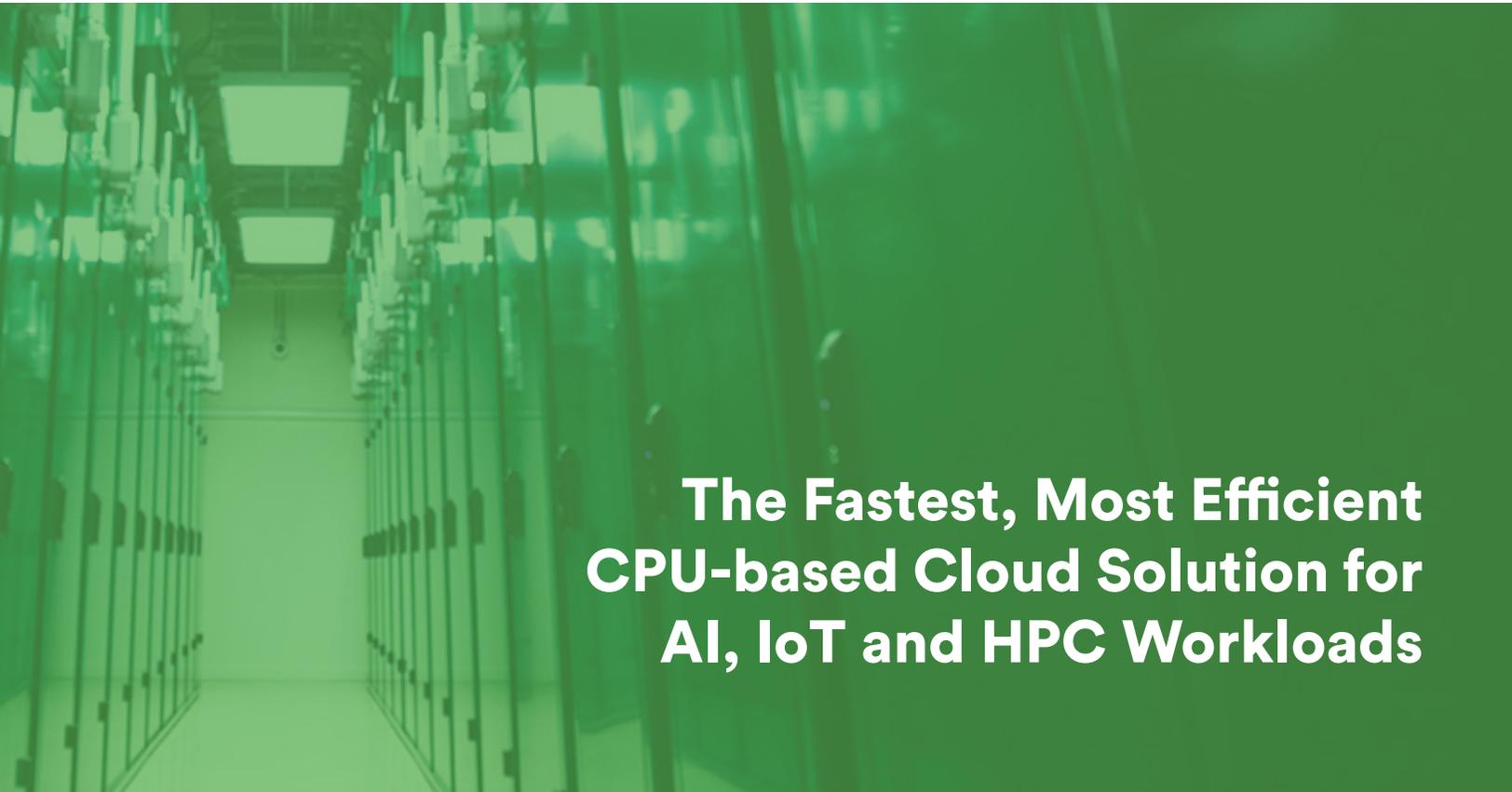




# SCALE CLOUD

## Performance Cloud Hosting



**The Fastest, Most Efficient  
CPU-based Cloud Solution for  
AI, IoT and HPC Workloads**



**SCALE MATRIX**



**Exceptional  
Performance**

# ScaleCloud Enterprise

## Leaving the biggest cloud tradeoffs behind

Data-intensive AI, IoT and HPC workloads requiring multiple parallel processes have always run best on expensive high-end processors or accelerators, such as Graphic Processing Units (GPU). Moreover, when running compute-intensive workloads on cloud-based solutions, businesses and research organizations have had to accept tradeoffs, many of which were problematic. For example, the age of processors and other hardware in cloud environments is often incompatible with the latest applications or high energy expenditure levels that cause concerns related to environmental values. In other cases, certain aspects of cloud solutions have simply been frustrating to deal with. This has limited flexibility for customized cloud environments to support business needs or trouble finding right-size billing models or support.

