



Solution Overview

NetApp Solutions

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May 24, 2021

This PDF was generated from https://docs.netapp.com/us-en/netapp-solutions/ai/osrunai_solution_overview.html on October 21, 2021. Always check docs.netapp.com for the latest.

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Solution Overview

NetApp ONTAP AI and AI Control Plane

The NetApp ONTAP AI architecture, developed and verified by NetApp and NVIDIA, is powered by NVIDIA DGX systems and NetApp cloud-connected storage systems. This reference architecture gives IT organizations the following advantages:

- Eliminates design complexities
- Enables independent scaling of compute and storage
- Enables customers to start small and scale seamlessly
- Offers a range of storage options for various performance and cost points

NetApp ONTAP AI tightly integrates DGX systems and NetApp AFF A800 storage systems with state-of-the-art networking. NetApp ONTAP AI and DGX systems simplify AI deployments by eliminating design complexity and guesswork. Customers can start small and grow their systems in an uninterrupted manner while intelligently managing data from the edge to the core to the cloud and back.

NetApp AI Control Plane is a full stack AI, ML, and deep learning (DL) data and experiment management solution for data scientists and data engineers. As organizations increase their use of AI, they face many challenges, including workload scalability and data availability. NetApp AI Control Plane addresses these challenges through functionalities, such as rapidly cloning a data namespace just as you would a Git repo, and defining and implementing AI training workflows that incorporate the near-instant creation of data and model baselines for traceability and versioning. With NetApp AI Control Plane, you can seamlessly replicate data across sites and regions and swiftly provision Jupyter Notebook workspaces with access to massive datasets.

Run:AI Platform for AI Workload Orchestration

Run:AI has built the world's first orchestration and virtualization platform for AI infrastructure. By abstracting workloads from the underlying hardware, Run:AI creates a shared pool of GPU resources that can be dynamically provisioned, enabling efficient orchestration of AI workloads and optimized use of GPUs. Data scientists can seamlessly consume massive amounts of GPU power to improve and accelerate their research while IT teams retain centralized, cross-site control and real-time visibility over resource provisioning, queuing, and utilization. The Run:AI platform is built on top of Kubernetes, enabling simple integration with existing IT and data science workflows.

The Run:AI platform provides the following benefits:

- **Faster time to innovation.** By using Run:AI resource pooling, queueing, and prioritization mechanisms together with a NetApp storage system, researchers are removed from infrastructure management hassles and can focus exclusively on data science. Run:AI and NetApp customers increase productivity by running as many workloads as they need without compute or data pipeline bottlenecks.
- **Increased team productivity.** Run:AI fairness algorithms guarantee that all users and teams get their fair share of resources. Policies around priority projects can be preset, and the platform enables dynamic allocation of resources from one user or team to another, helping users to get timely access to coveted GPU resources.
- **Improved GPU utilization.** The Run:AI Scheduler enables users to easily make use of fractional GPUs, integer GPUs, and multiple nodes of GPUs for distributed training on Kubernetes. In this way, AI workloads run based on your needs, not capacity. Data science teams are able to run more AI experiments on the same infrastructure.

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