

REVOLUTIONIZE DATA CENTER OPERATIONS

with Digital Twins in NVIDIA Omniverse™

EXECUTIVE SUMMARY

Global Switch, a global leader in the data center industry, collaborated with SoftServe to build a digital twin to drive operational and resource efficiency across its data center infrastructure.

The first phase involves a digital twin for a liquid cooling prototype suite, delivering immediate proof of value through advanced visualization and data interaction.

Using NVIDIA Omniverse™, the digital twin leverages operational and maintenance data for natural language query, accelerated maintenance, and improved resource management.

Phase two will deliver a fully integrated operational ecosystem for two liquid-cooled customer deployments in 2026, with plans to scale across the whole Global Switch portfolio.

CONTEXT: IMPULSES FOR INNOVATION IN DATA CENTER OPERATIONS



Growing energy demand:

Data center energy needs are projected to nearly double by 2030.



AI impact across verticals:

Advanced AI workloads lead to increases in required power density.



Edge computing growth:

Private and industry demand drives need for urban, low-latency data centers.



CSR contributions:

Data center operators are seeking to demonstrate reduced environmental impact.

PHASE ONE: LIQUID COOLING DIGITAL TWIN FOR PROOF OF VALUE

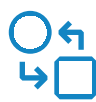
The first phase of the project delivered a PoV centered on the Liquid Cooling Prototype Suite at Global Switch London East, including navigable 3D representation of the full suite, comprising over 100 assets. The digital twin leverages operational and maintenance data snapshots to enable natural language querying, accelerated maintenance assessments, and improved resource management insights.

Immediate Functionality:



Interactive visualization:

Interactive 3D visualization, asset metric presentation, and interaction with documentation.



Intelligent querying:

O&M documentation reference for assets using natural language, leveraging data snapshots.



Functional tools:

Includes scene navigation, functionality, and object selection.



Local deployment:

Application runs locally on high-performance workstations equipped with RTX-class GPUs.



PHASE ONE: LIQUID COOLING DIGITAL TWIN FOR PROOF OF VALUE

Future enhancement will pave the way for comprehensive efficiency and innovation across Global Switch's global infrastructure.

Live data integration:

Real-time telemetry and sensor feeds for dynamic operations.

Enterprise-scale expansion:

Model entire sites for a unified digital twin.

Enhanced collaboration:

Multi-user sessions and real-time co-editing.

Analytics and optimization:

Dashboards, predictive analytics, and optimization for efficiency.

Cloud and scalability:

Cloud environments for scalability and performance.

Robust security and compliance:

Enterprise security and compliance for data protection.

LONG-TERM VALUE AND POTENTIAL RESULTS

The digital twin is already being used to upskill and prepare the Global Switch Operations teams for a wider rollout across the Global Switch portfolio in 2026, starting with ecosystems for two customer liquid cooled deployments.

It is hoped that by evolving from the foundational PoV of a digital twin to a fully realized AI factory, this partnership could potentially deliver significant and sustainable business outcomes*:

15-30%

reduction in energy consumption

through dynamic power and cooling optimization based on real-time analysis and forecasting.

20-30%

lower maintenance costs via predictive strategies reducing unplanned downtime and optimizing asset lifecycle.

7-13%

carbon emission reduction through automated responses and reinforcement learning in resource usage.

20-40%

improvement in uptime through predictive risk mitigation and operational reliability across all facilities.

TECHNOLOGY STACK: POWERED BY NVIDIA

This initiative is built on a state-of-the-art NVIDIA technology stack, providing the architectural framework for the solution's development and future expansion.

NVIDIA Omniverse: Underpins the core platform for creating the navigable 3D digital twin environment.

NVIDIA Enterprise Platform: Supports the implementation of advanced generative and agentic AI capabilities.

NVIDIA NIM: Facilitates the integration and deployment of optimized AI models for intelligent querying and analytics.

NVIDIA AI Factory Blueprint: Provides the proven architectural framework for the solution's development.

NVIDIA RTX™ GPUs: Powers the high-fidelity visualization and complex computation required for the digital twin.

*Data for demo purposes only, may include inaccuracies or incompletions.

TECHNOLOGY STACK: POWERED BY NVIDIA

SoftServe brings Physical and Agentic AI to life by leveraging the full breadth of NVIDIA's technology stack, enabling enterprises to move beyond AI experimentation and into production with scalable, outcome-driven solutions. As **NVIDIA's 2025 Service Delivery Partner of the Year** and an Advanced Technology Partner, SoftServe delivers real-world impact through high-fidelity simulation, robotics and automation, intelligent collaborative agents, and computer vision at scale. As AI complexity grows across technologies and use cases, our value lies in helping customers prioritize and integrate the right capabilities into end-to-end architectures.



Learn more about partnership with [NVIDIA here](#)