ScaleCloud Enterprise is designed to address the common tradeoffs in cloud environments for compute-intensive workloads. Featuring top-of-the-line Intel® processors and HPE servers housed in groundbreaking cabinet technology, ScaleCloud Enterprise is an evolutionary step forward in cloud offerings:

- Provides the fastest, highest performance “green” cloud option available on the market
- Enables customization of and complete control over hosted cloud environment
- Delivers multiple support profiles and billing models

## The right hardware for AI, IoT and HPC workloads

For many years, cost-effective options for running intensive computational applications have been few and far between. The choices have been between high-end CPUs or GPUs, and GPUs have become the go-to choice for many types of workloads. Yet GPUs have never been ideal for a variety of reasons. Part of the problem is that the GPU's outstanding performance comes at a steep cost. Not only are the high-end GPUs themselves more expensive than comparable CPUs, but you also need knowledgeable staff to use them successfully, which adds to the costs. The lifecycle for a heavily used GPU is also much shorter than that of a CPU and is often measured in months versus years.

What's more, only a few specialized cloud providers actually include GPUs in their platforms.

ScaleCloud Enterprise is a more cost-effective CPU-based solution that delivers the speed and performance most businesses need for running intensive computational applications. Powered by breakthrough Intel® Xeon® Scalable Platinum Processors running on HPE Synergy 12000 frames, ScaleCloud Enterprise is ideal for AI, real-time analytics, IoT and many types of HPC workloads.



# Intel® Xeon® Platinum Processors

- Deliver higher per-core performance and scalability on up to 28 cores
- Run at a base 2.7GHz with turbo-limit scale capacity up to 4GHz
- Provide 50% more memory bandwidth and capacity versus previous generation of processors designed for memory-intensive workloads
- Enable consolidation of more servers on less hardware
- Include integrations and advancements that drive game-changing improvements, including:
  - AVX-512 instructions for accelerating scientific simulations, financial analytics, AI and other data-intensive workloads
  - Integrated Omni-Path Architecture for HPC workload optimization

## HPE Synergy

- Utilizes a 10U chassis with 12 nodes each
  - 56 core processors per node with 1.5 TB of RAM per node, for a total of 72TB of RAM and 2688 physical cores per cabinet
- Delivers 40GB of networking in each chassis, with interconnections between chassis supporting up to 100GB per second
- Provides massive power and redundancy with 6 x 2650 hot plug power supplies

ScaleCloud storage is provided via SAN raid clusters that range from a high-producing all flash cluster to a deep and dense object tier.

- ✓ **All-Flash Tier** - Gain the best speed and performance for performance-sensitive workloads with top-tier IOP delivery, triple+ parity and sub-millisecond response time. Optimized for database, AI and IoT workloads.
- ✓ **Performance-Optimized Tier** - Improve production delivery for end-user experience. Optimized for operating system workloads, this tier is ideal for most virtual machines requiring standard IOP processing.
- ✓ **Archival Tier** - Easily access non-critical storage data for non-production workloads. Block configuration and low IOPs makes this tier an ideal location for long-term storage needs.
- ✓ **Object Tier** - Meet compliance requirements with the ability to choose from one to three copies of your data, along with the location in which the data is stored. Definable cloud storage zones in this 100% S3-compatible tier enable you to choose the most appropriate configuration for business needs and regulatory requirements.

## ScaleCloud Highlights

### PERFORMANCE

- ✓ Workload-optimized Intel® Xeon® Scalable processors
- ✓ Class-leading power density, energy efficiency and security
- ✓ Hardware age transparency and guarantees

### FLEXIBILITY

Mix and match:

- ✓ Contract, hourly and burstable billing options
- ✓ Platinum, Gold and Bronze support options

### CUSTOMIZATION

- ✓ VMware custom-built backbone
- ✓ API command optimized for enhanced performance and HA

It all adds up to outstanding performance and scalability in a highly cost-effective cloud solution. ScaleMatrix even backs up the ScaleCloud offering with 100% guarantees for resource availability. Moreover, the typical age of x86 hardware in more than 75 percent of data centers is more than four years old.<sup>1</sup> To help you ensure compatibility with newer applications while optimizing security and performance, ScaleMatrix guarantees that the hardware in ScaleCloud Enterprise is refreshed every two years.

