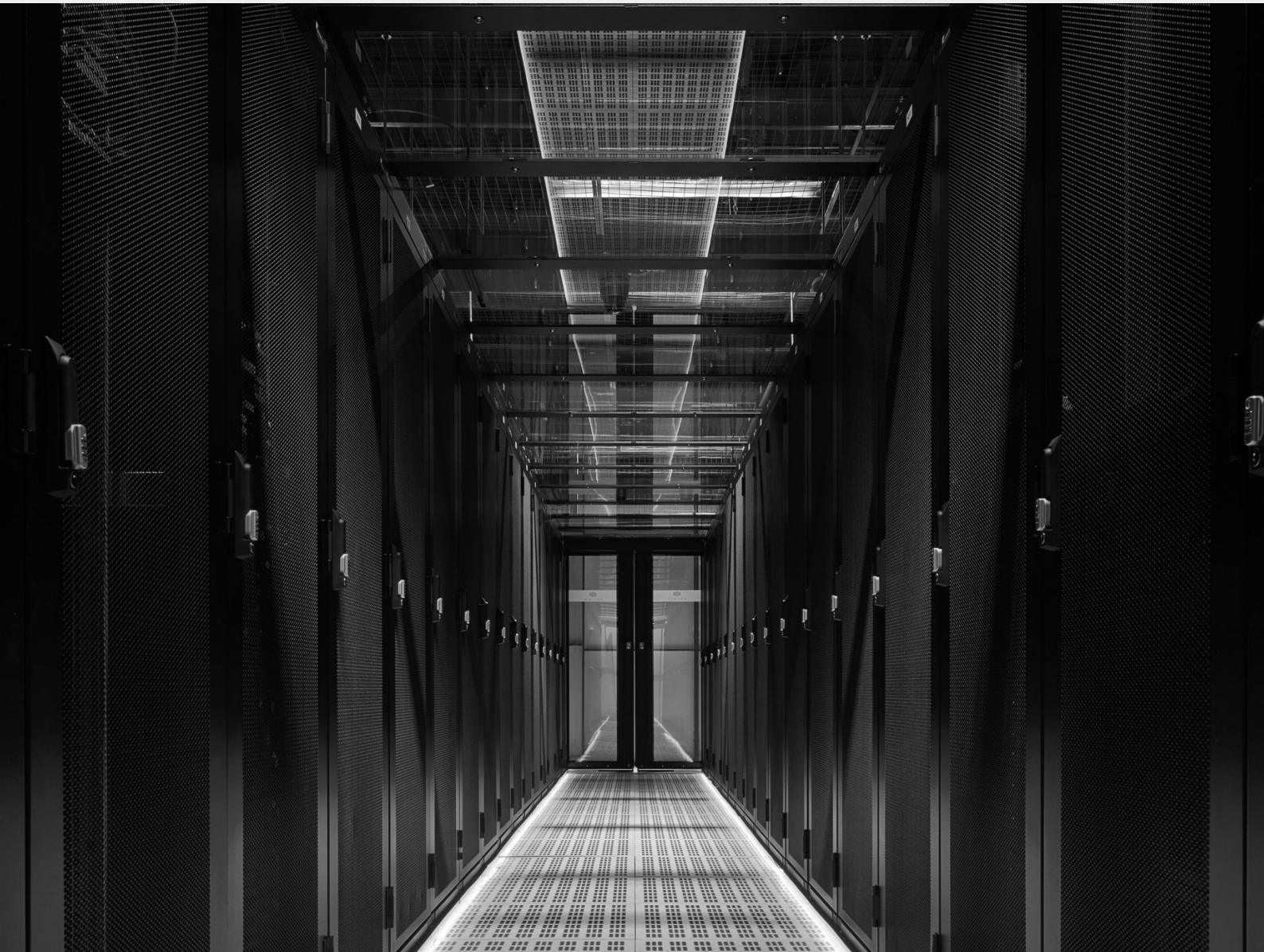
Stackscale
Grupo Aire

Private Cloud

The advantages of virtualization, with dedicated hardware's guarantees and direct access to specialized technical support.



Resources of exclusive use by the customer

Our IaaS offering tries to combine **the best of the classic computing world with the most innovative principles of the cloud era**, delivred at a fair price.

With Stackscale's Private Cloud solutions, the most important resources are of exclusive use by the customer and therefore **highly protected** against any activities performed by neighboring customers, both in security, privacy and performance guarantee terms.

