

Lina Server Sizing Guide

The sizing recommendations for your Lina server vary according to the following criteria:

- The volume of data to protect
- The number of agents to protect

Our recommendations are based on statistical data retrieved from the most common existing Lina configurations. As a result, some specific configurations may not fit into this scheme and may require additional and deeper analysis.

1. Configuration Types

The following table describes the server requirements corresponding to the five configuration types we have identified:

Configuration type	Minimum CPU Cores	Minimum RAM	SSD requirements*
C0	2	8GB	N/A
C1	2	16GB	N/A
C2	4	32GB	64GB
C3	8	64GB	240GB
C4**	16	96GB	240GB

* SSD drives when required are MANDATORY and checked when launching Live Navigator. Do not try to install or update Live Navigator without SSDs. SSDs are required for: the index database, and the Lina databases. For Lina databases we recommend using an NVMe SSD.

** Consider adding some network cards to accommodate a large number of concurrent connections.

2. Configuration Matrix

The following table indicates which configuration type to choose according to the volume of data and number of Lina agents to protect:

Configuration	1 to 100 agents *	101 to 500 agents	501 to 1000 agents	1001 to 2000 agents
Storage up to 2 TB	C0	C1	C2	C3
Storage up to 4 TB	C1	C2	C2	C3
Storage up to 10 TB	C2	C2	C3	C3
Storage up to 50 TB	C3	C3	C3	C4

3. Fine tuning

The following elements can have an impact on the volume and /or number of agents that can be protected by one server:

- **Block size**
The default block size is 256 KB. Under certain circumstances, namely if you are backing up big files, you may see performance increases by raising the block size to 4 MB (via a tunable). In such a case you will end up with a smaller Index Database and could support a higher volume of protected data per server, above the 50TB limit.
Note: If, on the contrary, you are backing up a lot of small files, changing the block size will not reduce the size of the database as your blocs will not reach the maximum limit of 4 MB.
- **Multi-instance**
Multi-instance refers to a situation where a single machine host more than one Lina Server on separate TCP ports. This will allow you to protect more than the maximum limit of 2000 agents/50 TB with one server machine.
Note: The machine used as a server must have enough resources to host several instances. You will need roughly the minimum requirement x the number of instances.

4. Best Practices

- **Physical vs. Virtual**
While we recommend using a physical server rather than a virtual one, mostly for I/O performances, you may also host your Lina server on a virtual machine. If you do so, make sure that the resources available to the virtual server meet the requirement outlined in the above sections, with good I/O performance and SSD.
- **SSD**
 - Do not apply a RAID configuration to your SSD disk. If you do you will lose the advantage of the SSD built-in data block management (TRIM command)
 - We recommend using an NVMe SSD disk to store the Lina Agent databases.
- **Windows Operating System**
We recommend installing the Lina server on a Windows 2016 or 2019 rather than 2008 or 2012 to benefit from better memory management with the more recent Windows versions (even though Windows 2008R2 and 2012 are still supported).

5. Example of a Lina Server Configuration

Following are the minimum requirements for a Lina Server backing up to 1000 workstations and up to 25 TB of stored blocks, corresponding to a **C3 configuration**:

- 8x cores 64-bit CPU
- Windows 2016
- 64 GB RAM
- Two disks 72 GB SAS 15 K set up in RAID 1
- One 240 GB SSD disk for the index database
- One 500 GB NVMe SSD disk for the Lina databases
- One disk space in RAID 50 : SAS 10 K disks to store up to 25 TB of blocks
- One Gigabit network card with 2 ports.