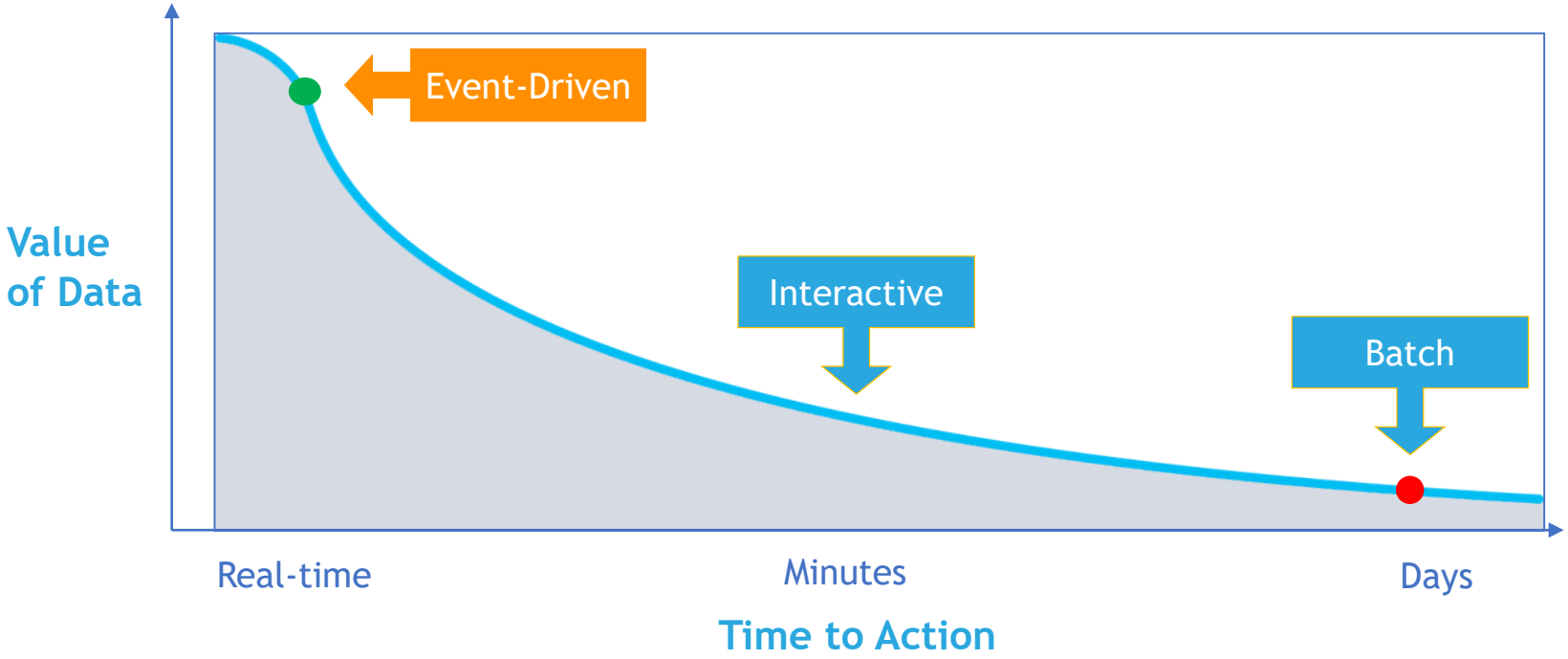
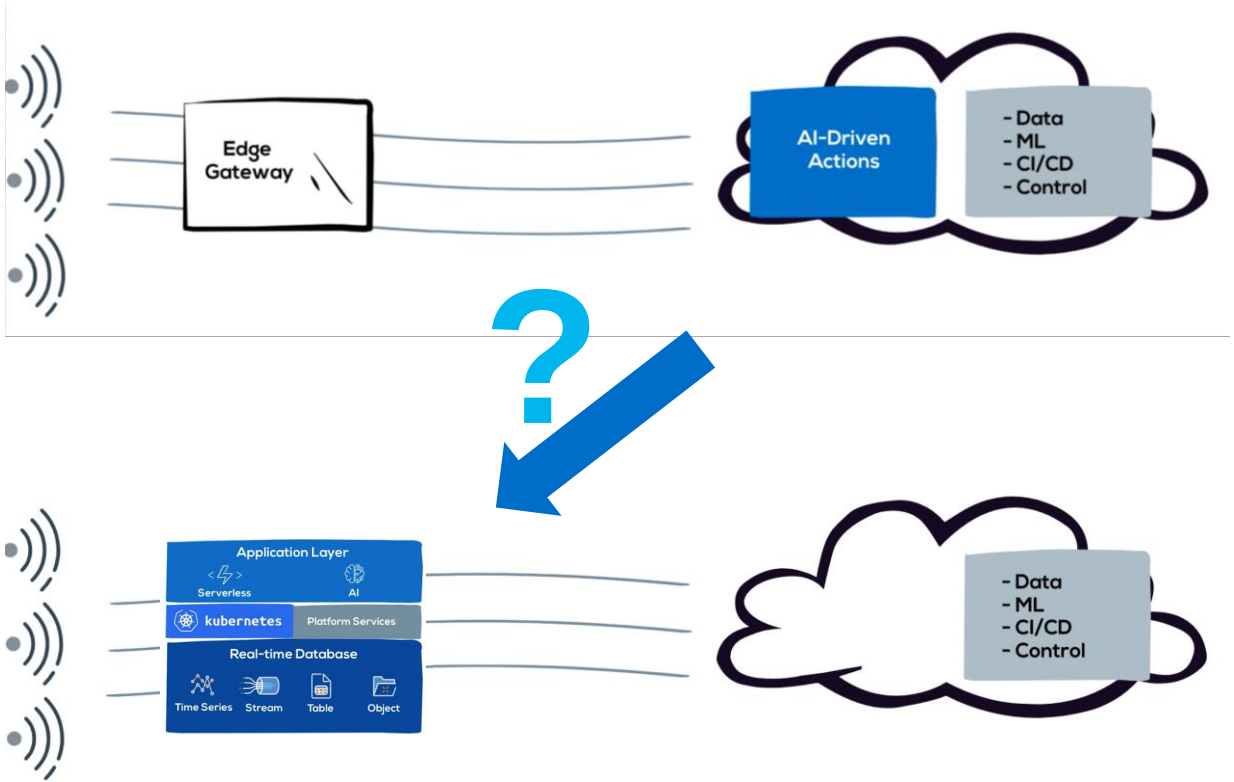
Enabling Intelligent Edge Micro-Clouds

