas such as processing power, price-to-performance ratio, and network latency. For businesses seeking a cloud platform that balances cost efficiency with high performance, these results highlight why OpenCloud® warrants serious consideration.

Ready to take OpenCloud® for a test drive?
Schedule your free demo today!

