everRun v7.3.0 Server Sizing Guide

■ BIOS

- The CPUs for every host computer must have hardware support for virtualization enabled in the BIOS.

■ CPU Sizing:

- The number of cores recommended for everRun workloads depends upon the number of vCPUs in each VM and the types of the VMs as described below:

Item	Number of Physical Cores
Fixed system overhead (host and system management)	2 (default) or 4 if required for larger systems with many VMs
Each FT guest with n vCPUs	$n + 2$ (typical)
Each HA guest with n vCPUs	$n + 1$ (typical)

- For example, a configuration with 3 PVMs having these parameters:

  - PVM A protected with FT, application requires 4 vCPUs
  - PVM B protected with HA, application requires 7 vCPUs

- Will require this many total vCPUs:

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PVM A usage:              4 + 2 = 6
PVM B usage:              7 + 1 = 8
Hypervisor/System usage:       2
Total =                        16
```

To provide a system with sufficient cores (and no core sharing):

With hyper-threading turned on: single octo-core = 16 vCPUs

With hyper-threading off: 2 x octo-core = 16 vCPUs

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Note: for good performance choose processors with sufficient cores when hyper-threading is enabled. For best performance have sufficient cores when hyper-threading is disabled. Some core sharing is acceptable but no more than 50% should be configured (50% sharing means 12 cores available when 18 are required). Less sharing means better performance.

■ Memory Sizing Formula:

- everRun Host (2GB) + each protected VM workload (vm_memory * 1.2 for everRun protection processing). Assumes less than 20 VMs in the configuration -- for 20 or more VMs, the host memory requirement is 4GB.
- For example, total 3 Guests (A,B,C) to protect, A needs 8GB memory, B needs 16GB memory, C needs 32GB memory

  - ◆ Guest A (8GB * 1.2) + Guest B (16GB * 1.2) + Guest C (32GB * 1.2) + everRun Host (2GB) == 9.6 + 19.2 + 38.4 + 2

  - ◆ Total 69.2GB memory needed

■ Storage Requirements

An everRun Enterprise system has the following storage requirements and recommendations:

- Each physical machine must contain at least two physical disks.
- 50 GB is required for the host CentOS operating system and everRun software in the host domain including space for logs. Allow 10 GB minimum (boot disk) for each VM. Additional storage is needed for applications and data on each VM.
- For acceptable performance Stratus recommends that your systems use a storage RAID controller having a battery-backed write cache.
- If the system has a single logical disk, Stratus strongly recommends that you configure the RAID controller so that logical disks presented to the host are backed by redundant physical drives.
- You must configure the RAID controller to boot off the first logical disk.
- For performance reasons using 3 or more drives is better.

Storage Sizing

everRun and hypervisor:	50GB
ISO images:	Allow 5-10GB for each stored ISO (Virtual CD)

VM storage (including Virtual Machine guest OS and application/data drives):

Without DR or Snapshots:	Size of VMs
With DR or Snapshots:	Size of VMs + 3.5x size of VMs

Network Adapter Requirements

General Network Requirements and Configurations

This topic discusses general network requirements and provides some recommended network configurations.

Recommended Configurations

For best performance choose the following network adapters configuration:

- One 10 Gb port shared between the Private Link (Priv0) and first A-link interface
- One 10 Gb port for the second A-link interface
- One 1 Gb port for Management
- One 1 Gb port for Business (additional if multiple VMs, each with dedicated adapters is desired)

> Note: more pairs of 1 Gb or 10Gb A-link ports may be warranted if there are multiple VMs protected with FT. This allows each VM to have a dedicated pair of A-links for potentially better overall throughput (application dependent).

For smaller applications the following may provide acceptable performance:

- One 1 Gb port shared between private network (Priv0) and A-link interface
- One 1 Gb port for a second A-link interface
- One 1 Gb port for Management
- One 1 Gb port for Business network

SplitSite Network Requirements

When deciding on network adapters, the above recommendations also apply for SplitSite configurations. However, for point-to-point A-link interfaces, fibre adapters may be required to maintain connections over longer distances.

everRun DR Configurations

For the DR site Simplex everRun system the following system components are recommended

vCPU: similar to Duplex system (can be 1 fewer per VM because VMs are not protected. If installing OneView here allocate 1 vCPUs for it.)

Memory: same as Duplex system (if installing OneView here, allocate additional 2GB)

Storage: same as Duplex system (if installing OneView here, allocate additional 15GB)

Network: same as Duplex system (a port must be available for Priv0 but is not connected)

■ Questions to Ask

- How many VM servers to protect?

- How much memory required per VM server?

- Always use memory type & size that would give maximum bandwidth and memory frequency for best performance (CPU/motherboard dependent)