The Data-Driven Business Challenge

From Reactive to Proactive and Intelligent



What does it take to move intelligence to the edge?



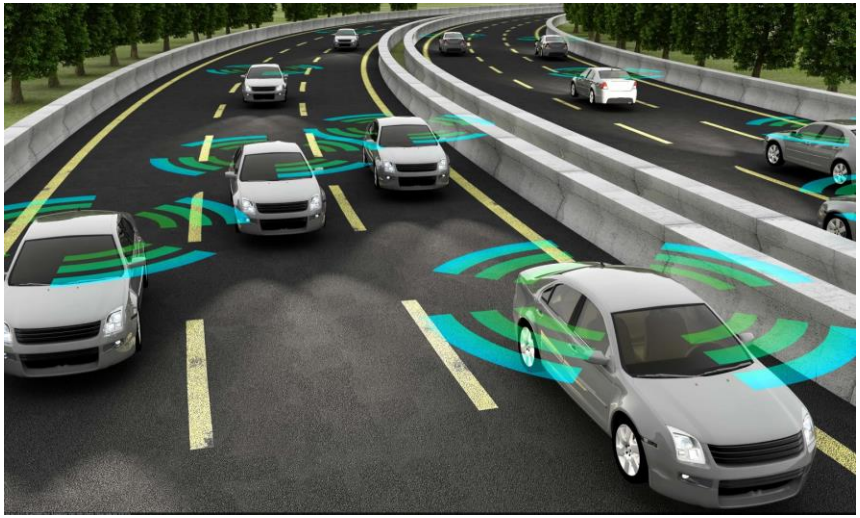
SMART MOBILITY DATA CHALLENGES

Smart mobility applications require data intensive analytics and AI

- Rendering supply and demand heat maps in real-time
- Correlating large volumes of driver and passenger data with external data sources, such as local events, news, weather and social media in real-time

