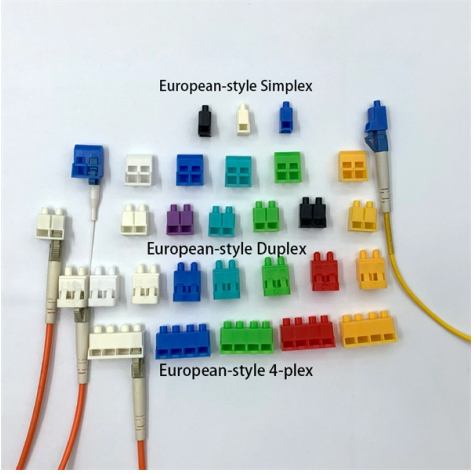
How to use AI server resources on the terminal



Overview

Energy demand from AI What is a data centre? Artificial intelligence (AI) model training and deployment occur mainly in data centres.

Key Takeaways

You can run AI servers on your terminal using MCP-compatible frameworks like PySDK or Terminal MCP, allowing AI agents to execute commands, interact with CLI applications, and manage models in real time.Setting Up an AI Server
• Install the AI Server Framework
• For PySDK, install the package on your device following the official installation guide .

• For Terminal MCP, ensure Node.js and Python dependencies are installed .

• Prepare the Model Environment
• Create a local model directory (model zoo) and populate it with AI models either from a hub or local files .

• For Docker-based setups, containerize the server to isolate execution and enhance security .

• Launch the Server
• PySDK: Run degirum server in the terminal. Use --port to specify a custom port if needed .

• Terminal MCP: Start the server to emulate a terminal session, allowing AI agents to see outputs and type inputs .

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• ESP-IDF Tools MCP: Use idf.py commands to start the local stdio server for project-specific AI actions .

Connecting AI Clients
• Configure your AI client (e.g., Claude, Cursor) to connect via STDIO, HTTP, or SSE depending on the server type .

• Authentication and sandboxing are recommended to prevent unauthorized or unsafe command execution .
Executing Commands
• Once connected, you can instruct the AI agent to run terminal commands:
• Example: ls to list files or echo "Hello from AI" to print messages .

• Terminal MCP supports full terminal emulation, allowing AI agents to interact with CLI or TUI applications like vim or htop .

• Session recording and playback are available for auditing and debugging purposes .
Advanced Features
• Sandbox Security: Restrict filesystem and network access to prevent accidental or malicious changes .

• Containerization: Run commands inside Docker containers for isolation and reproducibility .

• Automated Workflows: AI agents can debug builds, apply fixes, and rerun commands autonomously .

• Cloud Deployment: Some MCP servers can be deployed to cloud platforms for remote access .
Summary

Using AI server resources on the terminal involves installing an MCP-compatible server, preparing models, launching the server, connecting AI clients, and executing commands safely. By leveraging sandboxing, containerization, and session recording, you can enable AI agents to perform complex terminal tasks efficiently and securely.

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