Our current server line is **powered by the most efficient Intel® Xeon® Scalable processors**. Based on the latest Cascade Lake microarchitecture from Intel®; the first one to introduce in-hardware mitigations for the notorious Meltdown and Spectre vulnerabilities.

Our solutions enjoy **a bottleneck-free oversized network** that connects every single physical computing node through 4x10 G bonded connections to different access switches. Every network layer is redundant from the core to the access with virtually no Single Point of Failure (SPOF-less) — and the same principle applies to the network storage.

Computing nodes start at 128 GiB of RAM and 12 physical cores, and go up to 768 GiB of RAM and 52 physical cores. They are backed up with hot spare units that are ready to take over the workload in case of a physical node failure.

Additionally, the most critical environments can be replicated between Stackscale's data centers to protect them against a data center major failure and catastrophes.

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Targeted to medium and large consumers of computing, storage and network resources. For instance:

- Web/app hosting providers
- eCommerce solutions providers
- Managed services
- Social networks
- High-traffic web portals
- VoIP providers
- Digital press
- Big Data
- Financial services
- IaaS, PaaS and SaaS providers

- The best quality, features and cost ratio.
- 24/7 specialized technical support.
- High-Availability by SLA.

Key features differentiating Stackscale

Predictable performance

Our Private Cloud environments are composed of dedicated computing nodes, dedicated and isolated networks and redundant NAS. By combining these three main components, **customers are not affected by other customer activities**; thus avoiding the noisy neighbor effect and enjoying a predictable computing performance at all times.

Resiliency and redundancy

Anything within our infrastructure that can be redundant, it is. There are 2 traditional SPOFs in highly redundant environments, the data center as a whole and the node itself and its access switch. The latter is traditionally solved at the application or virtualization layer and implies setting up spare nodes to handle the job of a potential failure.

We also provide, at no extra cost, redundancy at the switching level by using multi-chassis access switches, as well as at the node level with an **Automatic Node Failover System**, which is part of our Automation and Monitoring platform. This ensures less than 20 minutes of downtime in the event of a node's hardware failure. In addition, we provide data center redundancy at an extra cost.

Security

Stackscale's platform has been designed with security in mind. We have put diverse measures in place to reach almost the same security level that a completely isolated traditional environment could have.

Key features differentiating Stackscale

Transparency

As we host mission-critical applications, we strongly believe that our **customers must know all the relevant details about their infrastructure**, as opposed to delivering services in the cloud that are just supposed to work. So, our customers know:

- the details about the hardware their applications are running on,
- the data centers where their environments are physically located,
- the network equipment and topology, and any other relevant information.

Furthermore, we offer **freedom to our customers by using virtualization standards and open systems**, easing their migration to us and also enabling them to change provider at any time.

Pay as you Grow

Despite the fact that a Private Cloud environment can't feature a complete Pay as you Go approach due to its complexity, our pricing structure maintains a pay per use model wherever it is possible and aims to be **straightforward in the most complex solutions**.

Flexibility

Many of our customers can build their platforms around our current portfolio, but some of them need special setups. We never say 'no' to a specific ad-hoc setup unless we believe it doesn't meet our quality standards.

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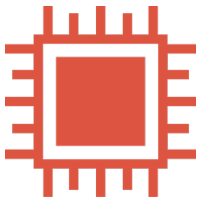
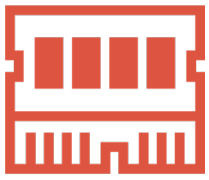
Computing nodes

Technical specifications

Computing nodes host the Virtual Machines of any cluster and feature fast DRAM, CPU/FPU power, fast and redundant network connections and local ephemeral storage. Each node model shares the same hardware features: RAM size and speed, CPU type, network link speed, etc. Nodes will be located in a specific data center or data center group as defined in the service order.

Currently, six different nodes can be ordered: Node 128 M, Node 192 C, Node 384 M, Node 384 C, Node 768 M and Node 768 C.

Technical specifications

CPU

Stackscale's computing nodes are powered by Intel ® Xeon® Scalable Processors. Besdides, specific processor models can be ordered subject to availability.

DRAM

Each model's name determines the equipped amount of RAM, that is 128, 192, 384 and 768 GB of DDR4 or faster DRAM. RAM oversubscription is possible though not recommended for mission-critical platforms.

