

Generative AI: The New Frontier for Manufacturing

Overview

Generative AI (GenAI) is a game-changing technology that has tremendous potential for the manufacturing industry. GenAI can improve productivity and support decision making along the manufacturing value chain, including:

- Domain knowledge management and code or script generation for *research and development*.
- Operator and engineer support for *manufacturing*.
- Logistics documentation summarization, query, generation, etc., to improve the *supply chain and transport*.
- Technician (and end user) query support for *field services*.

But how can you prepare for GenAI adoption and automate deployment without risking your data? The answer is simple: Dell accelerated systems powered by NVIDIA.

Dell Validated Designs for Generative AI with NVIDIA

Dell and NVIDIA have the expertise, infrastructure, and tools you need to move quickly with GenAI. Our best-in-class technology and unparalleled support are at the core of everything we do.

- Dell PowerEdge servers, such as the [PowerEdge XE9680](#) and [PowerEdge R760xa](#), are optimized to deliver performance for generative AI training and AI inferencing. Combined with [NVIDIA® H100 Tensor Core GPUs](#) and [NVIDIA Networking](#), these form the infrastructure backbone for GenAI workloads.
- Dell Precision Data Science workstations allow AI developers and data scientists to prototype, develop, and fine tune GenAI models locally before deploying at scale.
- With resilient and scalable unstructured data storage, including [Dell PowerScale](#) and [Dell ECS Enterprise Object Storage](#), you'll have the simplicity and flexibility you need to manage your data.
- [NVIDIA AI Enterprise](#) includes more than 100 frameworks, pretrained models, and development tools such as the [NVIDIA NeMo™](#) large language model framework and [NeMo Guardrails](#) – a toolkit that adds a layer of safety, security, and topic-focused guardrails to existing LLM-based conversational applications, such as chatbots.
- A foundation of expertise and advisors, as well as award-winning Dell [ProSupport](#) and [ProDeploy](#) services, will help you kick-start GenAI initiatives at a business-wide and global scale.

Bringing Value Through Collaboration

Together, Dell Technologies and NVIDIA enable and accelerate Generative AI workloads, delivering engineering-validated hardware and software to accelerate AI, ML, and DL workloads that meet customer needs across all businesses and verticals. With AI solutions from Dell Technologies and NVIDIA, you can accelerate your digital transformation through real-time data that improves key decision-making, with solutions optimized for fastest time-to-value.

As your trusted source for GenAI solutions, Dell and NVIDIA provide unmatched value.



Full-stack, scalable solutions built on the best of Dell infrastructure and software, in combination with the latest NVIDIA accelerators, AI software, and expertise.



Expertise and deployment guidance for manufacturing companies to build, train, and model-tune GenAI models on-premise to help solve specific business challenges.



Support for the entire GenAI lifecycle, including infrastructure provisioning, large model development and training, and pre-trained model fine tuning, as well as multi-site, multi-cloud model deployment and consumption and large model inferencing.



Trusted AI outcomes delivered with confidence that decision outcomes are made from objective data inputs (assessed and sanitized according to a defined set of guardrails), which ensures data integrity. These decisions elevate the quality of results and provide the rationale for the decisions/recommendations provided by the model. Types of guardrails include **topic-focused guardrails**, which prevent apps from veering off into undesired areas; **safety guardrails**, which can filter out unwanted language; and **security guardrails**, which enforce continued confidentiality of information.



Security and privacy of sensitive and proprietary company data, as well as compliance with government regulations.



Flexible Capex/Opex consumption with APEX flex consumption approaches.

Easily Get Started

With the right foundation, you can leverage Generative AI to accelerate business outcomes for your manufacturing business. Trust Dell Technologies and NVIDIA for the best-in-class technology you expect and the support you need to get started with GenAI.



Contact your Connection Account Team for more information.
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