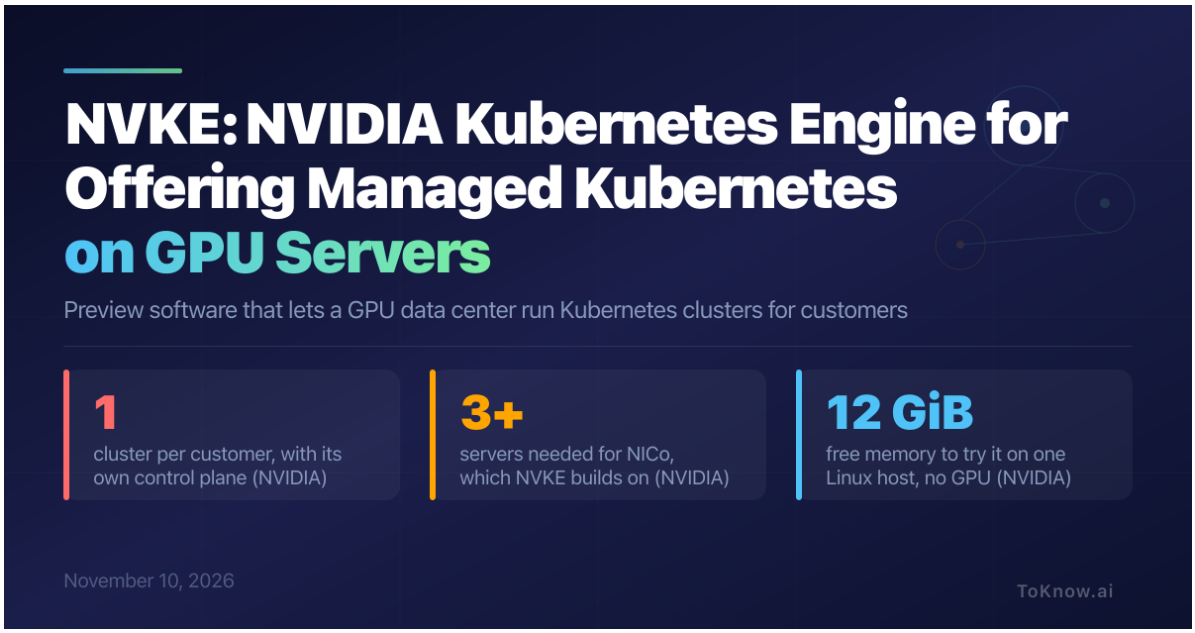
NVKE: NVIDIA Kubernetes Engine for Offering Managed Kubernetes on GPU Servers

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NVKE (NVIDIA Kubernetes Engine) is open-source software for companies running their own GPU data centers, which NVIDIA calls AI factories. It lets them run Kubernetes clusters for customers, similar to AWS's EKS service, heise reports. Kubernetes decides which program runs on which server and restarts any that fail, like a warehouse manager for software. An operator asks NVKE for a cluster. NVKE gets servers from NICo, NVIDIA's machine-setup

tool, checks each server's security chip and installs Kubernetes. Each customer gets a separate cluster with its own control plane, the part that decides. Later, NVKE replaces servers and upgrades Kubernetes.

Plain Kubernetes manages programs, not the machines underneath. NVIDIA's documentation says without NVKE, an operator builds a cluster-management system from open-source and commercial parts and maintains it through every Kubernetes release and GPU generation. heise says NVIDIA ties NVKE closely to its own stack: it gets servers from NICo by default, and NICo runs on its own cluster of at least 3 servers, so real hardware needs two management layers. heise names Gardener and Kamaji, open-source tools with similar jobs.

NVIDIA calls NVKE a preview and does not recommend it for production. After install, its API runs on plain HTTP with authentication off, and anyone on an allowed network can create or delete any customer cluster. The cluster that runs NVKE cannot upgrade its own servers. A Linux machine with 6 CPUs, 12 GiB of free memory and 100 GiB of disk can try NVKE with simulated servers and no GPU.

Sources:

- What is NVKE (NVIDIA documentation)
- Preview status and known limitations (NVIDIA documentation)
- NVKE: Nvidia previews its own Kubernetes engine (heise)
- Hardware prerequisites for NICo (NVIDIA documentation)
- Kubernetes overview (kubernetes.io)

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