Network uplink

Each computing node is provided with four Ethernet 10 G ports that are connected to two different multi-chassis access switches. Storage traffic is isolated from the rest of the communications by using two bonded interfaces. This configuration allows traffic up to 20 Gbps with the storage network, and another 20 Gbps shared among the rest of private and public networks.

Local storage

Nodes are provided with a minimum of 2x1 TB ephemeral RAID-1 SSD storage. Upon request, nodes can be populated with up to 8 non-ephemeral local disks (SATA, SAS HDD/SSD; NVMe supported in some computing nodes). It is important to remark that non-ephemeral local storage is not covered by the SLA as it cannot automatically recover after a severe hardware failure.

Node 128 M

Memory optimized

Node 128 M is one of Stackscale's memory optimized computing nodes. It features **128 GiB of RAM** and is powered by 2nd generation Intel® Xeon® Scalable Processors (formerly Cascade Lake).

Server

Dell PowerEdge®

CPU

1x Intel® Xeon® Silver 4214R

~96-192 virtual CPUs

RAM

128 GiB RAM

Local storage

2x 1 TB SSD (exclusively used by the hypervisor in virtualized nodes and for customer use in bare-metal nodes).

NVRAM RAID

SSD Support

Up to 8 additional SATA/SAS local storage disks can be installed.

Network

40 Gbps in redundant MLAG: 20 Gbps storage and 20 Gbps private interconnection and Internet access.

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Intel® Xeon®
Silver 4214R

CPU specifications

12 cores

24 threads

2,40 GHz base speed

3,50 GHz turbo speed

16.5 MB cache

2 UPI links

100 W TDP

Memory specifications

1 TB maximum capacity

DDR4-2400

Up to 6 memory channels

ECC memory supported ‡

- Direct access to 24/7 technical support.
- State-of-the-art data centers in Europe.
- 99,90% Availability by SLA.

Node 192 C

CPU optimized

Node 192 C is one of Stackscale's CPU optimized computing nodes. It features **192 GiB of RAM** and is powered by 2nd generation Intel® Xeon® Scalable Processors (formerly Cascade Lake).

Server

Dell PowerEdge®

CPU

1x Intel® Xeon® Gold 6208U

~128-256 virtual CPUs

RAM

192 GiB RAM

Local storage

2x 1 TB SSD (exclusively used by the hypervisor in virtualized nodes and for customer use in bare-metal nodes).

NVRAM RAID

SSD Support

Up to 8 additional SATA/SAS local storage disks can be installed.

Network

40 Gbps in redundant MLAG: 20 Gbps storage and 20 Gbps private interconnection and Internet access.

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Intel® Xeon®
Gold 6208U

CPU specifications

16 cores

32 threads

2,90 GHz base speed

3,90 GHz turbo speed

22 MB cache

0 UPI links

150 W TDP

Memory specifications

1 TB max. capacity

DDR4-2933

Up to 6 memory channels

Intel® Optane™ DC persistent memory and ECC memory supported ‡

- Direct access to 24/7 technical support.
- State-of-the-art data centers in Europe.
- 99,90% Availability by SLA.

Node 384 M

Memory optimized

Node 384 M is one of Stackscale's memory optimized computing nodes. It features **384 GiB of RAM** and is powered by 2nd generation Intel® Xeon® Scalable Processors (formerly Cascade Lake).

Server

Dell PowerEdge®

CPU

2x Intel® Xeon® Silver 4214R

24 real cores (48 threads via HT)

~192-384 virtual CPUs

RAM

384 GiB RAM

Local storage

2x 1 TB SSD (exclusively used by the hypervisor in virtualized nodes and for customer use in bare-metal nodes).

NVRAM RAID

SSD Support

NVMe Support

Up to 8 additional SATA/SAS/NVMe U2 local storage disks can be installed.

Network

40 Gbps in redundant MLAG: 20 Gbps storage and 20 Gbps private interconnection and Internet access.

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Intel® Xeon®
Silver 4214R

CPU specifications

12 cores

24 threads

2,40 GHz base speed

3,50 GHz turbo speed

16.5 MB cache

2 UPI links

100 W TDP

Memory specifications

1 TB maximum capacity

DDR4-2400

Up to 6 memory channels

ECC memory supported ‡

- Direct access to 24/7 technical support.
- State-of-the-art data centers in Europe.
- 99,90% Availability by SLA.

