Data Platforms for AI & ML

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FMS 2024

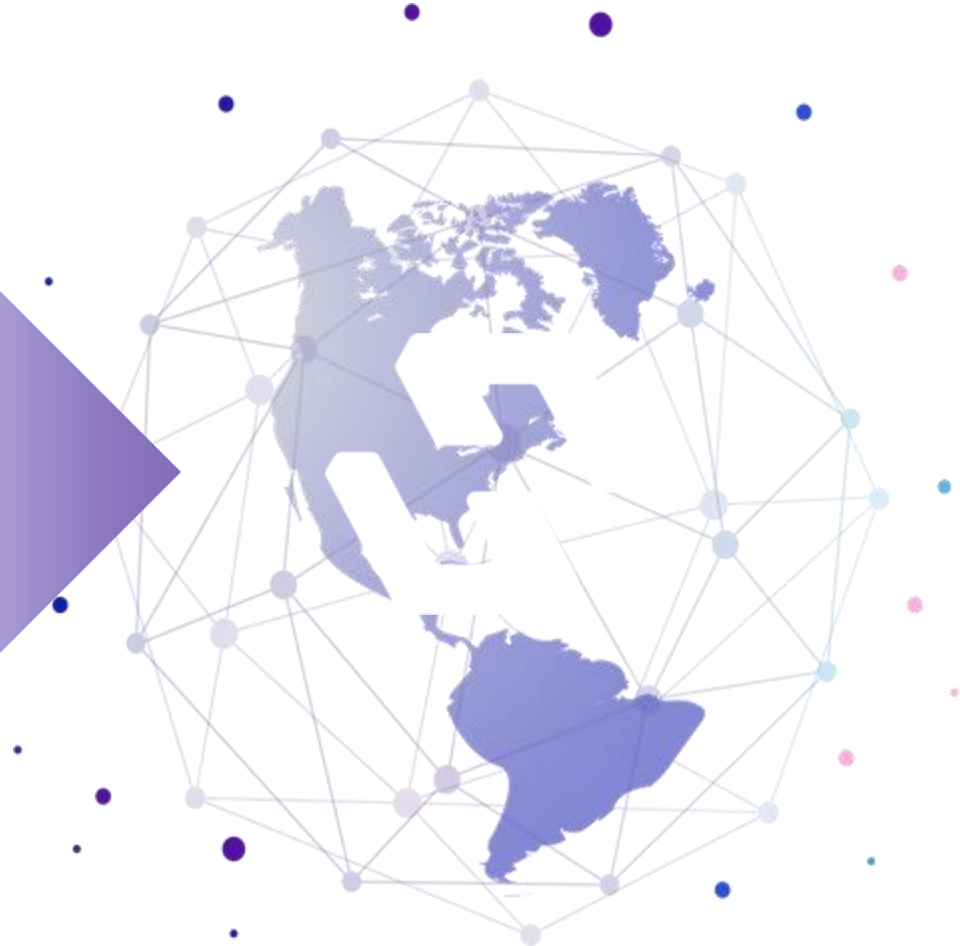
the Future of Memory and Storage

Major Industry Trends Driving AI Storage Requirements

LLM Training
Load and Iterate in GenAI

Large, Decentralized
Data Sets

Multi-Site
Multi-Cloud
Remote AI Researchers



