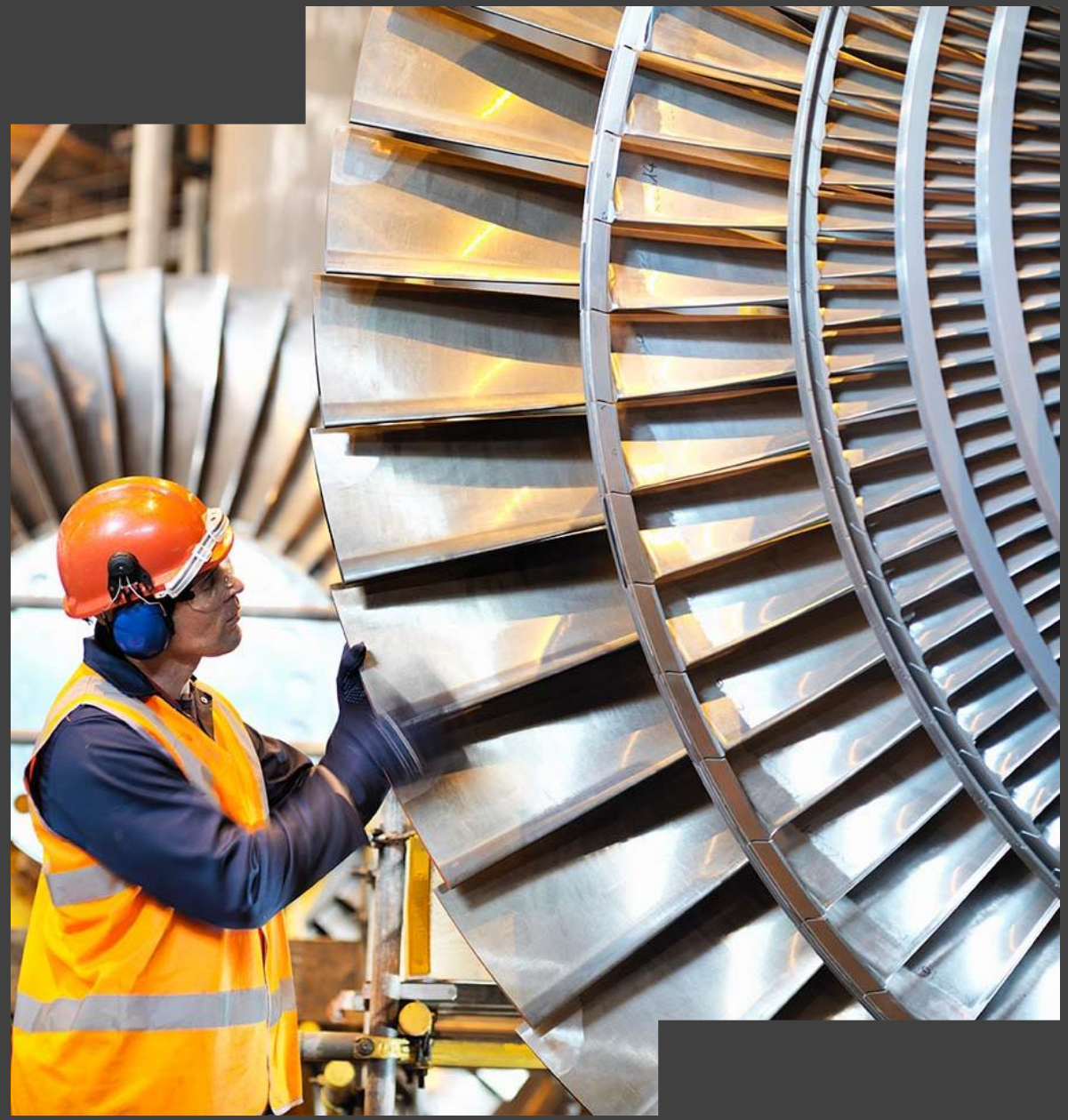
NetApp

CISCO

TD SYNNEX

# FLEXPOD DESIGN UPDATES

August 2025



# FlexPod

## Full Stack Value


- Broad Workloads
- Virtualization
- Deployment
- Cisco UCS Servers
- Cisco Networking
- NetApp Storage

**Security**
Comprehensive security including integrated data encryption, network security, and access controls, designed to protect and meet compliance requirements.

