

AI server hardware components include

Article Overview

AI servers are built with specialized hardware including high-performance CPUs, multiple GPUs, high-bandwidth memory, storage drives, networking interfaces, power modules, and advanced cooling systems.

Core Processing Units

- CPU (Central Processing Unit): High-core-count processors such as Intel Xeon or AMD EPYC handle general-purpose computations, orchestration, and system management tasks in AI workloads .
- GPU (Graphics Processing Unit): Multiple GPUs accelerate parallel computations for deep learning and neural network training. NVIDIA A100 or H100 GPUs are commonly used, often integrated with NVSwitch units for high-speed interconnects .
- Specialized Accelerators: TPUs (Tensor Processing Units) or FPGAs (Field-Programmable Gate Arrays) may be included for specific AI tasks, enhancing performance for inference or training .

Memory and Storage

- RAM (System Memory): Large amounts of ECC RAM support high-speed data access and model training .
- High-Bandwidth Memory (HBM): Integrated with GPUs to provide rapid access to large datasets .
- Storage: NVMe SSDs or high-capacity drives store datasets and trained models. AI servers often include multiple terabytes of internal storage for fast read/write operations .

Networking and Interconnects

- Network Interface Cards (NICs): High-speed Ethernet or InfiniBand adapters enable fast data transfer between nodes in distributed AI systems .
- PCIe Switches and NVSwitches: Facilitate high-bandwidth communication between GPUs and CPUs, critical for multi-GPU configurations .

Power and Thermal Management

- Power Modules: Redundant high-capacity power supplies ensure stable operation under heavy AI workloads .
- Cooling Systems: AI servers use advanced air or liquid cooling, sometimes immers...

Article Content

Jun 03, 2026

Breaking down the Five Key Components of an AI Server

CPU Motherboard Tray: This part serves as the core component for all servers, including both regular and AI servers.

Jun 11, 2026

AI Server PCB Hardware Breakdown

From a functional perspective, PCB value in an AI server can be grouped into three parts: the GPU board assembly,

Jun 13, 2026

A Jargon-Free Guide on How AI Server Architecture Works

While traditional servers rely mostly on CPUs, AI servers lean heavily on graphics processing units (GPUs) and

Mar 29, 2026

Medium: Read and write stories.

On Medium, anyone can share insightful perspectives, useful knowledge, and life wisdom with the world.

Dec 26, 2025

AI Server PCB Hardware Breakdown

The GPU board assembly is the defining section that differentiates AI servers from

Apr 13, 2026

What Is an AI Server? Architecture, Components & PCB Requirements

From GPU baseboards to NVSwitch boards and server motherboards, NextPCB's advanced PCB manufacturing capabilities cover

Sep 10, 2025

Free Bootstrap Themes, Templates, Snippets, and Guides

Start Bootstrap develops free to download, open source Bootstrap 5 themes, templates, and snippets and creates guides and

Nov 08, 2025

Powering AI: The Semiconductor Ecosystem at the Foundation of

The trusted platform module (component E of figure 12) provides hardware-based security foundations for AI servers, including

Jun 05, 2026

Data Center Hardware: The Core Components (2026)

Data centers rely on core hardware components like servers, networking equipment, and storage solutions for efficient

Jun 15, 2026

Broadcom Inc. | Connecting Everything

Broadcom delivers semiconductors and infrastructure software for global enterprises' most complex, mission-critical needs.

Jul 06, 2026

AI Hardware Requirements: A Comprehensive Guide

In this guide, I'll explain the exact AI hardware requirements for different workloads, listing each hardware component

May 13, 2026

How to Build an Affordable Custom AI Server for AI Projects

Key hardware components include a multi-GPU motherboard, high-performance CPU, at least 96GB RAM, effective

Jan 18, 2026

What Are Servers? A Practical Guide for Modern IT & AI

Learn what a computer server is, how servers work, common server types, key

Dec 06, 2025

Welcome to My Oracle Support

Unified Sign in Experience for Cloud Users We redesigned the sign in page as part of introducing My Oracle Cloud Support, the new

Apr 14, 2026

Artificial Intelligence (AI) Servers - Intel

AI servers are strategically architected from AI hardware components to support AI workloads from edge to cloud. Critical elements

Mar 04, 2026

AI Server Hardware Components and Requirements | Lenovo US

Learn which hardware components power AI servers, including CPUs, GPUs, memory, storage, networking, and accelerators.

Jul 18, 2026

Infor | Cloud Enterprise Software & AI for Your Industry

Infor is a global leader in cloud-based, industry-specific enterprise software. Our solutions combine deep industry expertise with

Feb 04, 2026

TypeScript: JavaScript With Syntax For Types.

TypeScript is JavaScript with syntax for types. TypeScript is a strongly typed programming language that builds on JavaScript, giving

Jul 22, 2026

AI Infrastructure, Secure Networking, and Software Solutions

Cisco is a worldwide technology leader powering an inclusive future for all. Learn more about our products, services, solutions, and

Jul 20, 2026

What Are the Key Components of AI Server Architecture?

Modern AI infrastructure represents a sophisticated integration of specialized hardware and software components. At

Apr 08, 2026

A Jargon-Free Guide on How AI Server Architecture Works

AI server architecture combines specialized processors, high-speed connections, and intelligent design to handle AI's

Apr 05, 2026

What is an AI Server? AI Server Architecture Explained

The hardware is the foundation and the fundamental layer of any AI server, and often includes powerful CPUs, more

Nov 18, 2025

Breaking down the Five Key Components of an AI Server

GPU Board Tray: The rear section of the AI server is where the critical components come together. The GPU board

Jan 29, 2026

AI Servers in 2025: What Hardware is Needed to Run LLMs and

In this article, we will examine key hardware components necessary for high-performance AI servers in 2025: central

May 13, 2026

Artificial Intelligence (AI) Hardware – Intel

Some examples of AI hardware components include processors, AI accelerators, and specialized memory units. The type of AI

Apr 19, 2026

AI Infrastructure: Key Components and 6 Factors Driving Success

It encompasses a range of technologies including specialized processors like GPUs or TPUs, high-speed networking solutions for

Nov 15, 2025

Perplexity AI

Perplexity is a free AI-powered answer engine that provides accurate, trusted, and real-time answers to any question.

Nov 06, 2025

The AI Work Platform for People & Agents | monday

Execute, manage, and operate together on one AI work platform. The AI workspace where people and agents get more done across

Jan 02, 2026

AI Hardware Requirements: A Comprehensive Guide

This guide covers AI hardware requirements in detail, including CPUs, CPU, TPUs and FPGAs, memory, and storage,

Apr 20, 2026

BingAds SDK June 2023 Release (V13.0.16) | Microsoft Community Hub

We are pleased to announce the following new features, improvements, and bug fixes in the BingAds SDK June 2023

Mar 11, 2026

Shop Laptops Computers & Notebooks | Lenovo US

Shop high-performance laptops and notebooks with AI-based performance for every need. Browse the latest laptop computers by

Aug 24, 2025

TPC-Homepage

The Transaction Processing Performance Council (TPC) defines Transaction Processing and Database Benchmarks

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.iiss.co.za>

Email: sales@iiss.co.za

Phone: +27 63 174 2895

Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg, 2196, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