The ScaleCloud platform will have availability in US-West, US-Central, and US-East geographic locations.

## Stunning levels of density and efficiency; industry-leading security

The hardware configurations in many cloud data centers can lead to a host of inefficiencies and security issues. Poor temperature management and exposed power and data connections are all too common. DDC is different.



ScaleMatrix hardware configurations keep energy usage and costs in check while maximizing the security of your cloud-based environment. The ScaleCloud offering is unique because it leverages proprietary ScaleMatrix Dynamic Density Control™ (DDC) cabinets, which reduce costs by passing along savings from a smaller footprint and decreased energy usage. Traditional data centers can handle about 15kW in a four-post rack. The innovative design and methods used in ScaleMatrix Dynamic Density Control™ cabinets enables us to support up to an industry-leading 52kW per rack.

# Dynamic Density Control<sup>®</sup> cabinet technology

- Use an innovative liquid-air hybrid system to increase power and cooling efficiencies, significantly reducing your overall energy use and costs
- Automatically adjust to ensure maximum density support for IT loads while maintaining maximum efficiency
- Deliver a Power Usage Effectiveness (PUE) of 1.11 or lower, putting ScaleMatrix in the top 1% of data centers globally from both a power density and efficiency perspective (the 2018 industry PUE average was 1.58)<sup>2</sup>
- Optimize security by containing data and power connections within the cabinets

Moreover, from a security standpoint, nothing is left to chance in the ultra-secure ScaleCloud data center.

## Physical security includes:

- ✓ 24/7/365 armed security presence
- ✓ Gated Perimeters with 24/7/365 Surveillance
- ✓ Two Factor Authentication (2FA) Access Control
- ✓ Cabinet Level Biometric Identity Validation
- ✓ Extensive Digital Surveillance

## Digital security includes:

- ✓ Network Wide DDoS Mitigation
- ✓ Network Wide Anti-Malware Scanning
- ✓ Next Generation Predictive Firewall with Global SOC Registry
- ✓ Intrusion Detection / Protection Services



# Unmatched customization and control

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Compared to many cloud solution options, ScaleCloud gives you more control over your environment. It not only allows you to manage your *own* firewalls, switches and load balancers, but also API integrations and automation.

## VMware virtualization platform

ScaleCloud relies on a customized operating-system-agnostic VMware backbone, providing optimized performance and choice-driven delivery. With built in AI and the power to deploy an array of customized features, ScaleCloud's VMware platform helps remove the strain of finding a solution that can do it all.

- Choose from an extensive OS and application library
- Take advantage of cluster segregation with a mix of vDC and hardware package choices
- Gain the control and flexibility you need for your unique processes

The ability to write commands and easily control your cloud environment enables you to more easily address the demands of your business.

## Scenarios

### AI workloads: (Bursting and Flexible Billing)

Businesses running today's AI workloads especially when utilizing machine learning need bursting capability for their on-demand needs. When the time comes to 'crunch the data', developers can't wait for new resources to arrive and deployment of extra resources can be costly.

ScaleCloud enables businesses with the need to burst past their traditional envelope of resource flexibility to access these resources on-demand. Need these additional resources for just the hour or the remainder of the day, ScaleCloud covers flexible billing models to meet any demand.

## HPC workloads: (Extreme Compute and Age Guarantee)

HPC workloads require high-end processing units and units in the most recent releases to support their workloads. Mid-range and older processors can cause workload usability issues. Today's traditional cloud delivery lacks the best compute on the market and commitment to the age of the processor.

ScaleCloud Enterprise solves these issues offering the best in class of processor to handle high-end HPC workloads and an age guarantee to ensure you are never running on out of date processors again. These benefits happen seamlessly behind the scenes with no environment interruption.

## IoT workloads: (Advanced API Communication)

IoT workloads demand consistent change and for environmental needs that change as rapidly as they do. While having high compute and the flexibility to keep up with these demands are important, the ability to also write your code into your hypervisor backbone become key to the change demand.

If your business has already mastered IoT orchestration, ScaleCloud provides the extra advantage of APIs in your virtualization backbone. That means your hypervisor can scale to match the demands of your IoT workloads, delivering the results you need.