The solution: GPU as a Service at the edge

- Edge computing: Overcoming latency and bandwidth constraints for real-time response needs
- GPU as a Service at the edge: Maximizing rendering and parallel data processing efficiency at the edge and at small footprint



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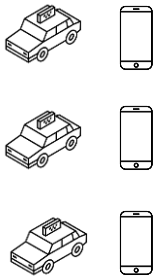
SMART MOBILITY TECHNICAL SOLUTION

Driver and Passenger Data



Data Ingestion

Rendered heat maps and fraud preventative actions

Generate Real-time Heat Maps and Insights at the Regional Edge

iguazio Data Science PaaS

Real-time Data Collection

Data Intensive Processing

Real-time Serving

NVIDIA GPUs

Push sampled / aggregated / raw data to the cloud

Deploy trained models to sites

Passenger and Driver DB

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Azure

aws

Google Cloud

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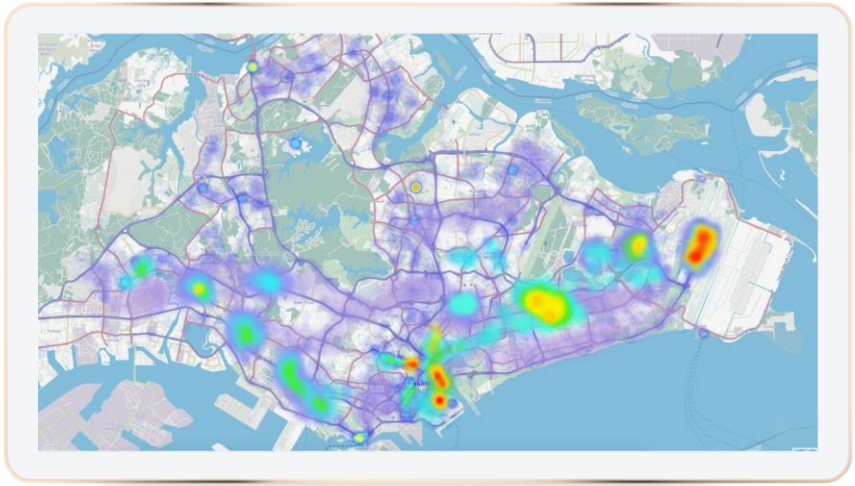
SMART MOBILITY EFFICIENCY AND REVENUE GROWTH



- Real-time supply and demand heat-maps
- Real-time fraud prevention
- Surge pricing calculations by correlating passenger demand with external data sources
- Determining optimal routes to avoid congested areas

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NETWORK OPERATIONS DATA CHALLENGES

