Artificial Intelligence: Solution Selling AI

TD SYNNEX Partners

NetApp

John J. Theobald
Technical Solutions Specialist – Ai & Analytics
01.17.24

What you will learn in this session

8x growth in last 3 years

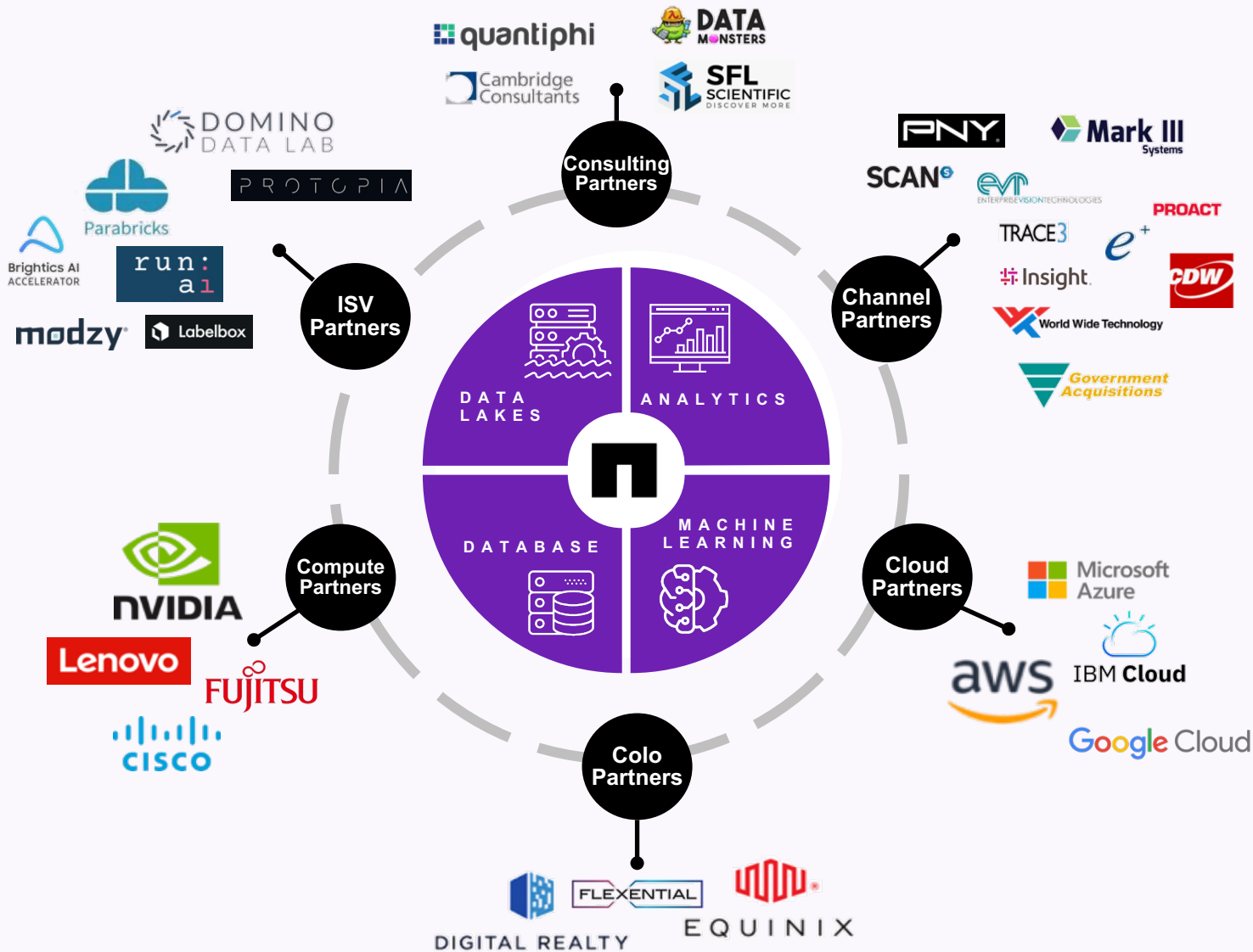AI is the **largest source of net-new data** being generated.

Gen AI, Data Lakes, and Analytics **projects are everywhere!**

We have a **market-leading and differentiated portfolio.**

There are **new buying personas** that you need to engage with.

We have **winning Specialist teams** to help develop and close.

… And it drives **Win in Flash**

Leverage a massive AI ecosystem with customer data on NetApp at the center of it all

AI Headlines

NVIDIA

- Gen AI models running **5X** the competition

- Retail, Drug Discovery, and Public sector seeing **success**

- **80%** + market share

PONG YUEN

- NetApp partnering with NVIDIA are helping Pong Yuen use AI to **simulate large fire accidents**. They are using machine learning for both intelligent fire detection and evacuation as well as construction risk management.

YaleNewHavenHealth

- Yale School of Medicine is using the NetApp AI solution to help adapt changing analytical needs, such as the rapid shift from human genomics to **COVID-19 analytics**.

CyberAgent

- By using the NetApp solution Trident CyberAgent doesn't have to worry about storage and focus on **improving the usability** of their AI platform.

Success in AI is rewarding

7x companies that succeed at AI will be fastest-growing (Forrester)

$16T in business value by 2030 (PwC)

76% of executives acknowledge that they **struggle to scale AI successfully**

18% of companies have **implemented multiple enterprise AI projects**

(Deloitte, PwC)

Why partner with NetApp AI

2022
- Frost & Sullivan Best Practices Award, **North American AI Healthcare Solutions Enabling Technology Leadership**
- **Best Overall Computer Vision Solution** from AI Breakthrough Awards
- **AI Excellence Award for Natural Language Processing (NLP)** from Business Intelligence Group

2021
- **Stratus Award for Top Products/Services** from Business Intelligence Group

2020
- **Best Machine Learning Platform** from AI Breakthrough Awards

2019
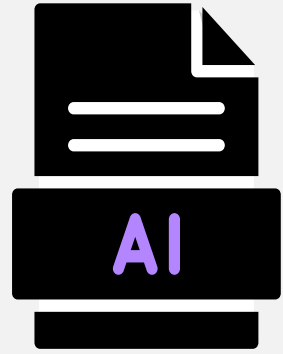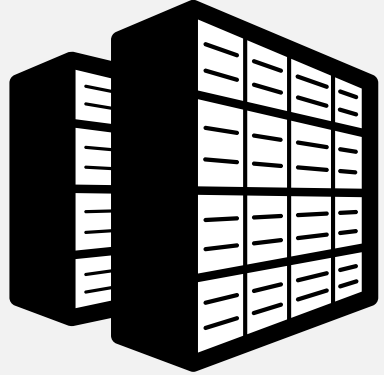- AI Breakthrough Award winner for **Best AI Solution for Big Data**
- Alconics winner for:
  – **Corporate Innovation in AI**
  – **Best Application of AI in Healthcare** (runner-up)
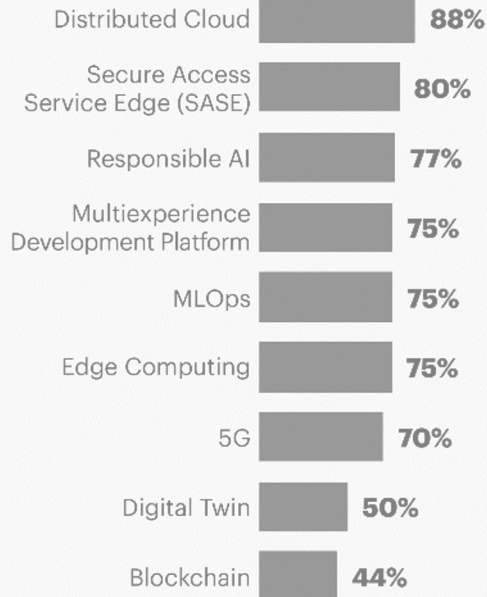
How **BUSINESS LEADERS** see AI

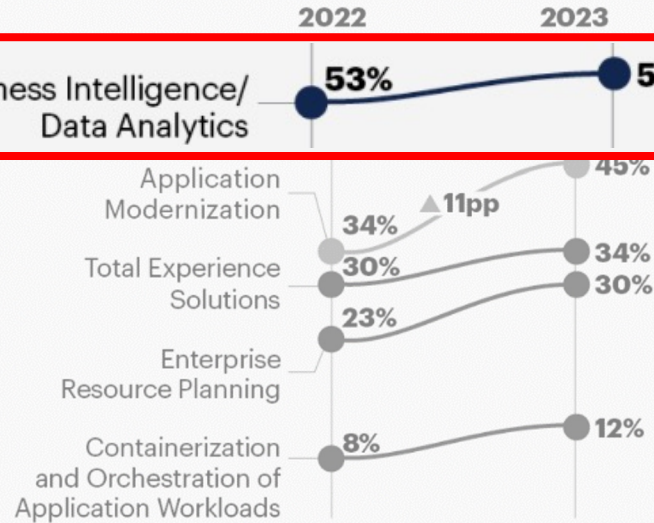DATA → AI → VALUE

AI is where customers are spending money…

Which technologies are most likely to be implemented by 2025?

