Finalized Component List for AI Server (Supermicro AS-4124GS-TNR)

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1 Introduction

This document provides a finalized list of components to assemble a complete, working server based on the Supermicro AS-4124GS-TNR (4U GPU server) for running AI platforms with multi-user support. Two configurations are presented: one using AMD EPYC CPUs with the H12DSi-NT6 motherboard and another using Intel Xeon CPUs with the X12DPG-QT6 motherboard. Each configuration includes all necessary components, estimated costs, and guidance for sourcing from Alibaba.

2 AMD EPYC Configuration (H12DSi-NT6 Motherboard)

This configuration uses AMD EPYC CPUs for cost-effectiveness and high PCIe lane availability, ideal for AI workloads.

3 Intel Xeon Configuration (X12DPG-QT6 Motherboard)

This configuration uses Intel Xeon CPUs for better single-threaded performance and potential DDR5 upgrades.

4 Alibaba Sourcing Guidance

To source these components on Alibaba:

- **Search Terms**: "Supermicro AS-4124GS-TNR AMD EPYC H12DSi-NT6 GPU server" or "Supermicro AS-4124GS-TNR Intel Xeon X12DPG-QT6 GPU server". Include "NVIDIA H100 8 GPU" or "1TB DDR4".
- **Verification**: Confirm chassis (AS-4124GS-TNR), motherboard (H12DSi-NT6 or X12DPG-QT6), CPUs (EPYC 7702 or Xeon 8380), 8x H100 GPUs, 1TB DDR4, 4x 15.36TB NVMe SSDs, 4x 2000W PSUs, dual 10GbE, 4x NVLink bridges, Ubuntu Server.

Table 1: AMD EPYC Configuration Components

Component	Details	Cost (USD)
Chassis	Supermicro AS-4124GS-TNR (4U, 8x GPU slots, 24x 2.5" bays, 8x fans)	$3,999–$7,000
Motherboard	H12DSi-NT6 (dual SP3, 16x DDR4 slots, 8x PCIe 4.0 x16, dual 10GbE)	$600–$1,000 (included)
CPUs	2x AMD EPYC 7702 (64-core, 2.0GHz, 256MB cache, 200W)	$8,000–$10,000
GPUs	8x NVIDIA H100 NVL (80GB VRAM, 700W, NVLink)	$200,000–$280,000
RAM	1TB DDR4 ECC RDIMM (16x 64GB, 2933MHz)	$3,600–$4,000
Storage	4x 15.36TB PCIe 4.0 NVMe SSDs (U.2, e.g., Micron 7450 MAX)	$8,000–$12,000
Power Supply	4x Supermicro PWS-2K08A-1R (2000W, 80 PLUS Titanium, redundant)	$1,600–$2,400 (included)
Networking	Dual 10GbE (Broadcom BCM57416, integrated)	$300–$600 (included)
NVLink Bridges	4x NVIDIA NVLink Bridge (2-slot spacing)	$3,600
Operating System	Ubuntu Server 24.04 LTS (free, AI-optimized)	$0
Cooling/Other	8x fans (included), optional liquid cooling, SSM, cables	$1,235–$2,335
Total (H100)		$228,500–$319,735
Total (RTX 6000 Ada)	Alternative: 8x NVIDIA RTX 6000 Ada (48GB VRAM)	$82,935–$100,000

- **Supplier Contact**: Request quotes from verified suppliers (e.g., Shenzhen ITZR Technology Co., Ltd.). Ask for spec sheets, lead time (2–8 weeks), and 1–3 year warranty.
- **Price Expectation**: $80,000–$320,000 for new systems with H100 GPUs; $10,000–$20,000 for refurbished systems with older GPUs (e.g., NVIDIA A100).

5 Recommendations

- **Preferred Configuration**: AMD EPYC (H12DSi-NT6) for cost-effectiveness and more PCIe lanes.
- **Intel Xeon Alternative**: X12DPG-QT6 for Intel optimizations or future DDR5 upgrades (with X13DDW-A).

Table 2: Intel Xeon Configuration Components

Component	**Details**	**Cost (USD)**
Chassis	Supermicro AS-4124GS-TNR (4U, 8x GPU slots, 24x 2.5" bays, 8x fans)	$3,999–$7,000
Motherboard	X12DPG-QT6 (dual LGA 4189, 16x DDR4 slots, 8x PCIe 4.0 x16, dual 10GbE)	$800–$1,200 (included)
CPUs	2x Intel Xeon Platinum 8380 (40-core, 2.3GHz, 60MB cache, 270W)	$8,000–$10,000
GPUs	8x NVIDIA H100 NVL (80GB VRAM, 700W, NVLink)	$200,000–$280,000
RAM	1TB DDR4 ECC RDIMM (16x 64GB, 3200MHz)	$3,600–$4,000
Storage	4x 15.36TB PCIe 4.0 NVMe SSDs (U.2, e.g., Micron 7450 MAX)	$8,000–$12,000
Power Supply	4x Supermicro PWS-2K08A-1R (2000W, 80 PLUS Titanium, redundant)	$1,600–$2,400 (included)
Networking	Dual 10GbE (integrated)	$300–$600 (included)
NVLink Bridges	4x NVIDIA NVLink Bridge (2-slot spacing)	$3,600
Operating System	Ubuntu Server 24.04 LTS (free, AI-optimized)	$0
Cooling/Other	8x fans (included), optional liquid cooling, SSM, cables	$1,235–$2,335
Total (H100)		$229,000–$320,000
Total (RTX 6000 Ada)	Alternative: 8x NVIDIA RTX 6000 Ada (48GB VRAM)	$83,435–$100,500

- **Next Steps**: Contact 2–3 Alibaba suppliers with the component list, verify specs, and compare quotes.