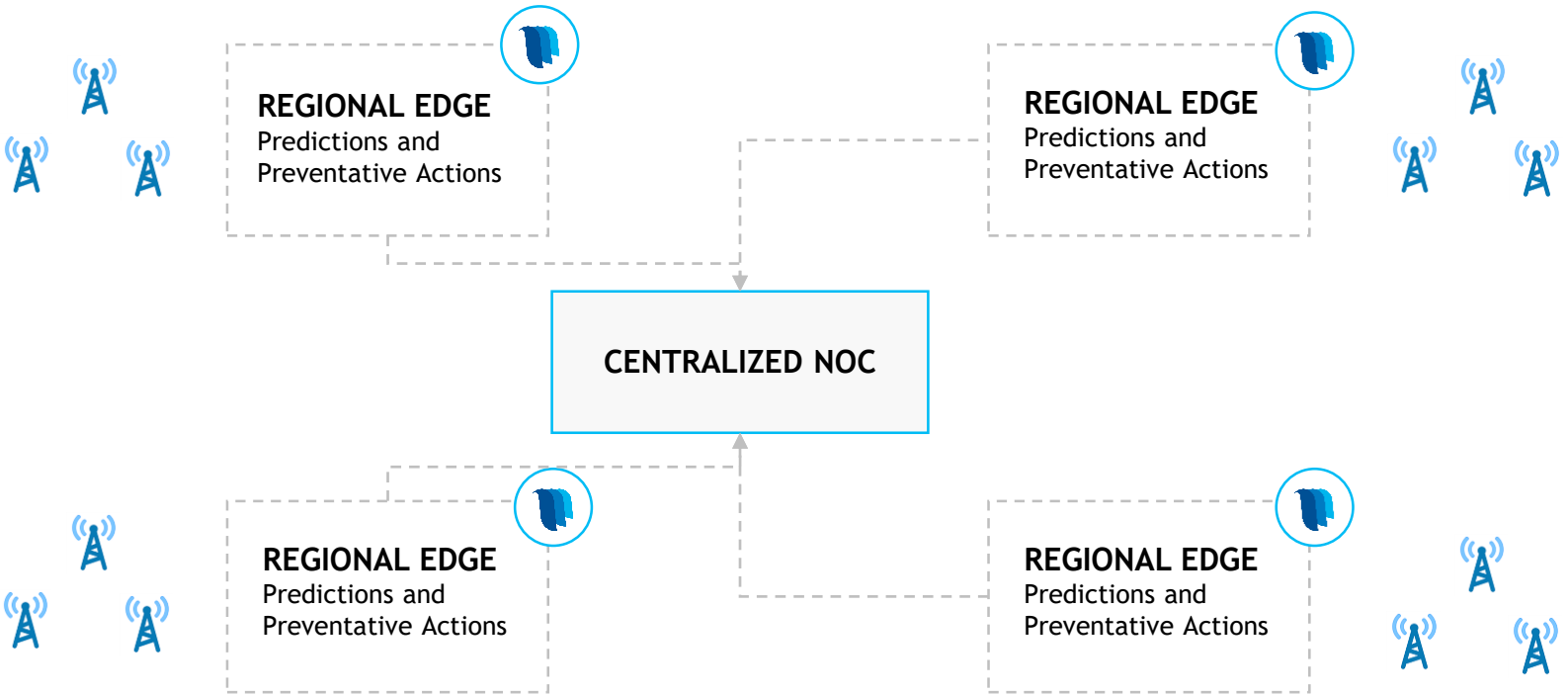
The transition to 5G networks requires new data intensive processing solutions for AI applications

- More network equipment to monitor and therefore more telemetry data to analyze
- Increasing need to inspect operational data in real-time and prevent outages (as opposed to detect)
- Sensitive data requiring a secure environment at the edge

The solution: GPU as a Service at the edge

- Edge computing: Securely overcoming latency and bandwidth constraints for real-time response needs
- GPU as a Service at the edge: Parallel and data intensive processing and serving at the edge

NETWORK OPERATIONS TECHNICAL SOLUTION



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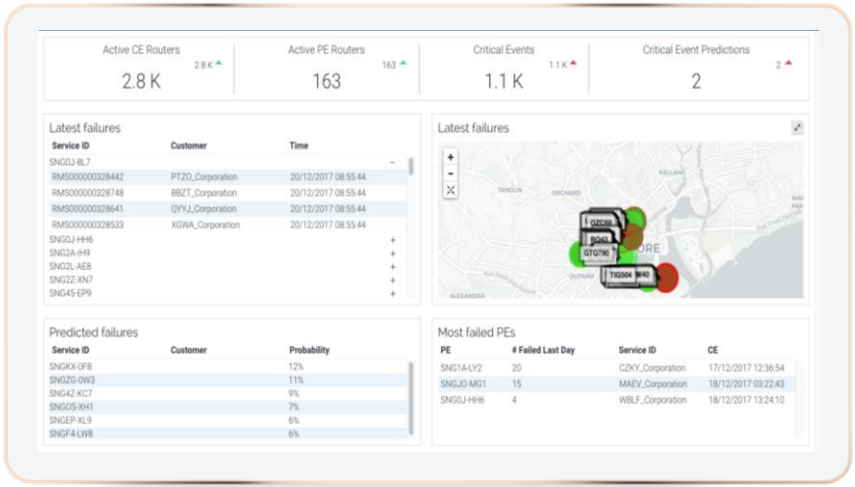
NETWORK OUTAGE PREDICTION AND PREVENTION