Technology	%
Artificial Intelligence/ Machine Learning (AI/ML)	**92%**
Distributed Cloud	88%
Secure Access Service Edge (SASE)	80%
Responsible AI	77%
Multiexperience Development Platform	75%
MLOps	75%
Edge Computing	75%
5G	70%
Digital Twin	50%
Blockchain	44%

For which technologies will more CIOs increase funding in 2023 compared to 2022?

Technology	2022	2023
Business Intelligence/ Data Analytics	**53%**	**56%**
Application Modernization	34%	45% (▲11pp)
Total Experience Solutions	30%	34%
Enterprise Resource Planning	23%	30%
Containerization and Orchestration of Application Workloads	8%	12%

>50% of Execs expect **AI use will be widespread or critical** to core business functions **by 2025**

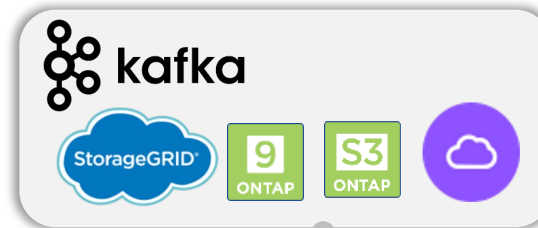**MIT Technology Review**

Gartner

NEW for FY24

AI Training & Hybrid MLOps
Hybrid MLOps platform provides
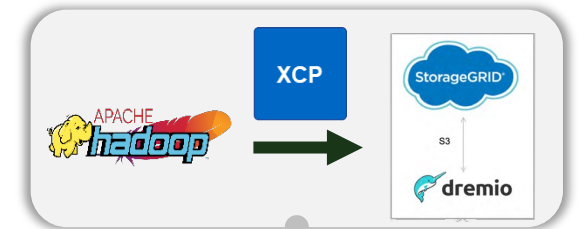consistent experience for data scientists

Decouple compute and storage
Drive performance and cost savings

Solution Update
NVIDIA BasePOD with ONTAP AI
Reference Architecture,
- later validated with DGX H100 -

Performance Improvement
NFS over RDMA with GDS
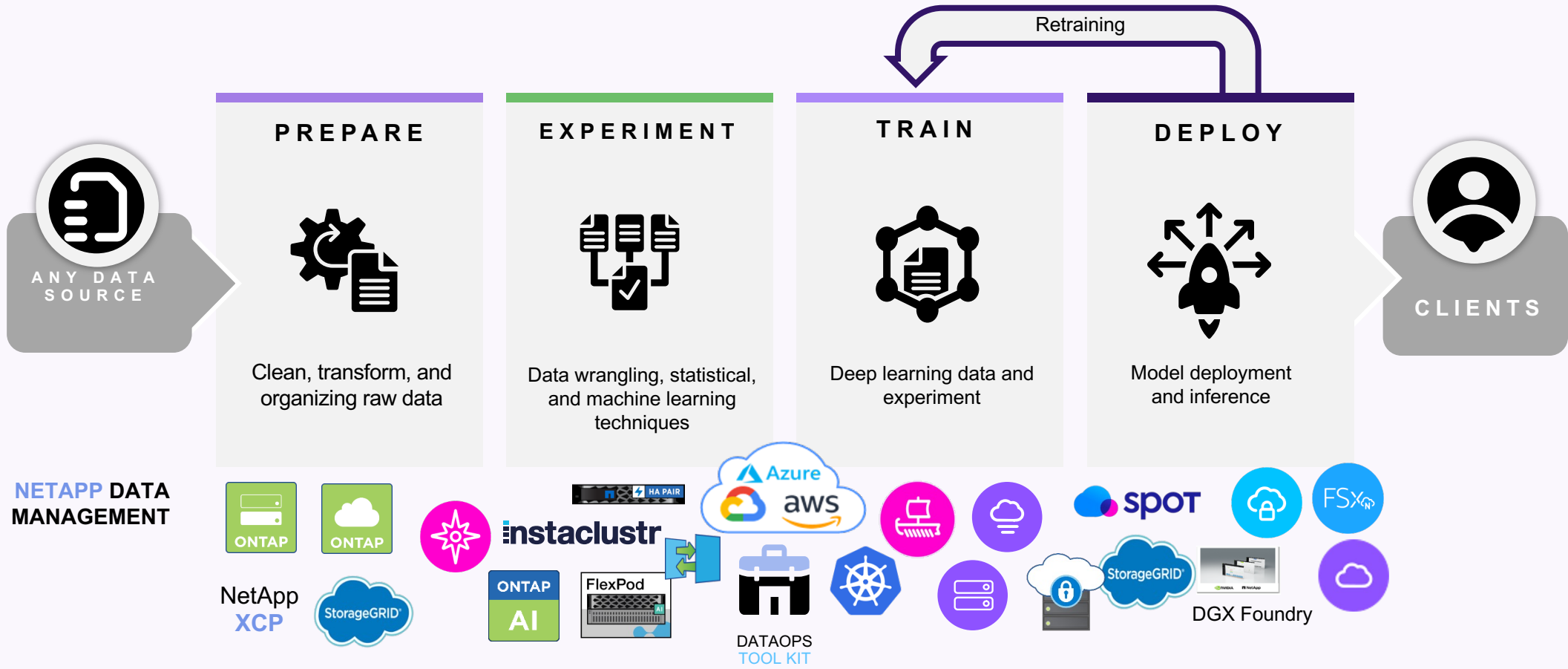Keeps scarce GPUs processing

Establish Hybrid Data Pipelines
Optimize streaming data with Kafka

Modernize Hadoop
Unlock PBs of storage for
AI and Analytics

Win in **F L A S H**

Win in **C L O U D**

Sell the **P O R T F O L I O**

Building the industry's most integrated data ecosystem for AI

ANY DATA SOURCE

Retraining

PREPARE
Clean, transform, and organizing raw data

EXPERIMENT
Data wrangling, statistical, and machine learning techniques

TRAIN
Deep learning data and experiment

DEPLOY
Model deployment and inference

CLIENTS

NETAPP DATA MANAGEMENT

ONTAP · ONTAP · NetApp XCP · StorageGRID · instaclustr · ONTAP AI · FlexPod AI · HA PAIR · Azure · aws · DATAOPS TOOL KIT · SPOT · StorageGRID · DGX Foundry · FSx

What **ARTIFICIAL INTELLIGENCE** actually is...

Artificial Intelligence [AI]

Machine Learning [ML]

Deep Learning [DL]

Generative AI
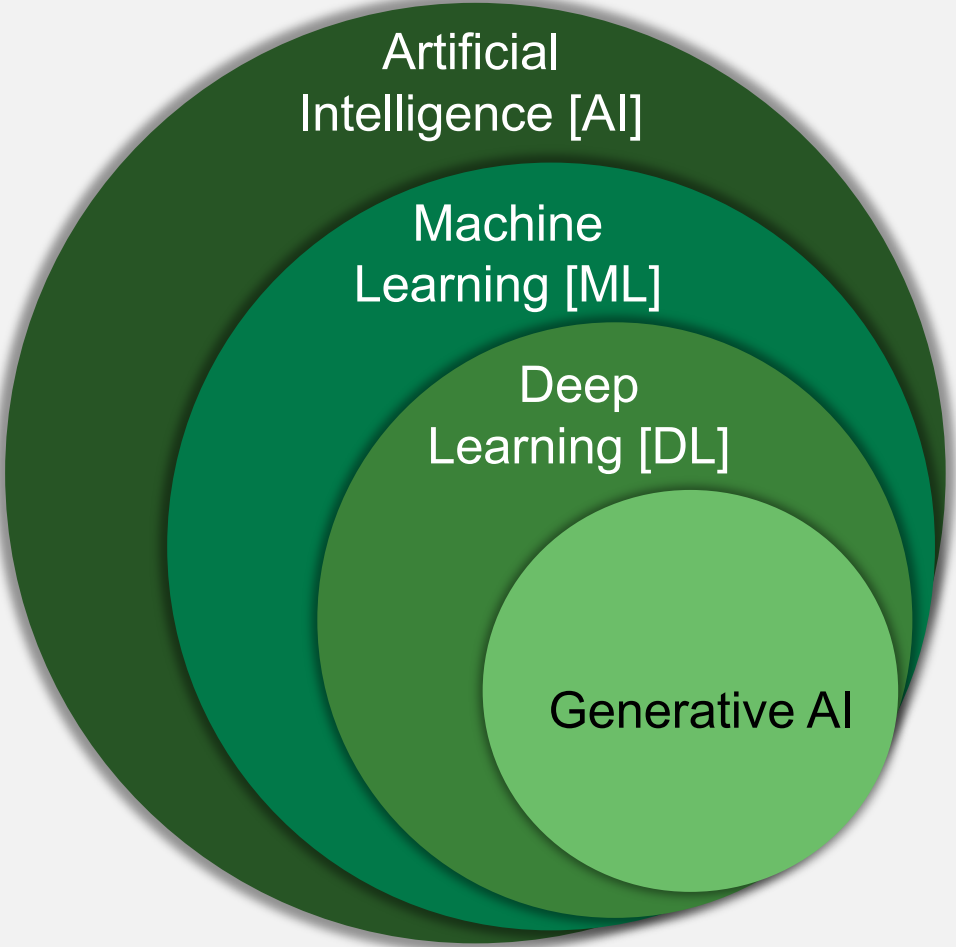
Training **&** Inferencing

Development   Run-time

What does a modern AI environment look like?

