



**institute  
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**Hardware specifications for  
IMS Server and Workstations**

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# 1 IMS server specification

This document lists the minimum and recommended hardware specification requirements for servers running the IMS server applications, like Synapse and Database server. It also includes the same for workstations running the IMS client applications.

## 1.1 General notes that apply to all servers

- Hard-drive RAID configurations are recommended to prevent data loss.
- The Linux operating system should be installed natively on the hardware, i.e. not in a virtual environment running on another operating system, like Windows for instance. For virtualised systems, it should be a Type 1 (native hypervisor).
- All systems require fixed network interface hardware addresses (MAC address).
- It is strongly recommended to have all servers connected to uninterruptible power supplies (UPS).

## 1.2 Specification for servers

### 1.2.1 Small systems (less than 16 channels)

Component	Physical server		Virtual server	
	Minimum	Recommended	Minimum	Recommended
64-bit processor (CPU) (See note:SPEC)	Quad (4) core (single thread)	Eight(8)-core (single thread)	Quad (4) core (single thread)	Eight(8)-core (single thread)
Memory (RAM) (See note:SPEC)	24GB	32GB	24GB	32GB
Ethernet ports (See note: LAN)	1 x 1Gb	2 x 1Gb	1 x 1Gb	2 x 1Gb
Serial port	1	1	0	0
Hard drives (See note: DISK)	2 x 2TB (non-RAID)	2 x 2TB (RAID1)	- Virtual disk 1 (400GB) - Virtual disk 2 (2TB)	- Virtual disk 1 (400GB) - Virtual disk 2 (2TB)
Monitor for installation	1	1	0	0
Optional graphics card (if running Trace, Vantage etc.) (See note: RESOURCES-SERVER)	NVidia or AMD 3D card with 1GB memory	NVidia or AMD 3D card with minimum 2GB memory	N/A	N/A
Operating system	Linux Ubuntu 24.04 LTS	Linux Ubuntu 24.04 LTS	Linux Ubuntu 24.04 LTS	Linux Ubuntu 24.04 LTS

Table 1: Small systems (less than 16 channels)

**1.2.2 Medium-sized systems (17 to 150 channels)**

<b>Component</b>	<b>Physical server</b>		<b>Virtual server</b>	
	<b>Minimum</b>	<b>Recommended</b>	<b>Minimum</b>	<b>Recommended</b>
64-bit processor (CPU) (See note:SPEC)	Eight(8)-core (single thread)	Eight(8)-core (dual thread)	Eight(8)-core (single thread)	Eight(8)-core (dual thread)
Memory (RAM) (See note:SPEC)	32GB	40GB	32GB	40GB
Ethernet ports (See note: LAN)	1 x 1Gb	2 x 1Gb	1 x 1Gb	2 x 1Gb
Serial port	1	1	0	0
Hard drives (See note: DISK)	2 x 2TB (non-RAID)	2 x 2TB (RAID1)	- Virtual disk 1 (400GB) - Virtual disk 2 (2TB)	- Virtual disk 1 (400GB) - Virtual disk 2 (2TB)
Monitor for installation	1	1	0	0
Optional graphics card (if running Trace, Vantage etc.) (See note: RESOURCES-SERVER)	NVidia or AMD 3D card with 1GB memory	NVidia or AMD 3D card with minimum 2GB memory	N/A	N/A
Operating system	Linux Ubuntu 24.04 LTS	Linux Ubuntu 24.04 LTS	Linux Ubuntu 24.04 LTS	Linux Ubuntu 24.04 LTS

Table 2: Medium systems (17 to 150 channels)

### 1.2.3 Large systems (more than 150 channels)

Component	Physical server		Virtual server	
	Minimum	Recommended	Minimum	Recommended
64-bit processor (CPU) (See note:SPEC)	Eight(8)-core (dual thread)	Eight(8)-core (dual thread)	Eight(8)-core (dual thread)	Eight(8)-core (dual thread)
Memory (RAM) (See note:SPEC)	40GB	64GB	40GB	64GB
Ethernet ports (See note: LAN)	1 x 1Gb	2 x 1Gb	1 x 1Gb	2 x 1Gb
Serial port	1	1	0	0
Hard drives (See note: DISK)	2 x 4TB (RAID1)	2 x 4TB (RAID1)	- Virtual disk 1 (400GB) - Virtual disk 2 (4TB)	- Virtual disk 1 (400GB) - Virtual disk 2 (4TB)
Monitor for installation	1	1	0	0
Optional graphics card (if running Trace, Vantage etc.) (See note: RESOURCES-SERVER)	NVidia or AMD 3D card with 1GB memory	NVidia or AMD 3D card with minimum 2GB memory	N/A	N/A
Operating system	Linux Ubuntu 24.04 LTS	Linux Ubuntu 24.04 LTS	Linux Ubuntu 24.04 LTS	Linux Ubuntu 24.04 LTS

Table 3: Large systems (more than 150 channels)

## 2 Workstation specifications

The requirements in the following table apply to workstations running IMS client applications, like Synapse, Trace, Ticker3D, etc.

Requirements according to software applications:

- **IMS Synapse Viewer, IMS Trace:** Minimum requirements
- **IMS Vantage, IMS Combined, IMS Ticker3D, IMS Modeling:** Recommended requirements

<b>Component</b>	<b>Minimum</b>	<b>Recommended</b>
64-bit processor (CPU) (See note: (See note: RESOURCES-WORKSTATION))	Quad (4) core (single thread)	Eight(8)-core (dual thread)
Memory (RAM) (See note: (See note: RESOURCES-WORKSTATION))	16GB	32GB
Ethernet ports	1 x 1Gb	1 x 1Gb
Hard drives (See note: RESOURCES-WORKSTATION)	500GB	1TB
Monitor	1 x 15 inch	2 x 23 inch
Graphics card (if running Trace, Vantage etc.)	No <b>3D</b> graphics required	NVidia or AMD 3D card with minimum 4GB memory
Operating system	Windows 11 and Linux Ubuntu 24.04	Windows 11 and Linux Ubuntu 24.04

Table 4: Workstations specifications

### 3 Notes

**SPEC:** The specifications listed, are based on average seismic event rates. For high-event rate systems, the resources listed might not be adequate.

**LAN:** Depending on system configuration and/or customer requirements, multiple network interfaces might be required, for instance: one interface to connect to a business LAN (general network access) and a second to connect to a private seismic VLAN. LAN interface requires static MAC address for licensing purposes.

**DISK:** Disk space can be adjusted and more added over time, based on continuous and non-continuous data recording requirements. RAID disk configurations for virtual servers are recommended. Based on system activity, SSD requirements are possible.

**RESOURCES-SERVER:** It is not recommended to run resource-heavy (like IMS Vantage, Combined, Ticker3D, etc.) or non-IMS software applications on the server that is used to run the IMS system. If this is done, it might compromise or lead to loss of data.

**RESOURCES-WORKSTATION:** The hardware specifications listed are based on resource requirements of the operating system and IMS applications and their dependencies. Should other resource-intensive applications be used on the workstation, resources will need to be adjusted accordingly.

Change Control Record				
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Table 5: Change record