# Choices that line up with your business needs

When it comes to support and billing options, most cloud providers offer either/or options. Either you buy support hours or you opt for no support. Either you sign a contract for a bucket of resources or you are billed hourly.

ScaleCloud provides multiple support profiles and billing models, and you can mix and match the options based on business needs. Our Platinum support offering includes everything you need to be successful in the cloud, including full onboarding assistance and 24/7/365 cloud support. Or, if you have support staff, you could choose guided onboarding with 8x5 cloud

support and emergency access support, or standard onboarding with minimal assistance, depending on experience levels and workloads.

Budgeting for ScaleCloud is also easy thanks to a straightforward billing model; basic charges are billed per GB of RAM and the costs per GB of RAM increase by straight percentages based on the support profile and billing model you choose. In addition to standard Contract and Hourly rates, you can also choose a Burstable billing model, which gives you a discounted hourly rate for GBs or RAM used on top of your expected monthly average.



## ScaleCloud Enterprise at a glance

- Lives on HPE Synergy powered by Intel® Xeon® Scalable 8280M processors
- 2.7GHz Base scalable to 3.8GHz
- DDR4
- Processor Age Guarantee: 2 years or fewer

Support Profiles		
Platinum	Gold	Bronze
<ul style="list-style-type: none"> <li>✓ Full onboarding implementation/transfer package 24/7/365 Cloud Support</li> <li>✓ Platinum Plus+ Support: Upgrade to 8x5 Remote Onsite Support</li> <li>✓ Backups: 30-day backup retention for all VMs</li> <li>✓ DR: Nightly offsite SAN replication</li> <li>✓ RTO: 24 hour (upgradeable)</li> <li>✓ DDOS Mitigation: 10GB</li> <li>✓ Anti-Virus: Up to 25 ESET licenses</li> </ul>	<ul style="list-style-type: none"> <li>✓ Guided onboarding</li> <li>✓ Support: 8x5 Cloud Support</li> <li>✓ Emergency Access Support</li> <li>✓ Backups: 5-day backups</li> <li>✓ DDOS Mitigation: 5GB</li> <li>✓ Anti-Virus: Up to 10 ESET licenses</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard onboarding with 1hr project manager access at launch</li> <li>✓ Video walkthroughs</li> <li>✓ DDOS Mitigation: 1GB</li> <li>✓ No additional services or bandwidth included</li> </ul>
Billing Models		
Contract	Burstable	Hourly
<ul style="list-style-type: none"> <li>✓ 1+ year commitment</li> <li>✓ Bucket of resources</li> </ul>	<ul style="list-style-type: none"> <li>✓ 1+ year commitment</li> <li>✓ Bucket of resources</li> <li>✓ Burst above current contract at a discounted hourly rate</li> </ul>	<ul style="list-style-type: none"> <li>✓ No commitment</li> <li>✓ Hourly charge for use of resources</li> </ul>

# Conclusion

## ScaleCloud is the most performant cloud available

Striking the right balance of performance and cost savings for data-intensive workloads in the cloud doesn't have to involve giving up control of your hosted environment or support-related headaches. By combining state-of-the-art hardware from Intel and HPE in our innovative DDC cabinets, ScaleCloud is in the vanguard of performance cloud offerings. An open infrastructure approach makes it easier to manage and run your most important workloads, and flexible support and pricing options help simplify onboarding while optimizing costs as business needs change.

## Learn More

Have questions about ScaleCloud?

Call us at 888-349-9994

Email us at [info@scalematrix.com](mailto:info@scalematrix.com)

Ready to get started?

Visit the ScaleCloud web page at:

<https://www.scalematrix.com/scalecloud>

## About ScaleMatrix

ScaleMatrix delivers colocation, cloud, backup, disaster recovery, and professional support from national high-density data centers that leverage the company's future-proof Dynamic Density Control™ cabinet enclosure platform. With power density and efficiency significantly impacting IT costs, these specialized data centers enable ScaleMatrix to deliver competitively priced high-density colocation and high-performance cloud hosting which provide significant differentiation in today's service provider market. By leveraging our innovation and technology, ScaleMatrix clients gain a competitive edge and can scale more efficiently as their business grows. With our human touch support available 24/7/365, clients receive the best US-based service any time, any day.



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Performance

<sup>1</sup> Voice of the Enterprise: Servers and Converged Infrastructure, Budgets and Outlook 2016, 451 Research.

<sup>2</sup> Uptime Institute's datacenter survey, Part 1: Outages, PUE, edge trends; 451 Research; June 2018.