Edge

Core

Cloud

Ingest

- Data collection
- Edge-level AI

Data Prep   Training Cluster   Deployment

- Aggregation
- Normalization

- Exploration
- Training

- Deployment
- Model serving

Analysis / Tiering

IBM **Cloud**   Microsoft Azure
Google Cloud   aws

- Cloud AI (GPU instances)
- Cloud tiering / bursting
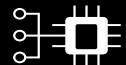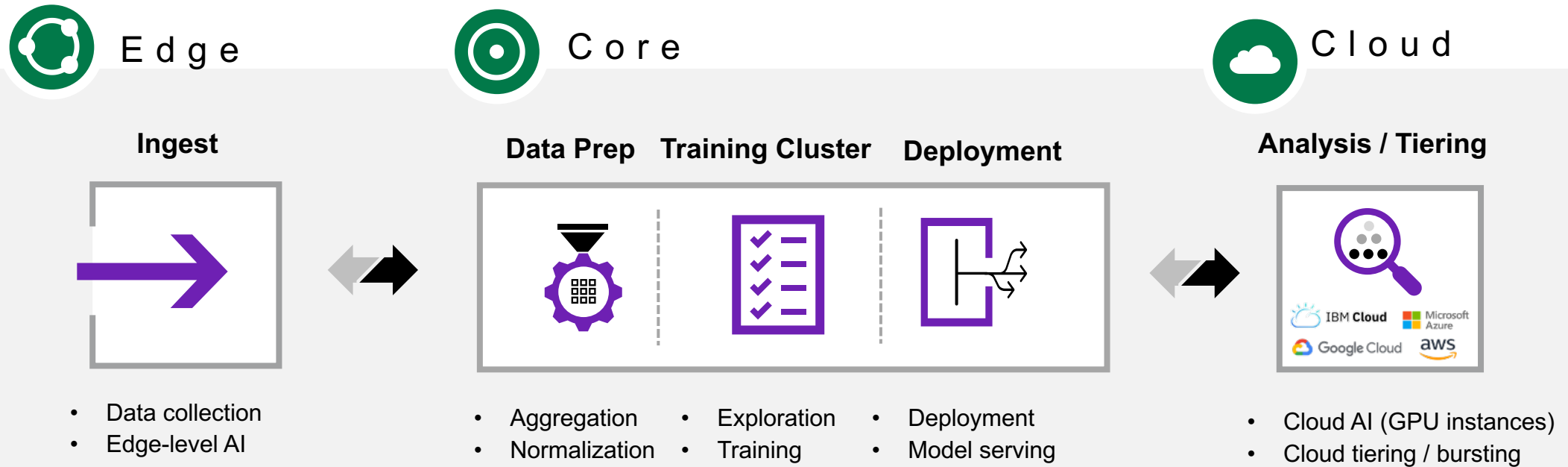
Drive intelligence
at the EDGE
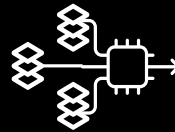
Power training
in the CORE

Accelerated analysis in
the CLOUD

Key Target AI Use Cases

RELEVANCE TO **NETAPP STORAGE** OPPORTUNITY

L O W ← → H I G H

Model Training

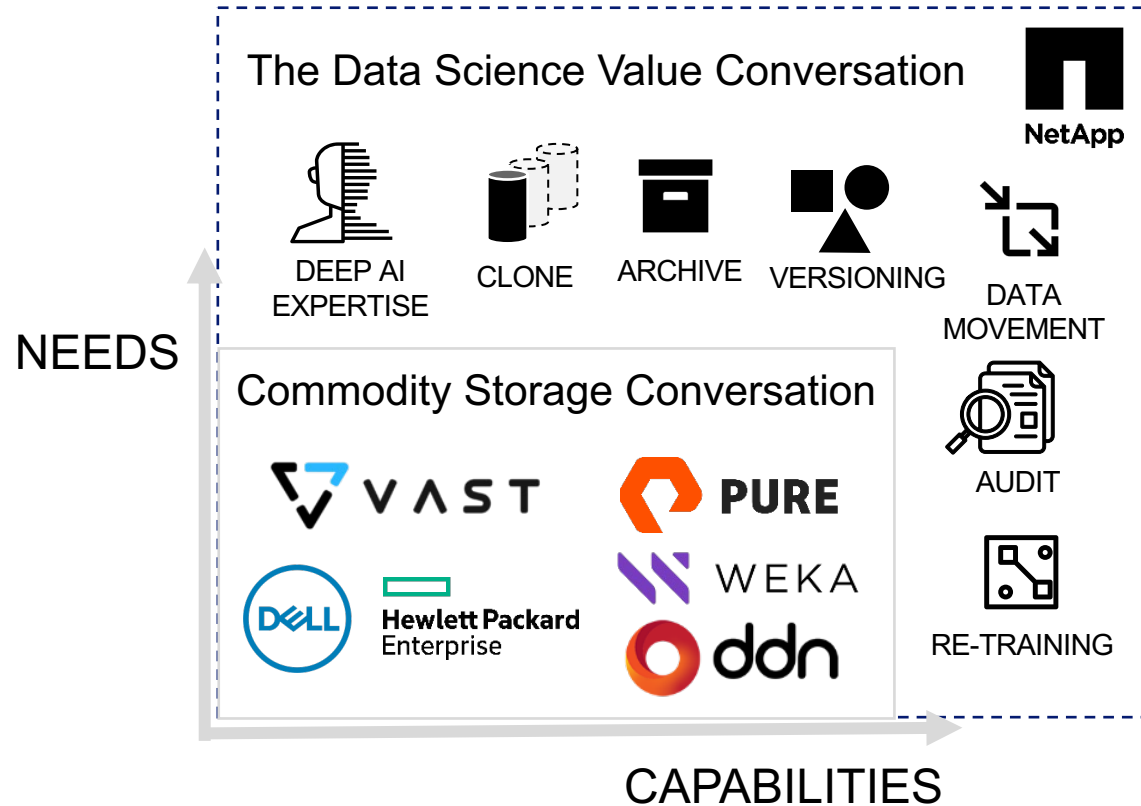| AI prototype on Laptop/Local	Kiosks Chatbot Operations No Training	HPC w/ Parallel File System	General ML inference/ retraining	Computer Vision	NLP		Large Language Models
				Object detection Quality inspection CT, MRI and X-Ray Cancer detection Autonomous driving	Cloud Repatriation Text/Speech Xlation Doc Automation Sentiment analysis Predict Maintenance Campaign analysis Chatbot w/ Training	Fraud detection Portfolio analysis Drug discovery Clinical trials Cybersecurity	Industry model fine-tuning and data governance