- Maximizing network performance
- Eliminating service outages
- Handles pro-rata 125k events per year
- Accuracy of the automatic incident management model is > 80%
- 60% tickets are pre-emptively generated from their automated monitoring systems

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SMART FACTORY DATA CHALLENGES

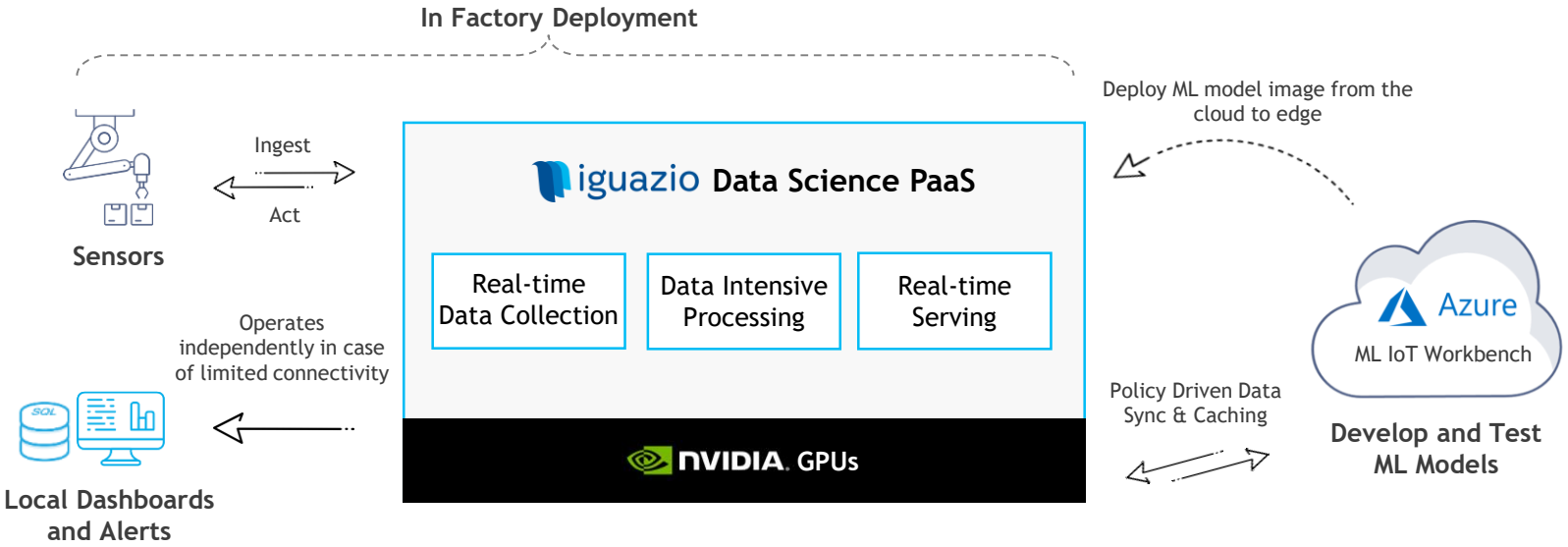
The emergence of IoT has driven demand to access and analyze far greater amounts of data, at far greater speeds and far more efficiently than ever before

- Processing unprecedented volumes of data from machines
- Inspecting operational data in real-time to avoid malfunctions
- Sensitive data requiring a secure environment at the edge

The solution: GPU as a Service at the edge

- Edge computing: Securely overcoming latency and bandwidth constraints for real-time response needs
- GPU as a Service at the edge: Maximizing GPU utilization at the edge for data intensive processing and serving

SMART FACTORY TECHNICAL SOLUTION



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PREDICTIVE MAINTENANCE WITH REAL-TIME AI