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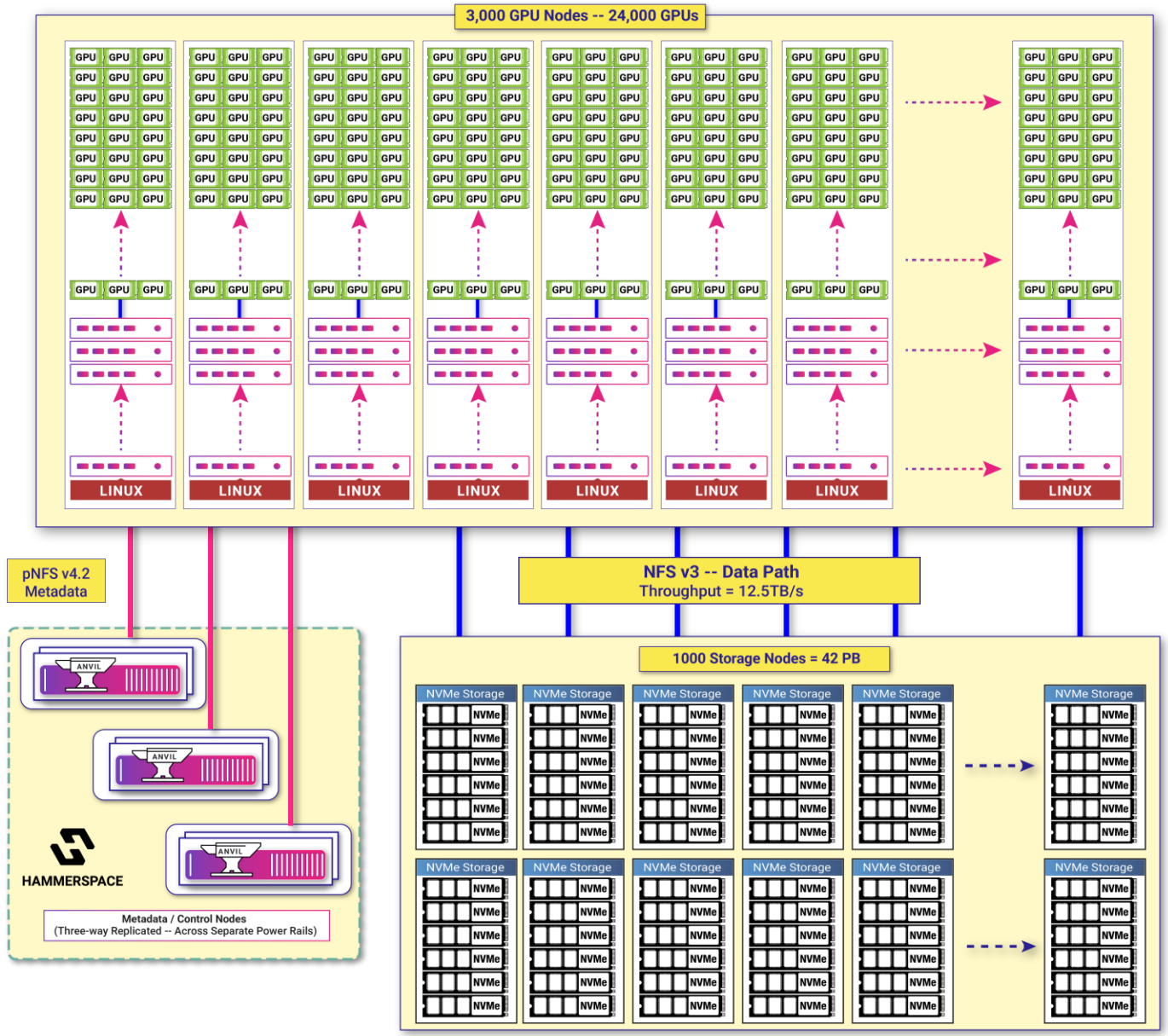
Meta Llama LLM Training Data Architecture

- Standards-based and plug-n-play
- 1,000+ node storage cluster
- 24,000 GPUs, soon to be 350,000, then 1M
- Highly reliable (100's of nodes can fail)
- Performance of 12.5TB/sec (100Tb/sec)
- Use existing storage servers (OCP)



