

## General requirements for the partner infrastructure

### **Minimum starter requirements for trying out the system** *(not recommended, does not have redundancy)*

1 Dedicated Server, Intel Xeon E3-12xx v3 or better, 32 Gb RAM, 2 x 1000 Gb SATA-3 + 120G SSD

### **Local Storage Scenario** (dedicated server setup). *Disclaimer – if a server goes down, all data is lost.*

Minimum 2 Dedicated Servers or IaaS platform

### **Hardware requirements for user nodes:**

- CPUs
  - x86-64 platform with Intel VT-x or AMD-V hardware virtualization support (Intel platform is preferred)
  - minimum **12 cores** per node, **32 cores** or more recommended (physical cores, not Hyper-threaded ones)
  - low voltage CPUs (i.e. Intel Atom) are **strongly not recommended** due to the poor performance.
- RAM
  - 16Gb minimum, 32GB or more recommended
- Network
  - 2 network cards with 1Gbps speed each
- Storage
  - local or SAN disks can be used; disks **MUST** belong to a single user node only
  - in case of SAN disks usage, multipathing is strongly recommended
  - for operating system, you need to provide 70 GB or more of RAID1 or mirrored storage
  - for user containers, the storage reliability, high performance and redundancy are required:
    - hardware RAID1 or RAID10 disk(s) are strongly recommended
    - at least about 600 IOPS is highly recommended
    - storage performance of /vz volume is vital for end-users' environments performance. Block device have to meet the following requirements on sustained disk I/O read/write/random read/random write: 460MBps/120MBps/8MBps/2MBps. Using SSD for /vz caching is strongly recommended.
  - sizing rules and recommendations for the user containers' file system:

- one user's container occupies from 700 MB to 1.7 GB, therefore, in order to provide the required space for about 1000 containers per node, you will need at least ~ 1 TB, plus another 500 GB-1 TB of space for user's data inside the containers
- usual recommendation is to have 1-3 or more TB of usable storage per user node
- however, you can consider the “grow /vz fs as you grow” scenario, starting with 300-400 GB storage size; please, consult with MIRhosting team in this case

*Recommended:*

- *to have one separate infra server for Jelastic-specific containers and NFS/iscsi storages for docker templates and template caches.*
- *to use SSD-only storage. It can be split to 2 different hard-node groups, one SSD-only with higher costs for storage, and another with combined SATA+SSD-cache for lower costs.*

**Cloud Storage Scenario (data is simultaneously distributed across three servers - highest level of redundancy).** *Disclaimer - high network throughput is required (2 Gbps to 10 Gbps is recommended)*

Minimum 3 dedicated servers, 5 dedicated servers are recommended for good storage performance.

Same *hardware* requirements as for local storage scenario

***Separate isolated network***, 1 gbps is absolute minimum, 2gbps or 10 gbps is recommended.

In case of using cloud storage, no need to use local RAID for containers, as redundancy is already provisioned by cloud storage technology. However, RAID1 can be used for OS partition.

In case of using SATA hard drives for containers, SSD for caches is absolutely required to achieve good performance.

***Storage sizing guidelines***

- each data chunk is usually stored in 3 replicas in order to achieve redundancy, IO load balancing, and as a pre-requirement for HA
- to get understanding on the approximate usable data amount you'll need to get in the cluster, just divide the total amount of storage (exported under Chunk Service control) by the number of replicas

**Other recommended requirements**

Regardless of which storage scenario you are planning to use, there are other general requirements to be met:

**1. Network Requirements**

- All of the servers should have at least 2 network interfaces: WAN interface with the public IP address and LAN interface, connected to the managed port switch

- Internal (LAN) network should operate at 1Gbps speed or faster
- Another internal network for Parallels Cloud Storage should operate at least at 1 Gbps
- Allocated internal network subnet mask should be at least /16; /8 is recommended
- External (WAN) connection should have at least 100 Mb connection; 1Gbps speed is recommended
- Each hardware node (of both user and infra types) must have a public IP address assigned to the external (WAN) connection
- 2 or more public IP addresses for authoritative DNS servers - i.e. 1.1.1.1 and 2.2.2.2 - due to the number of resolvers, minimum is 2
- At least 20 additional public IP addresses for tests
- Firewalls should be configured; please contact MIRhosting for details.

## 2. DNS Requirements

### **DNS zone delegation MUST BE already configured**

- Recommended DNS domain name: *cloud.hosterdomain.com*

In this case, customer url will be: *app.cloud.hosterdomain.com*

End user`s environments will be accessible by:

- Netherlands: *env-123456.nl.cloud.hosterdomain.com*
  - USA: *env-123456.us.cloud.hosterdomain.com*
  - Country: *env-123456.<insert country name here>.cloud.hosterdomain.com*
- Custom domains for each region
- You register separate domain names for user`s environments` URL in each available region. Examples:
- Netherlands: *env-123456.nlcloud.com*
  - USA: *env-123456.uscloud.com*

## 3. SSL Requirements

Wildcard SSL certificate for the selected DNS domain and all of its subdomains must be provided (domains *\*.cloud.hosterdomain.com* *nl.cloud.hosterdomain.com* *env-123456.nlcloud.com*).