Node 384 C

CPU optimized

Node 384 C is one of Stackscale's CPU optimized computing nodes. It features **384 GiB of RAM** and is powered by 2nd generation Intel® Xeon® Scalable Processors (formerly Cascade Lake).

Server

Dell PowerEdge®

CPU

1x Intel® Xeon® Gold 6248R

~192-384 virtual CPUs

RAM

384 GiB RAM

Local storage

2x 1 TB SSD (exclusively used by the hypervisor in virtualized nodes and for customer use in bare-metal nodes).

NVRAM RAID

SSD Support

Up to 8 additional SATA/SAS local storage disks can be installed.

Network

40 Gbps in redundant MLAG: 20 Gbps storage and 20 Gbps private interconnection and Internet access.

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Intel® Xeon®
Gold 6248R

CPU specifications

24 cores

48 threads

3,00 GHz base speed

4,00 GHz turbo speed

35.75 MB cache

2 UPI links

205 W TDP

Memory specifications

1 TB max. capacity

DDR4-2933

Up to 6 memory channels

Intel® Optane™ DC persistent memory and ECC memory supported ‡

- Direct access to 24/7 technical support.
- State-of-the-art data centers in Europe.
- 99,90% Availability by SLA.

Node 768 M

Memory optimized

Node 768 M is one of Stackscale's memory optimized computing nodes. It features **768 GiB of RAM** and is powered by 2nd generation Intel® Xeon® Scalable Processors (formerly Cascade Lake).

Server

Dell PowerEdge®

CPU

2x Intel® Xeon® Gold 6230R

52 real cores (104 threads via HT)

~416-768 virtual CPUs

RAM

768 GiB RAM

Local storage

2x 1 TB SSD (exclusively used by the hypervisor in virtualized nodes and for customer use in bare-metal nodes).

NVRAM RAID

SSD Support

NVMe Support

Up to 8 additional SATA/SAS/NVMe U2 local storage disks can be installed.

Network

40 Gbps in redundant MLAG: 20 Gbps storage and 20 Gbps private interconnection and Internet access.

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Intel® Xeon®
Gold 6230R

CPU specifications

26 cores

52 threads

2,10 GHz base speed

4,00 GHz turbo speed

35.75 MB cache

2 UPI links

150 W TDP

Memory specifications

1 TB max. capacity

DDR4-2933

Up to 6 memory channels

Intel® Optane™ DC persistent memory and ECC memory supported ‡

- Direct access to 24/7 technical support.
- State-of-the-art data centers in Europe.
- 99,90% Availability by SLA.

Node 768 C

CPU optimized

Node 768 C is one of Stackscale's CPU optimized computing nodes. It features **768 GiB of RAM** and is powered by 2nd generation Intel® Xeon® Scalable Processors (formerly Cascade Lake).

Server

Dell PowerEdge®

CPU

2x Intel® Xeon® Gold 6248R

48 real cores (96 threads via HT)

~384-768 virtual CPUs

RAM

768 GiB RAM

Local storage

2x 1 TB SSD (exclusively used by the hypervisor in virtualized nodes and for customer use in bare-metal nodes).

NVRAM RAID

SSD Support

NVMe Support

Up to 8 additional SATA/SAS/NVMe U2 local storage disks can be installed.