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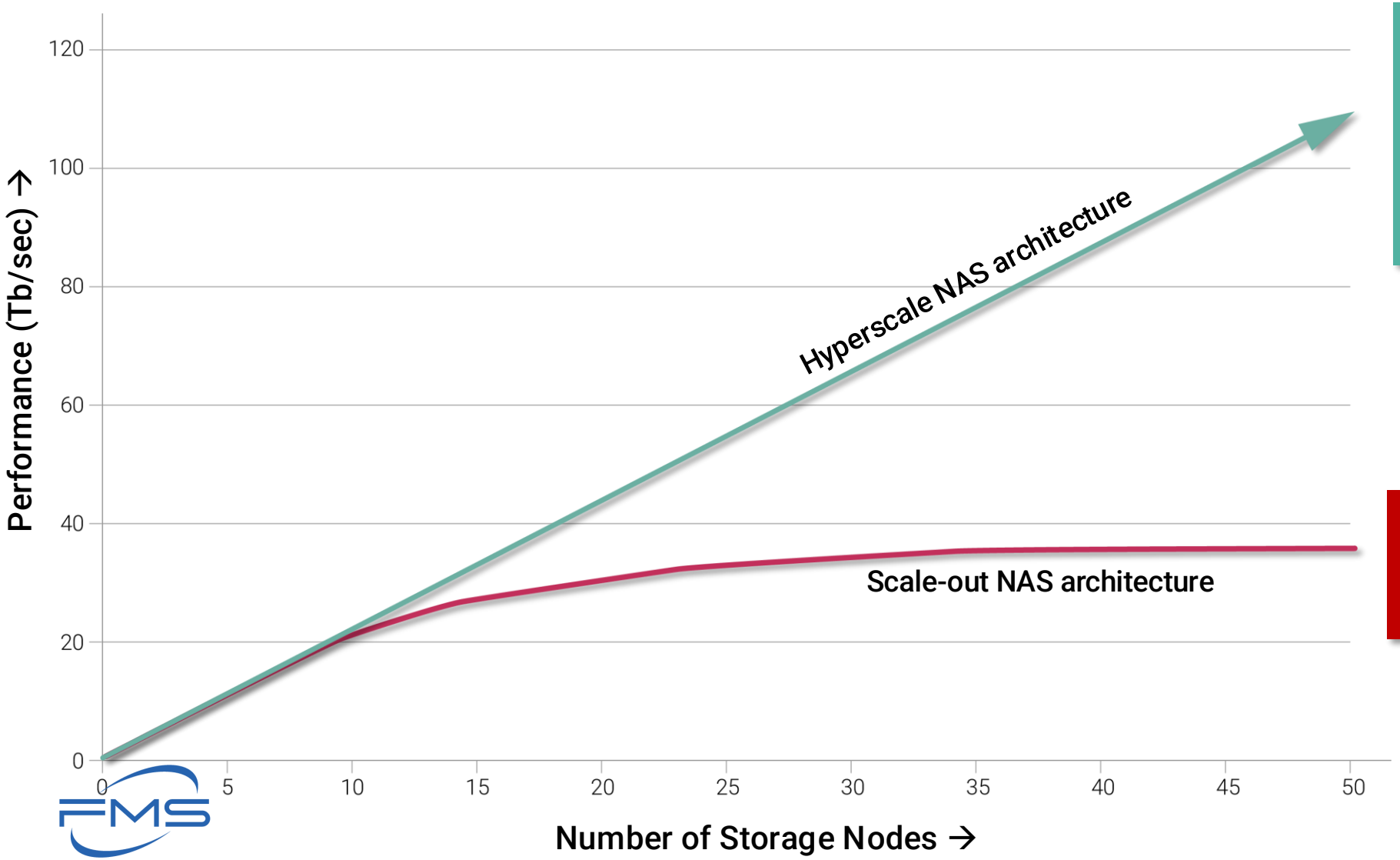
Massive Linear Performance Scalability Required



Hyperscale NAS increases performance linearly as node count increases.