Pause
For
Questions

NetApp

NetApp value-added capabilities for AI Model training

1 IT Buyers interprets Data Science Needs

2 Competitors respond with price & performance bid …
NetApp responds with value

3 **Better outcome:** NetApp capabilities enhance data science productivity

NEEDS

The Data Science Value Conversation

NetApp

DEEP AI EXPERTISE · CLONE · ARCHIVE · VERSIONING · DATA MOVEMENT

Commodity Storage Conversation

VAST · PURE · WEKA · ddn · DELL · Hewlett Packard Enterprise

AUDIT

RE-TRAINING

CAPABILITIES
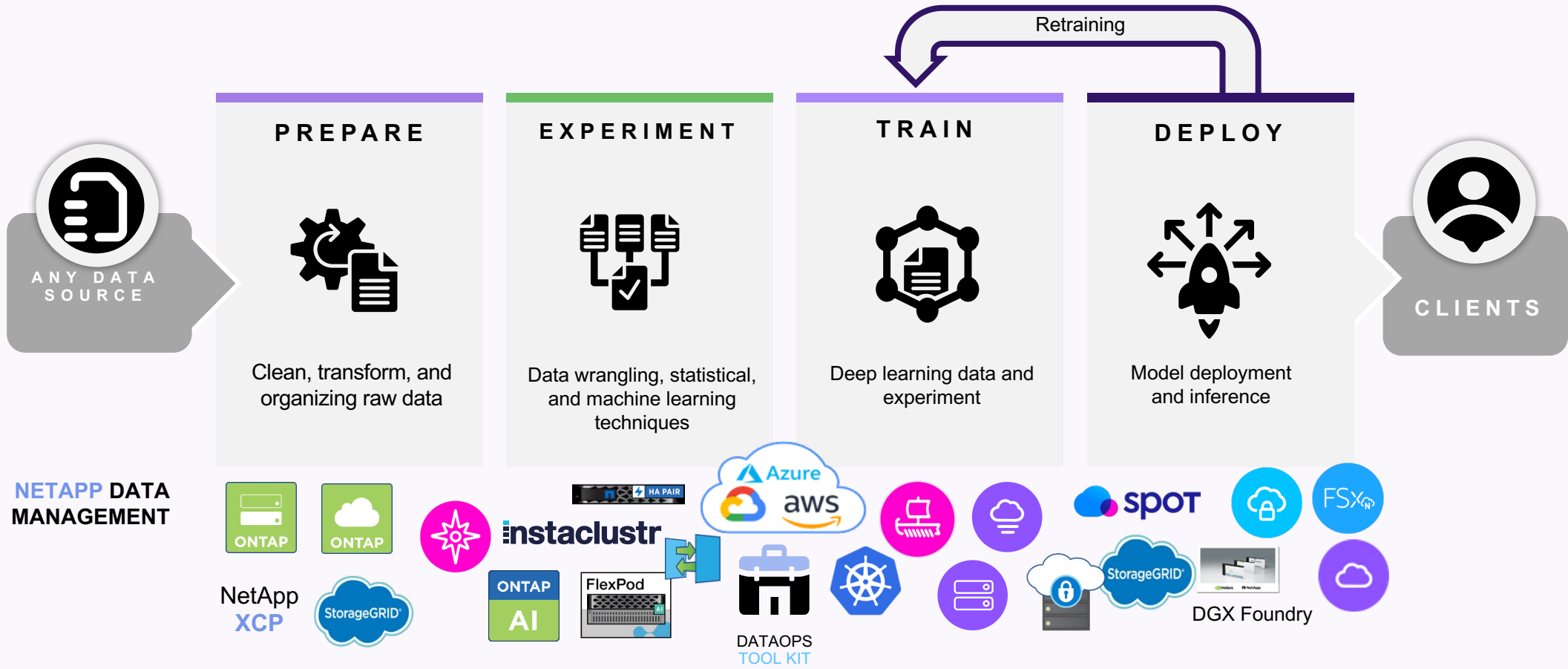
File/Object
Performance
Protect

+ Enhance team productivity
+ Fast model to production
+ Instant cloning
+ Hybrid data pipelines
+ Simplified versioning
+ Model traceability

File/Object
Performance
Protect

Why customers turn to NetApp AI for data services

BEFORE NETAPP	AS-IS → TO-BE	AFTER NETAPP
Bottlenecked data pipeline		Free-flowing data pipeline
Process-driven Speed		Intelligence-driven speed
Slow, oversized dataset copies		Fast, efficient dataset copies
Basic storage capabilities		Advanced storage capabilities
Stuck on the starting block		Hit the ground running

Building the industry's most integrated data ecosystem for AI

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Retraining

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instaclustr · ONTAP AI · FlexPod AI

Azure · aws · DATAOPS TOOL KIT

spot · StorageGRID · DGX Foundry · FSx

NetApp AI verified with AFF C-Series systems

AFF C-Series now included in NetApp's AI-proven architecture powered by NVIDIA DGX

Eliminate the design complexity and guesswork from AI solutions and go from deployment to discovery in days, not months and **now do so for less**

- AFF C-Series added to NetApp's AI ecosystem lowering entry costs with only nominal change in performance

- Provides flash-driven data pipelines from edge to core to cloud, ideally suited for lighter or secondary AI/ML workloads

- Use the optional NVIDIA AI Platform Software or NetApp BlueXP to monitor and control the data environment on-site and in multiple clouds
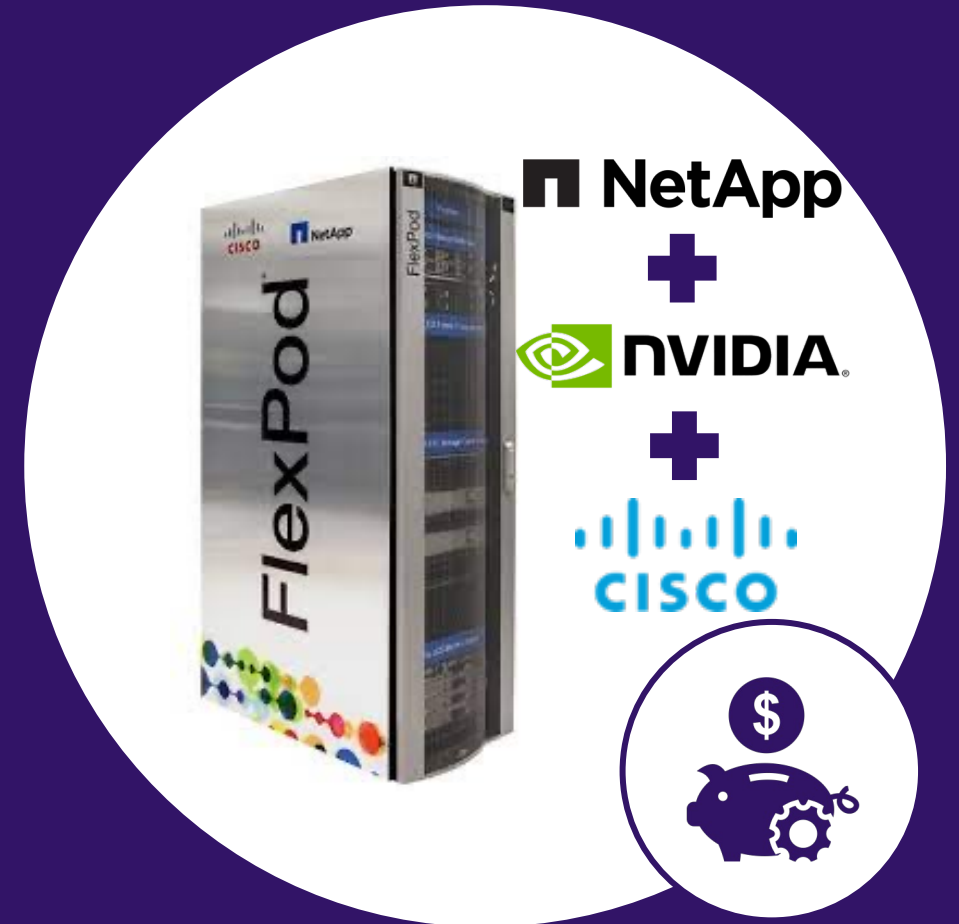

NetApp AI VERIFIED FOR C-SERIES SYSTEMS

NetApp AI verified with AFF C-Series systems

AFF C-Series now included in NetApp's AI-proven architecture powered by NVIDIA GPUs in CISCO UCS Compute nodes.

Eliminate the design complexity and guesswork from AI solutions and go from deployment to discovery in days, not months and **now do so for less**

- AFF C-Series added to NetApp's FlexPod AI ecosystem lowering entry costs with only nominal change in performance

- Provides flash-driven data pipelines from edge to core to cloud, ideally suited for lighter or secondary AI/ML workloads

