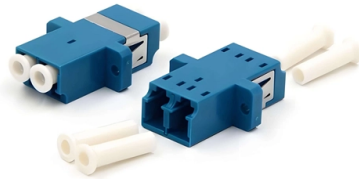


# AI Server Graphics Card Configuration



## Article Overview

Optimizing AI servers requires selecting the right GPUs, ensuring software compatibility, and fine-tuning performance through cooling, memory management, and multi-GPU parallelization.

### Hardware Selection

**GPU Choice:** NVIDIA GPUs such as the A100, H100, or RTX 4090 are widely used due to CUDA and Tensor Core support, while AMD GPUs like MI300 are gaining traction for HPC workloads . **For large AI models, VRAM is critical;** GPUs with less than 24GB VRAM may bottleneck performance . **CPU and RAM:** High-core-count CPUs (AMD EPYC or Intel Xeon) improve data preprocessing. RAM should be 64-128GB or more for large datasets . **Storage:** NVMe SSDs are preferred for low-latency, high-throughput data access . **Power and Cooling:** Multi-GPU setups require 1000W+ PSUs and efficient airflow to prevent thermal throttling . Proper spacing and cooling are essential to maintain GPU longevity and performance.

### Software Stack Configuration

**Operating System:** Linux distributions like Ubuntu or CentOS are recommended for GPU support . **Drivers and Libraries:** Install the correct GPU drivers, CUDA, and cuDNN versions compatible with your AI frameworks. Mismatched versions can break the setup . **AI Frameworks:** TensorFlow, PyTorch, and GPU-accelerated libraries like TensorRT should be installed and regularly updated to leverage GPU optimizations .

### Performance Optimization...

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