Network

40 Gbps in redundant MLAG: 20 Gbps storage and 20 Gbps private interconnection and Internet access.

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Intel® Xeon®
Gold 6248R

CPU specifications

24 cores

48 threads

3,00 GHz base speed

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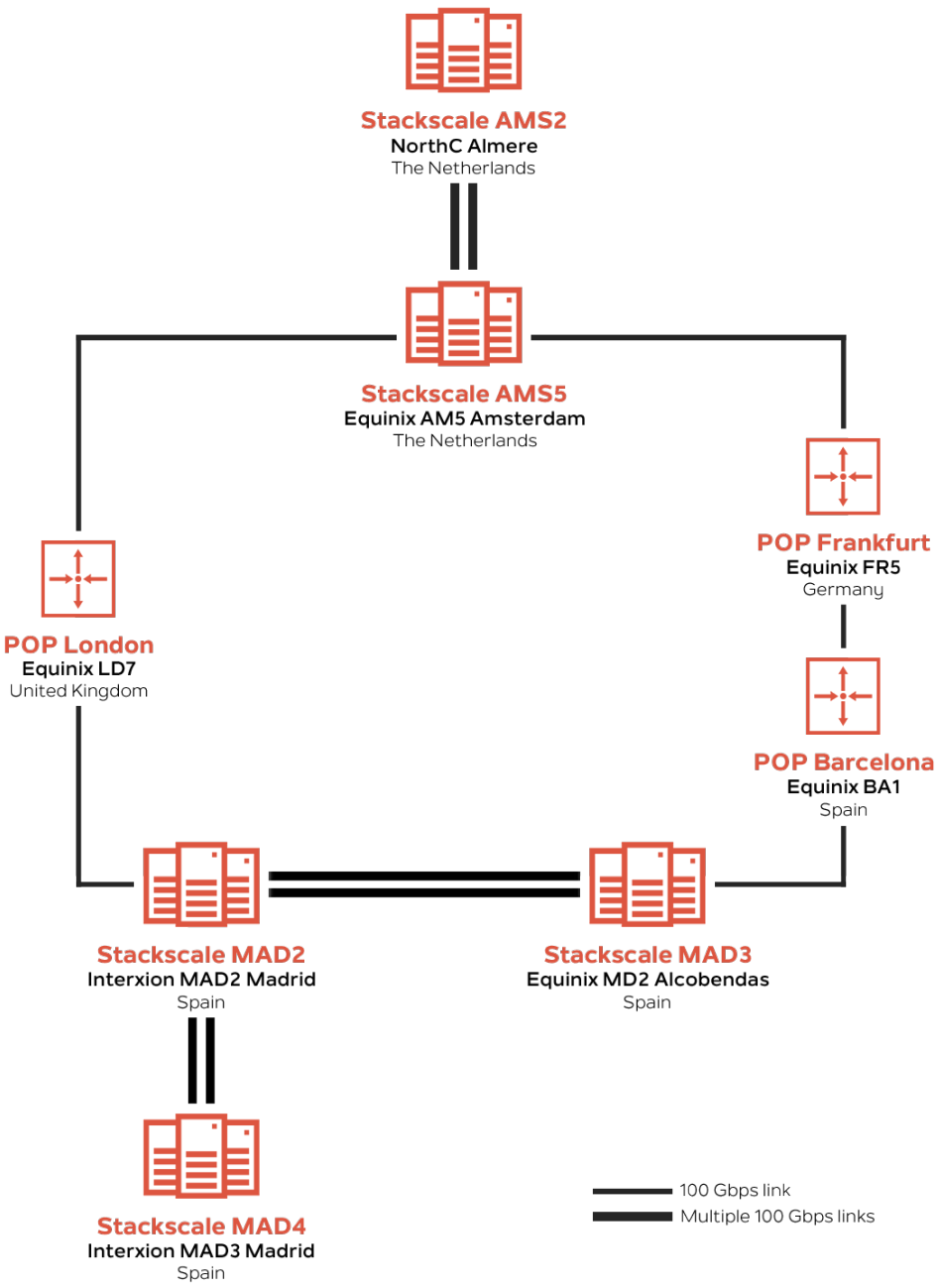
Stackscale data centers in Europe



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Our services are located in data centers within the European Union and secured by its regulations.

We currently have data centers in Amsterdam, the Netherlands — Equinix AM5 and NorthC Almere — and Madrid, Spain — Interxion MAD2, Interxion MAD3 and Equinix MD2.

Stackscale's data centers fulfill **strict security, efficiency, redundancy and connectivity requirements**. Besides, diverse innovating techniques allow them to achieve exceptionally low PUE ratios.

- Certified by international standards.
- Business continuity guarantees.
- Fault-tolerance.

Sales department

Mon-Fri from 9:00AM to 7:00PM
Spain: +34 911 091 090
The Netherlands: +31(0)20 309 3000
sales@stackscale.com

Technical support

Spain: +34 911 091 090
The Netherlands: +31(0)20 309 3000
sales@stackscale.com

Offices

Madrid
Plaza Pablo Ruiz Picasso, 1
28020 Madrid
Spain

Alicante
Calle Dos de Mayo, 2
03600 Elda
Spain

Ciudad Real
Calle Mesones, 9
13640 Herencia
Spain

Amsterdam
P.J. Oudweg 4
1314 CH Almere
The Netherlands