- Use the optional NVIDIA AI Platform Software or NetApp BlueXP to monitor and control the data environment on-site and in multiple clouds
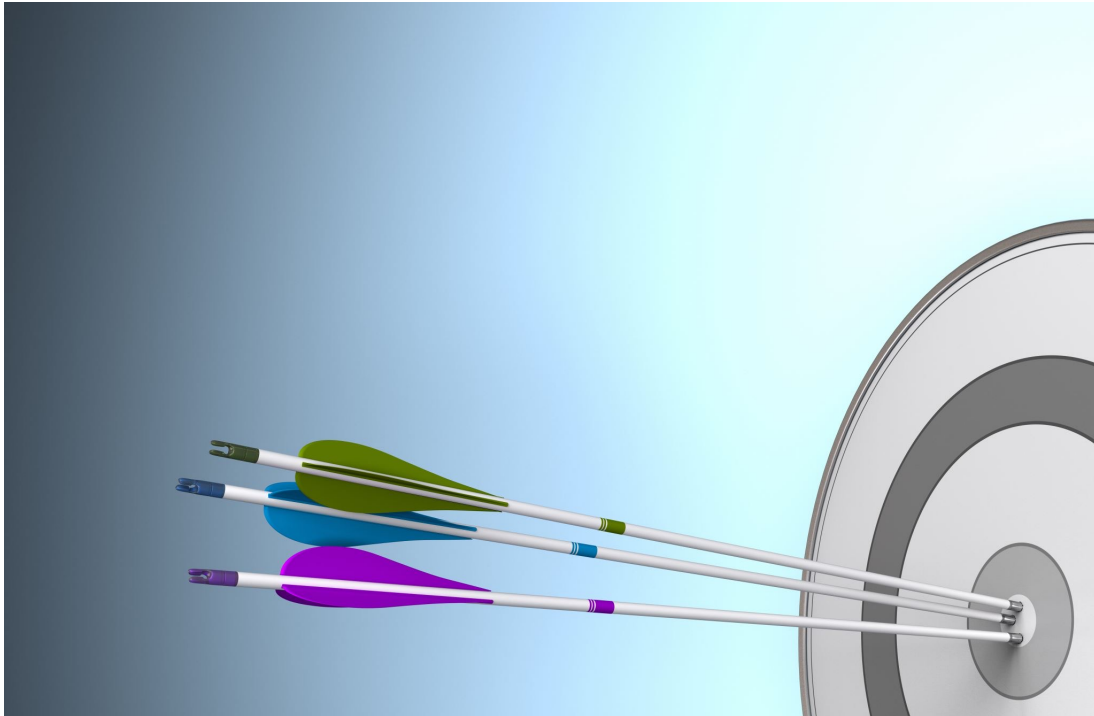
FlexPod AI VERIFIED FOR C-SERIES SYSTEMS

Pause
For
Questions

NetApp

The AI Buyer

NetApp AI buyer attributes

AI Buyers – Data Scientist, Line-of-Business

- AI journey started in the Cloud, now needs **Hybrid or On Prem strategy**

- Data Scientist **productivity** is key to productize AI models

- Data **locality**, **accessibility**, and **availability**

- Actively optimizing **time to production, productivity**

- Care about **Data Governance**, **Data Security**, and **Explainable AI**
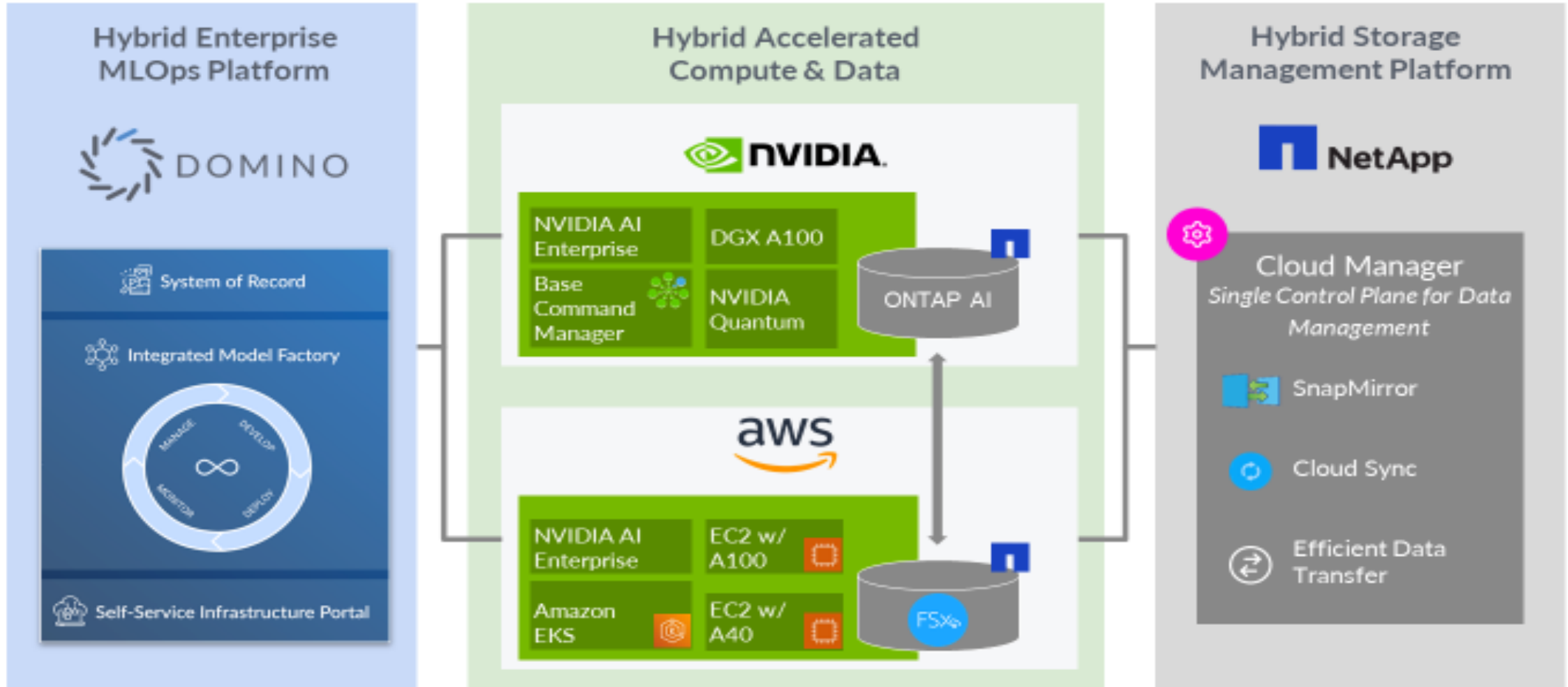
Question for AI buyers
How to signal an AI opportunity

1. Do your data scientists collaborate and share data without copying large data sets?

2. How long does it take to access the rich data sets in your environment?

3. What percentage of your models make it into enterprise production?

4. Do you move model training data between clouds and on premises?

5. How are you addressing data governance, data security and Explainable AI?

Enterprise MLOps platform with NetApp AI and Domino


Integrated AI/ML Workload Solution

Hybrid Enterprise MLOps Platform

DOMINO

- System of Record
- Integrated Model Factory
  - MANAGE / DEVELOP / MONITOR / DEPLOY ∞
- Self-Service Infrastructure Portal

Hybrid Accelerated Compute & Data

NVIDIA.

- NVIDIA AI Enterprise
- DGX A100
- Base Command Manager
- NVIDIA Quantum
- ONTAP AI

aws

- NVIDIA AI Enterprise
- EC2 w/ A100
- Amazon EKS
- EC2 w/ A40
- FSx

Hybrid Storage Management Platform

NetApp

Cloud Manager
Single Control Plane for Data Management

- SnapMirror
- Cloud Sync
- Efficient Data Transfer

DOMINO NetApp nvidia.

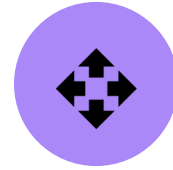# From Demo to POC to pilot to production, you get faster time to value

Succeed today and in the future with a consistent, transformative NetApp data experience

Accelerate AI is the **largest source of net-new data** being generated.
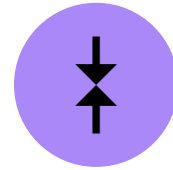
Simplify Gen AI, Data Lakes, and Analytics **projects are everywhere!** Complete routine tasks with ease

Flex Move to any compute and develop environment, in any combination, at any time, so no matter how requirements change, or projects mature, you're ready we have a **market-leading and differentiated portfolio.**

Scale Ensure you can scale up or down and move, however, whenever, wherever you need. There are **new buying personas** that you need to engage with. We have **winning Specialist teams** to help develop and close.

