

## Cataloging Media Assets

### Accelerate Digital Twin Adoption with Intelligent Search

Creators, developers, and artists often face the difficult task of manually labeling and cataloging vast libraries of media assets. With Universal Scene Description (USD) files for digital twins and virtual production, this manual process becomes a significant bottleneck, delaying innovation and raising costs for digital environments.

NVIDIA USD Search, running on the Dell AI Data Platform, transforms this process by automatically creating labels and indexes for billions of USD assets, enabling teams to find what they need instantly. Using natural language or reverse image search, you can quickly locate specific 3D assets and accelerate project timelines. This lets teams focus on creating immersive experiences instead of manual cataloging.

### Bring Speed and Simplicity to 3D Asset Management

The combination of NVIDIA Omniverse and the Dell AI Data Platform makes managing large-scale 3D asset libraries simple and efficient. This solution provides a robust foundation for building, simulating, and managing digital twins. It helps creative and technical teams collaborate more effectively, reuse assets across projects, and bring innovative ideas to life faster. The result is greater efficiency and a clear path to scalable virtual production and simulation.

### Key USD Search Use Cases



#### Intelligent Asset Discovery

Automatically label and index billions of USD assets. This allows for fast, semantic search with natural language queries like “find a wooden chair” or through reverse image search for visual matching.



#### Scalable Metadata Management

Extract and organize rich metadata, including materials, geometry, and scene context, from your USD files. This makes even the largest 3D libraries searchable in real time.



#### Digital Twin Workflow Integration

Connect USD-based pipelines, like those in NVIDIA Omniverse, with powerful enterprise search systems. This allows for seamless asset reuse, speeding up virtual production, AR/VR experiences, and digital twin simulations.

### How it works

Organizations can deploy an intelligent search solution to make 3D asset management more efficient. This accelerates digital twin development and improves collaboration across creative and technical teams. To get started, organizations should:



#### Store and Join Assets

Place your USD files on high-performance storage like Dell PowerScale or ObjectScale.



#### Automate Indexing

Use NVIDIA USD Search to automatically scan, label, and index every asset, extracting key metadata.



#### Enable Semantic Search

Allow users to search the entire library with natural language queries through a simple talk.



#### Integrate and Create

Seamlessly pull assets into NVIDIA Omniverse or other applications to build and enhance digital twins.

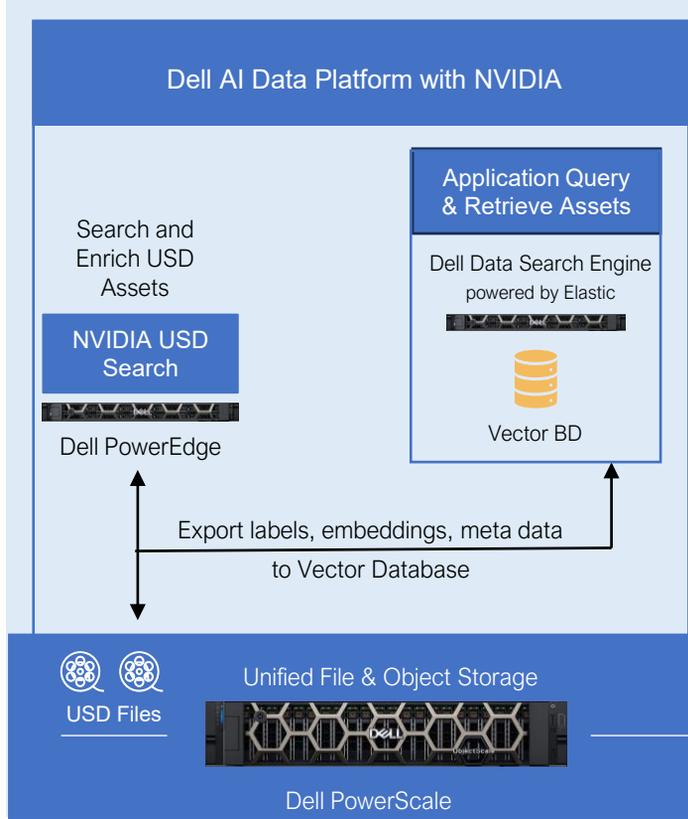


## The Power of an Integrated Technology Stack

An effective USD search solution relies on a powerful and integrated technology stack to turn massive 3D asset libraries into searchable, actionable resources.

The architecture starts with a high-performance storage backend, like Dell PowerScale or ObjectScale, where all USD files are stored. The NVIDIA USD Search software runs on Dell PowerEdge servers equipped with NVIDIA RTX GPUs, handling the heavy lifting of indexing and metadata extraction.

The Dell AI Data Platform hosts the search and database layers, using the Dell Data Search Engine with Elasticsearch to create a searchable index. When a user makes a query through a web application or API, the request is sent to the search backend. The system uses embedding services to understand the natural language query, retrieves the relevant assets from the database, and presents the results. This entire workflow, from storage to search, is designed for speed, scalability, and seamless integration with creative platforms like NVIDIA Omniverse.



## Accelerate Enterprise AI with Dell and NVIDIA

The Dell AI Data Platform with NVIDIA, delivers a purpose-built, AI-optimized infrastructure that accelerates innovation and simplifies enterprise AI adoption.

Combining Dell's modular, scalable data engines, high-performance storage, and NVIDIA's industry-leading GPU acceleration, this platform provides unmatched performance, seamless integration, and enterprise-grade security. Couple with Dell Blueprints providing pre-validated architectures that streamline deployment and optimize AI workflows; enterprises can unlock value from all their data, securely and cost-effectively, without the pain of DIY.

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