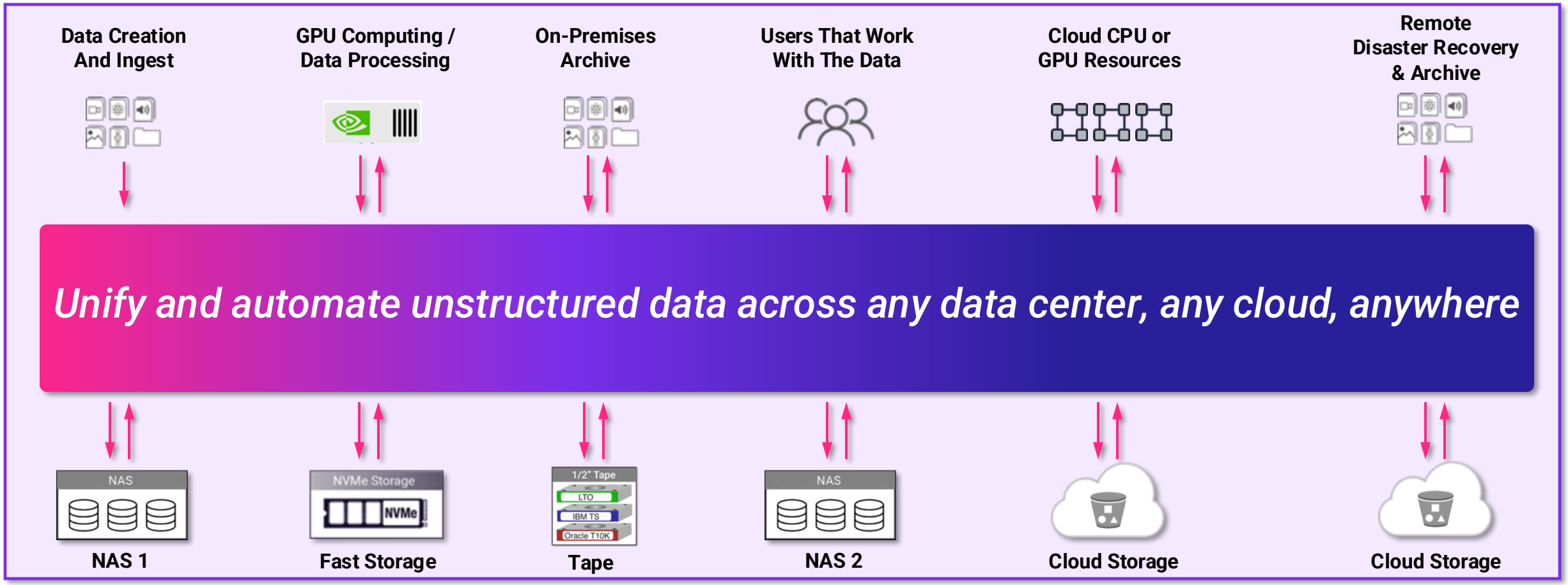
So far proven at over 1,000+ storage nodes.

Scale-Out NAS performance plateaus as storage nodes increase

Data Platform Requirements for Optimal AI Results

	Scale-Out NAS	HPC File Systems	Webscale Architectures	Hyperscale NAS	Hyperscale NAS Global Data Platform
SAFE Reliability, Availability, Serviceability	✓	✗	✓	✓	✓
EASY Standards-Based, Plug-N-Play	✓	✗	✗	✓	✓
FAST HPC-Class Performance	✗	✓	✗	✓	✓
AFFORDABLE Cost Effective at Scale	✗	✓	✓	✓	✓
DATA ASSIMILATION Instant, Data-In-Place, No Copy	✗	✗	✗	✗	✓
DATA ORCHESTRATION Non-Disruptive, Cross-System Data Movement	✗	✗	✗	✗	✓
GLOBAL FILE SYSTEM Multi-Site, N-Way Active/Active	✗	✗	✗	✗	✓
PROGRAMMABLE METADATA Custom Tags, Cross-Platform Metadata Inheritance	✗	✗	✗	✗	✓
ADVANCED DATA SERVICES Global Snaps, Clones, Versioning, WORM, etc.	✗	✗	✗	✗	✓

Global Data Platform's Power AI/ML



Thank you!

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