Pause
For
Questions

■ NetApp

NetApp Secure Data Management for AI

The only enterprise storage vendor validated to store top-secret data

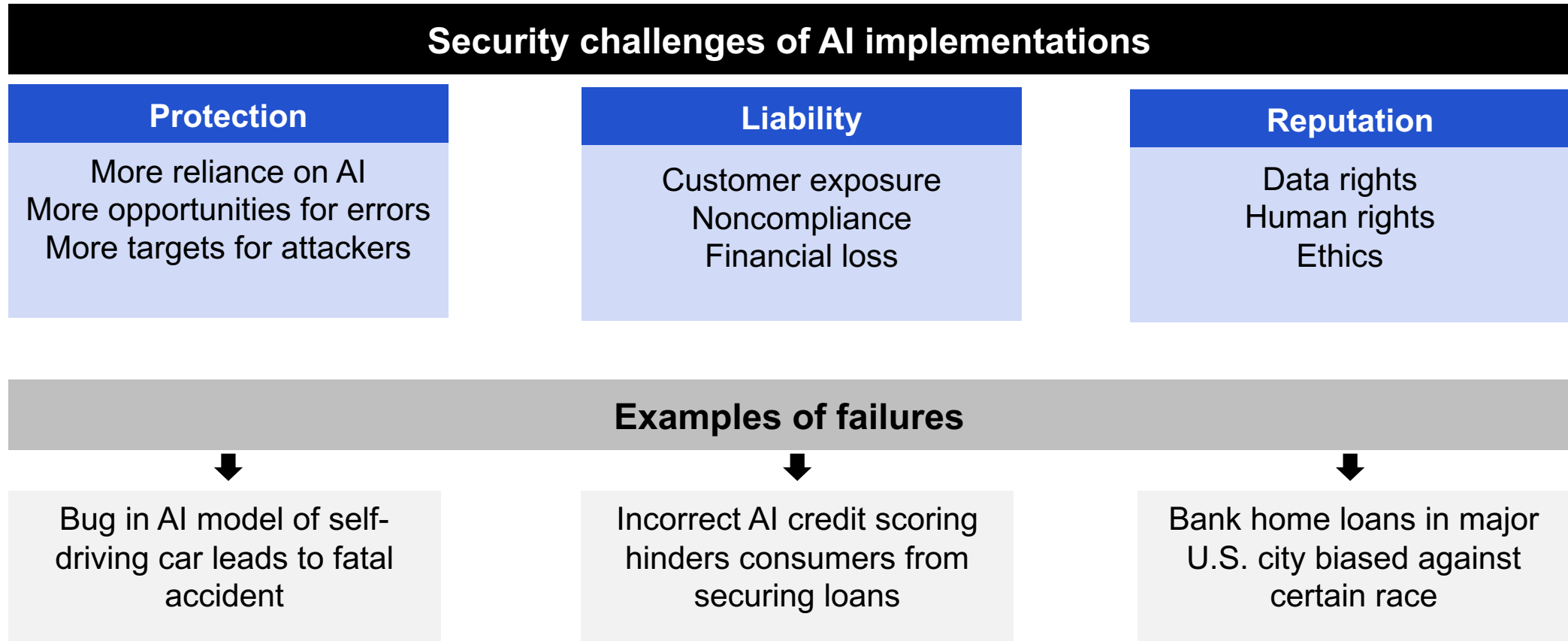Commercial Solutions for Classified (CSfC) Component List

FIPS 140-2

Department of Defense Approved Product List (DoDIN APL)

Common Criteria

As AI enters the enterprise, threats naturally follow

Security challenges of AI implementations		
Protection	**Liability**	**Reputation**
More reliance on AI More opportunities for errors More targets for attackers	Customer exposure Noncompliance Financial loss	Data rights Human rights Ethics

Examples of failures

Bug in AI model of self-driving car leads to fatal accident	Incorrect AI credit scoring hinders consumers from securing loans	Bank home loans in major U.S. city biased against certain race

Source: Gartner 2021

Why NetApp AI? Because we enable you to…

Protect	Detect	Recover
Prevent attacks and minimize data loss or downtime.	Proactively identify internal and external threats.	Quickly restore data and applications.
Accelerated backup and disaster recovery	User activity anomalies	Operational recovery
Data security and retention	Storage behavioral abnormalities	Data recovery
Data efficiency and reuse	File-extension screening	Disaster recovery

NetApp AI cyber-resilience solutions

Ransomware protection	Backup and restore	Disaster recovery and business continuity	Data governance and compliance
Prevent, detect, and rapidly recover from cyberthreats	Rapidly recover data after unplanned data loss and corruption	Maintain data access and support worker productivity	Identify data that you store and comply with retention mandates
Fast, efficient data backup and recovery	Efficient block-level backup to object	Highly available systems	Data classification and categorization
Secure logical air gap	Application-consistent data protection	Efficient data and system mirroring	Regulatory reporting
AI/ML-driven user and storage anomaly detection	Secure WORM file locking with flexible retention	Continued workplace productivity and collaboration	Data retention and compliance

Let's see how we help companys free data with NetApp AI and partnering with NVIDIA

Longstanding Partnership

- Partners since 2018

- Hundreds of joint customers

- Complementary Solution offerings

- Aligned Worldwide Ecosystem partners
  - 35+ joint resellers, plus ISV, MSP, and SDP partners

- Joint solution development
  - ONTAP AI Reference Architecture
  - ONTAP AI integrated solution (Arrow, TD/S, Arrow UK)
  - DGX Cloud
  - LaunchPad (PoC environment)
  - DGX SuperPOD
  - Industry use-case-based solutions

Founded in 1993
Jensen Huang, Founder & CEO

22,500 Employees, $1T Market Cap
$26.9B Revenue, $15B Data Center FY23, 41% YoY

- ➤ 3 Million developers and 8,500 startups have created thousands of GPU-based apps
- ➤ NVIDIA accelerates more than 700 applications today, including the top 15 in scientific computing
- ➤ More than 1,000,000,000 CUDA-based GPUs shipped

DGX/NVDA AI is powering:
- 30 of the top 30 AV Data Centers
- 25,000 companies' AI factories
- 150K Omniverse users
- 200M gamers and creators
- 400,000 developers in HC/LS
- 1M developers for AI at the Edge

NVIDIA's Value to NetApp

- The leader in AI infrastructure lends NetApp credibility in next generation hybrid workloads - AI, Data Lakes, Accel. Compute
- NetApp complements NVIDIA's experience with LoB and Data Scientists with our IT and Data Center expertise
- AI/Analytics is a $10B storage market over the next 3 years, IDC

"Huang has risen to the elite among Silicon Valley's visionary leaders and has led NVIDIA from the maker of computer graphics cards to become the premier platform for artificial intelligence and machine learning. This positions NVIDIA at the forefront as the computing industry contemplates a fundamental shift in processing. NVIDIA saw it coming." TECHCRUNCH

NVIDIA

Hannover Medical School

M H H Medizinische Hochschule Hannover

The Hannover Medical School, founded in 1965, is a university medical centre in the city of Hanover, in Germany, part of a regional medical network

Business challenge

- Streamline diagnostics to be much faster and less costly
- Improve patients' quality of life

Solution

- Video

Use case

- Diagnostic imaging, Chronic Obstructive Pulmonary Disease

Why NetApp

- Run five times more data in the same time
- Provided the right balance of performance and reliability
- Improved image quality, accelerated the data pipeline

> "NetApp was immensely valuable in providing performance and reliability to gain sustained flows of data."
>
> - Dr. Hinrich Winther, resident, Hannover Medical School

CyberAgent

Business challenge

- Accelerate AI development at company-wide level
- AI learning platform allowing multiple engineers to run learning tasks at the same time. It must support containers and Kubernete

Solution

- NVIDIA A100, NetApp AFF A800, Atra Trident, Cloud Volumes ONTAP

Use case

- AI for digital advertising, predictive AI

Why NetApp

- Twice the performance at half the cost
- In addition to serving more targeted ads that generate higher revenue, the storage investments are resulting in 4x cost performance improvement.

"Using Trident enables dynamic storage provisioning from Kubernetes, so users don't need to worry about storage, greatly improving the usability of our AI learning platform."
- Masaya Aoyama, Infrastructure Engineer/Developer Expert, CyberAgent

CA CyberAgent ®

CyberAgent operates internet advertising agency, foreign exchange trading website, and creates PC and mobile contents such as advertisements and games. CyberAgent invests in companies with internet related business

CyberAgent customer success story (PDF)
CyberAgent landing page, CyberAgent Insight session

Cambridge Consultants

Business challenge
- Get ahead of the trends in AI
- Require extreme performance for cutting edge innovation and modeling

Solution
- ONTAP® AI, 1 x A300, 2 x NVIDIA DGX-1, ONTAP FlexClone® and data protection features

Use case
- Advanced AI research

Why NetApp
- Cutting edge performance and ONTAP features
- Proven data management for demanding environments

> " One of the key reasons our deep learning storage is based on NetApp is the positive experience we have had with the technology in the past."
>
> - Tim Ensor, Director of Artificial Intelligence, Cambridge Consultants

Cambridge Consultants is a global product development and technology consultancy firm providing outsourced research and development services
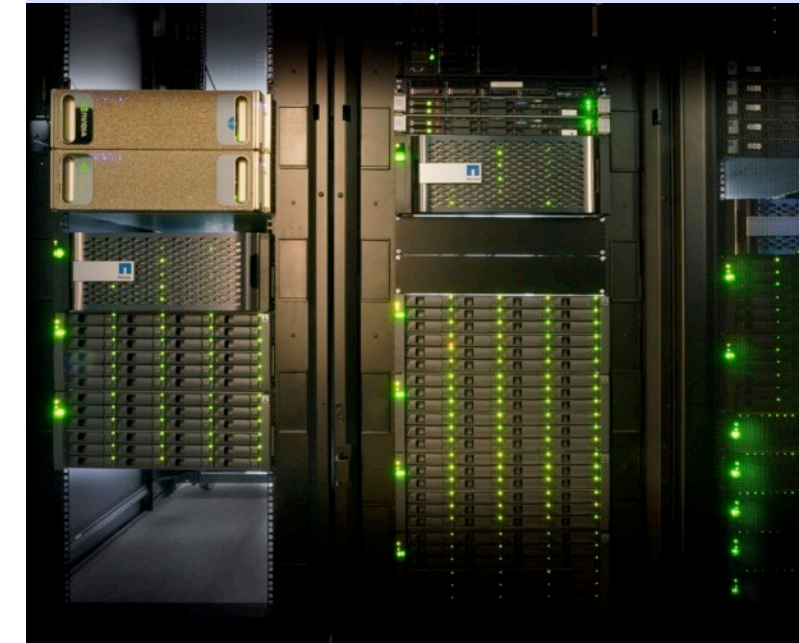
Let's accelerate your NetApp AI success

01 Create an AI Joint Business Plan

02 Engage NetApp AI Specialists

03 Check out Partner Sphere and leverage AI Resources

Questions?