- Predictive maintenance for failure prevention
- Auto-healing in case of evolving malfunctions
- Constant yield optimization

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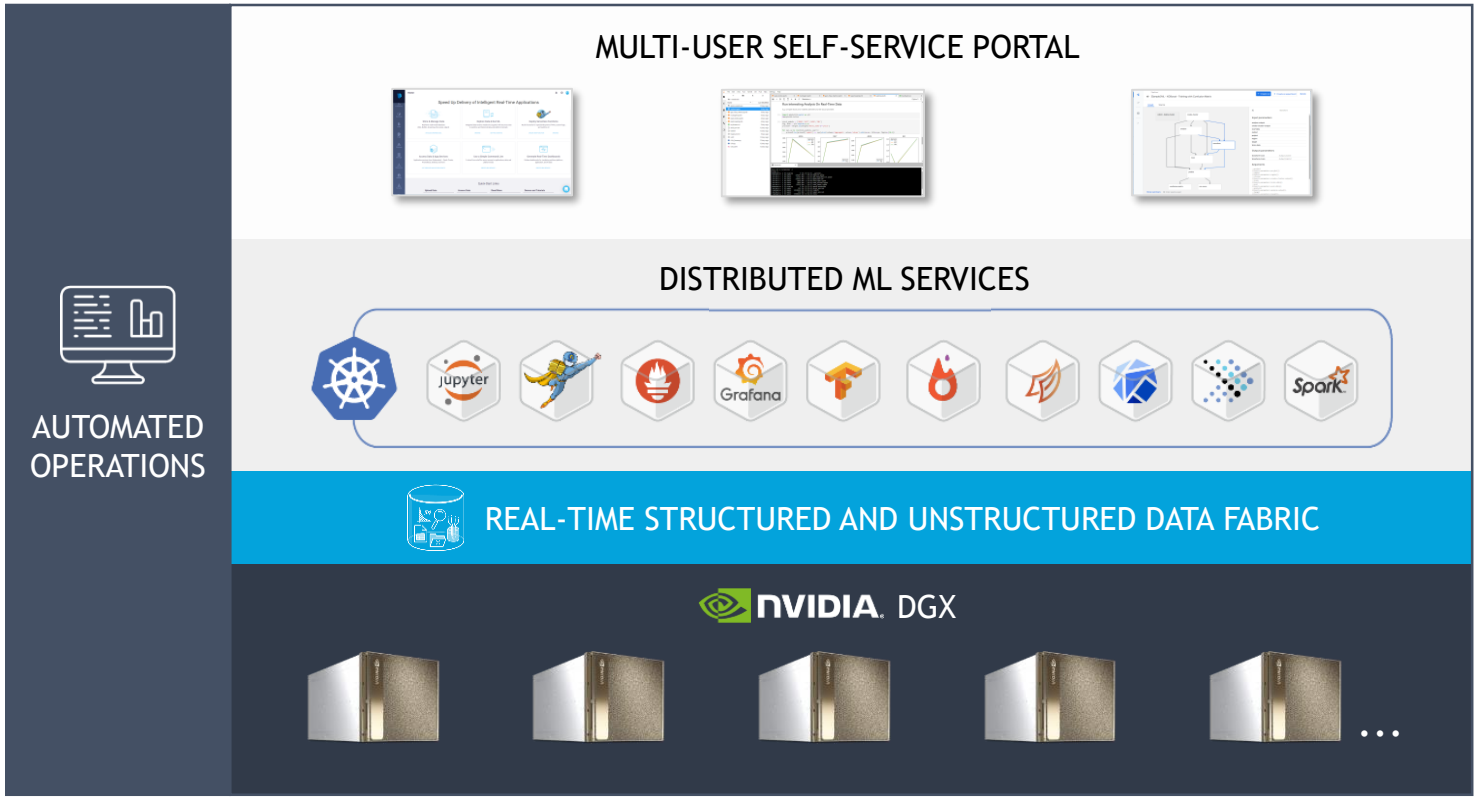
IGUAZIO GPU AS A SERVICE OVER NVIDIA DGX