NetApp

Thank You!

NetApp

Back Up

∏ NetApp

Target AI Customer Personas

|	AI Leads	AI Creators	Executives	Infrastructure Leads	Business Leads
	Head of AI, Chief Data Officer, AI CoE	Data Scientist, ML Engineers, AI Research Scientist	CIO, CTO, CEO	IT Infrastructure Lead, VP/Director of IT	LOB owner
Challenges	• Staffing concerns • Governance of data and AI systems • Converting research projects into productive business solutions • Overcoming chasm of failed AI projects	• Seamless application performance and data availability, accessibility, and security • Turn raw data into insights to make money, save money or reduce risk	• Minimizing risk to protect broad business goals • Find business solutions that simplify and add value	• Building a scalable production environment that's future-proof • Maintaining production workloads to SLAs	• Compliance and regulations • Keep pace with technology innovation • Meet customer needs • Deliver actionable insights
KPIs	• Projects delivered on time and under budget • Volume, Variety and Velocity of data	• Data availability and utilization • Meeting key project benchmarks	• Stock price / shareholder value • Market share growth • AI ROI and balanced cost/benefit	• Cost of ownership • Availability and performance metrics	• Time to market • Revenue growth • Market share growth • Customer satisfaction

Questions for Data Lakes buyers

How to signal a Data Lakes and/or Analytics opportunity

- Is your data accessible for **AI Data Scientists**?

- How are you managing **data governance**?

- How do you **protect** your data from risk?

- Are you interested in **reducing your storage costs** and with **simplicity**?

- Is your data architecture **scalable** to support growth?

- Do you need to **simplify** streaming data?

- Does your data architecture support **Hybrid Cloud**?

- How are you planning to **manage** your Hadoop data going forward?

- Are applications requiring **multi-protocol data access**?

Computational Health Platform Win

NEW Data Feeds
- IoT
- Structured DB
- POR
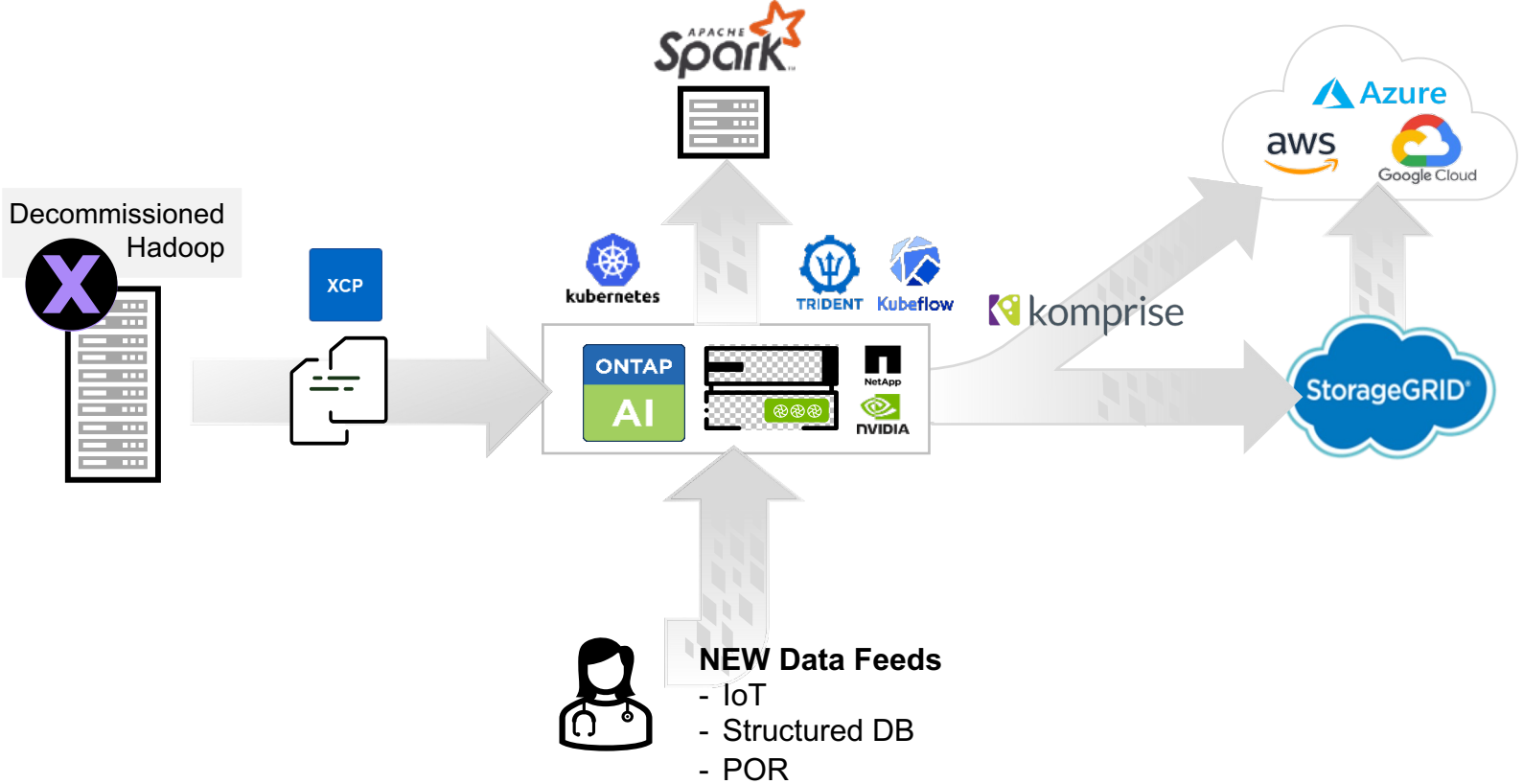
DESIGN GOAL

- Disaggregates storage from compute

- Reduce licensing costs for Hadoop

- Increase collaboration across teams and data scientists

- Supports Spark analytics and AI Training

- Path toward Cloud

- **Standardize security model**

- **Increase flexibility for compute**

NetApp Technologies

- **FlexClones**
- **File/Object Duality**
- **Snapshots**
- **FabricPools**

- StorageGRID ILM Engine -

Get Performance at scale and better TCO for Splunk

De-couple compute and storage, Provide data services for performance, availability and cost savings

Unstructured data from anywhere

splunk>

LOG

WARM

StorageGRID®
S3

REMOTE STORAGE

COLD

splunk>

LOG

Unstructured data from anywhere

COLD
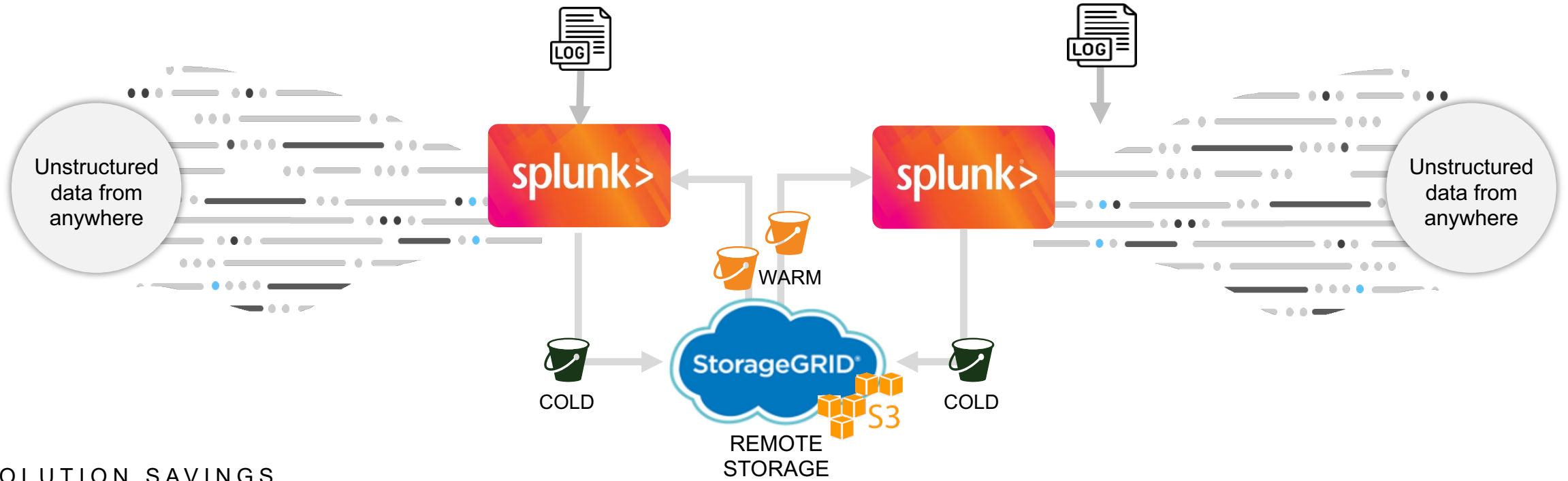
SOLUTION SAVINGS

-15%
Software and OS licenses (not Splunk licenses)

-26%
Reduction in hardware cost

-20%
Reduced power | cooling | rack space

-31%
No separate backup or archive hardware

>20%
Total TCO reduction over 3 years

Partner opportunity

AI

Partner Sphere

NetApp AI Competencies overview

Artificial Intelligence (AI)

AI with NVIDIA DGX
Partners demonstrate expertise in the successful selling and deployment of AI and analytics solutions based on a mutual partnership with NetApp and NVIDIA.
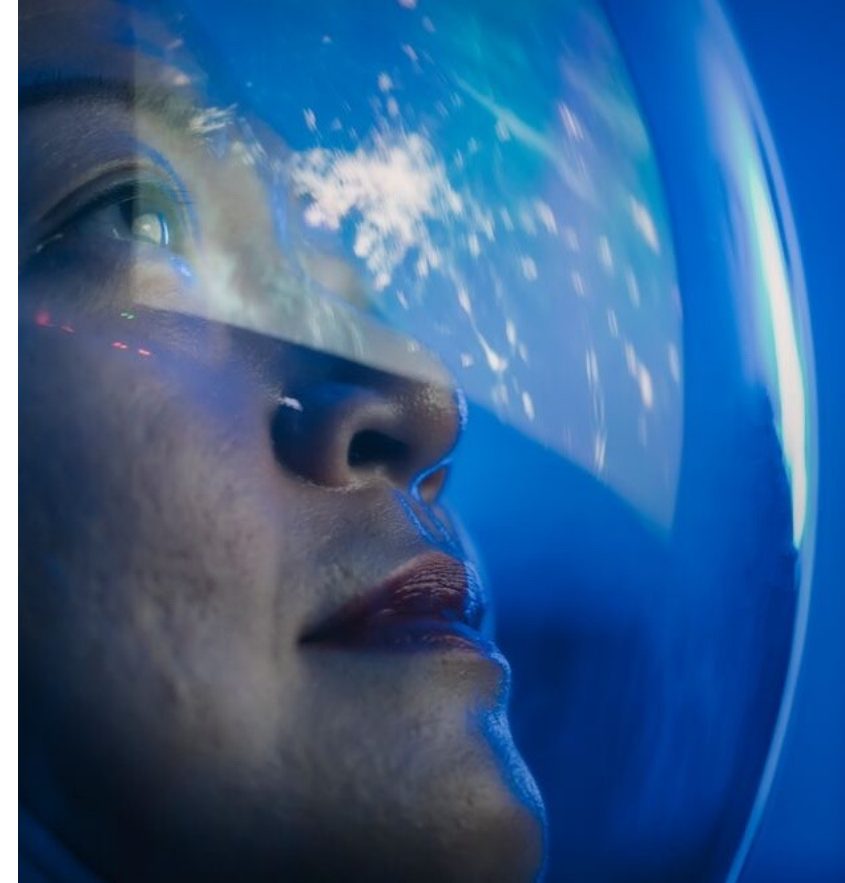
AI with FlexPod AI
Partners demonstrate expertise in the successful selling and deployment of AI and analytics solutions with FlexPod® technology.

Analytics

Data Analytics—Splunk for Security/ITOps
Partners demonstrate expertise in the successful selling and deployment of AI and analytics solutions based on a mutual partnership with NetApp and Splunk.

Resources

- NetApp Partner Sphere on the Partner Hub
- Apply for a Solution Competency
- Partnering with NetApp course
- NLS Solution Competencies workspace

Got questions? Send an email to psphere@netapp.com.

∏ NetApp

# Drive business with NetApp Partner Marketing campaigns

- NetApp offers you a broad variety of ready-to-go channel marketing campaign kits

- All kits are designed to easily drive demand and grow your business

- Assets include emails, social media kits, images, event-related materials, a telemarketing kit, and more

- Campaigns are available for **hybrid cloud, cloud, AI and commercial**

- **Choose your campaign**, customize to your needs then kick it off!

[Access all campaigns here]

AI. Are you getting it right?

Ready-to-go AI campaigns
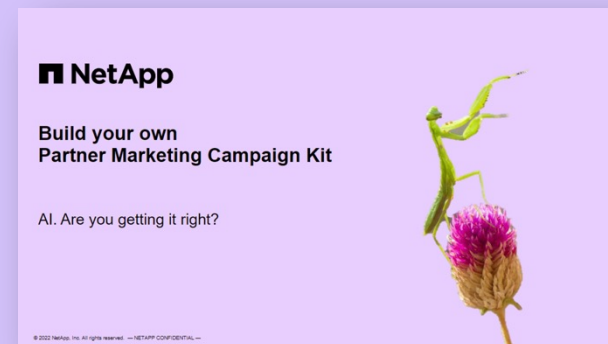
AI. Are you getting it right?

Build your own AI campaigns

Executive Summary

NetApp ONTAP AI technology with solutions for NVIDIA A100 POD
NVIDIA DGX SuperPOD with NetApp certified for success with HPC/NLP workloads
NVIDIA AI Enterprise validated end-to-end, cloud-native AI and data analytics software suite
NVDIDIA DGX Cloud subscription-based service for AI development infrastructure
NetApp AI solutions support AI data and workloads at the edge, core, and cloud
NetApp DataOps Toolkit no competitor offers easy to use Python tools for storage management
NetApp AI Control Plane no competitor offers end-to-end Kubernetes based AI workload management
NetApp Data Fabric offers one experience across on-prem, Azure, Google Cloud & AWS
NetApp storage portfolio supports file, block, and object data on-prem and cloud

Winning Sales Strategy

Find your account's AI personas: search for data engineer, scientist

When you find an AI project: Engage with ng-ai-inquiry

AI BDM team will help with AI Workshop, AI RFP responses, and arrange deep sessions

Convert the opportunity into a PoC and CPOC or channel partner will do testing

Lead with DataOpsToolkit for cloning a data namespace and rapid implementation of workflows with traceability and versioning

Exclusive NVIDIA offerings not available with any storage competitors

Exclusive NVIDIA and Arrow offering not available with any storage competitors

Promote customer success AI Customer success references

Reasons Why NetApp Wins

1. NetApp DataOps Toolkit: Designed for data scientist and engineers with simple to use Python functions to access advanced features without storage expertise
2. NVIDIA integrated offerings: SuperPOD, Base POD, Enterprise AI, DGX Cloud
3. NetApp supports your data fabric: Cloud bursting from on-prem to cloud or cloud to cloud while minimizing cloud operation costs (compute and data egress)
4. Optimum workstreams: ONTAP technology allows optimal performance for multiple concurrent workloads (NFS/pNFS)
5. Mainstream the AI Workflow: with excellent Ethernet bandwidth (including NVMe/TCP, NFSoRDMA), no need for InfiniBand nor parallel file system complexities.
6. Powerful multi-tenancy and QoS, run AI and enterprise workloads in the same cluster
7. Protected and Compliant Data: AI industry's most complete native set of data protection and data security features

Key NetApp Differentiation	DataOps Toolkit	nVidia integrations	Data Fabric	AI Storage Protocols	Data Pipeline	Data Protection and Security
NetApp	Yes	Several	Yes	File, Object, Block	Edge, Core, Cloud	Strong
Competition	No	Few	No	Varies	Varies	Medium to Poor

Click for Latest Version
*Refreshed quarterly

NetApp

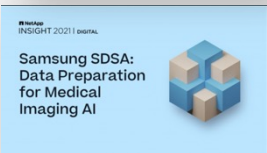# Start accelerating your journey to AI today

Resources

NetApp.tv
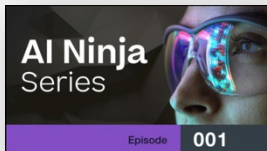
 AI Ninja Series

 Customer Stories

 Insight on Demand

 Industry analysts

Links

- www.netapp.com/ai

- 3D interactive demos

- Connect directly with a NetApp AI specialist

- Best machine learning platform

- Hybrid cloud AI training and inferencing

- Get a faster ROI from your AI investments

- Future-proof your investment

- Reduce your TCO with built-in efficiencies

- Bring your "data rivers" into a unified data lake