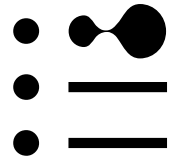
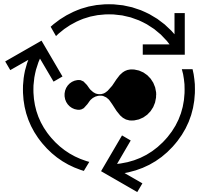
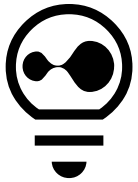
**Simplicity**
Simplified IT management with a unified interface and automation, reducing administrative overhead and streamlining operations.

**Predictability**
Validated architectures deliver consistent performance and reliability, reducing deployment risks and ensuring predictable outcomes.

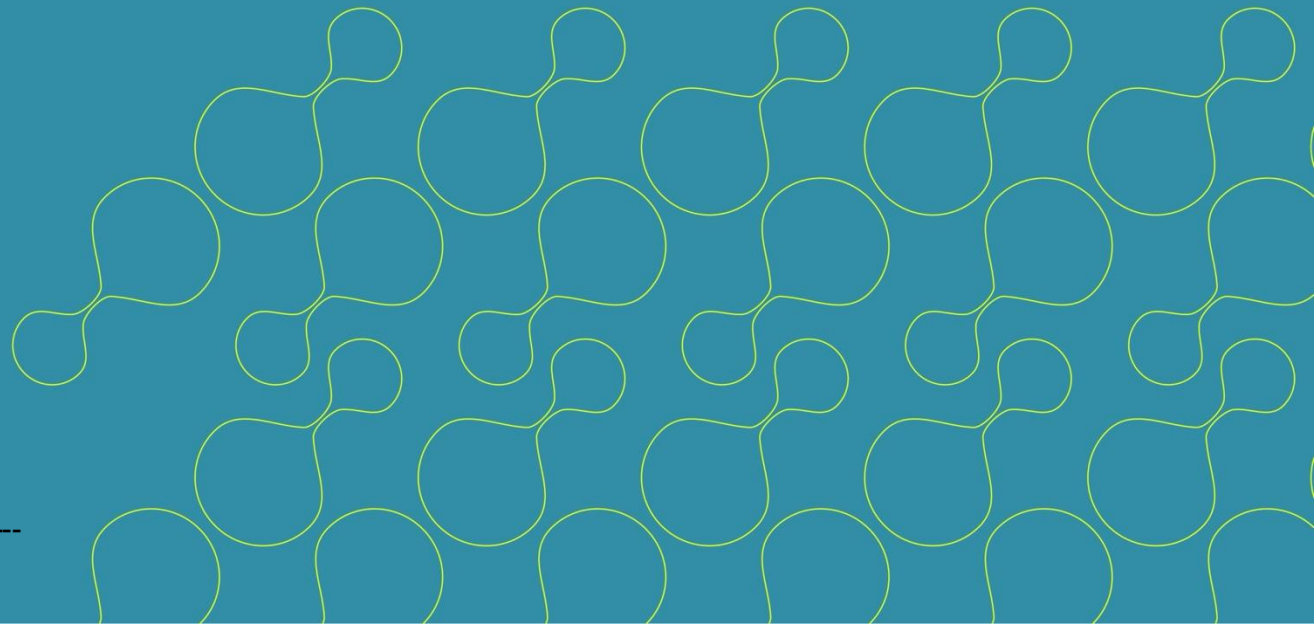
**Flexibility**
Modular design and hybrid cloud support enable dynamic scaling and flexible resource management across on-premises and cloud platforms.

**Support**
Expert collaborative support from Cisco, NetApp, and partners ensures smooth deployment, operation, upgrades, and maintenance.

# FlexPod Solution Focus Areas

| | | |
|---|---|---|
|  | Infrastructure | Core infrastructure solutions building on Cisco and NetApp technologies, virtualization, and container platforms. |
|  | Security | Holistic security solutions tuned to the full FlexPod Stack designed to build in security from design through operation. |
|  | Enterprise Apps | Application-centric solutions that guide customers on how to get the most from the FlexPod infrastructure to power their most demanding workloads. |
|  | AI | Turn-key AI infrastructure solutions to accelerate time to value with cutting edge AI technologies. |

# Infrastructure



# Infrastructure Snapshot

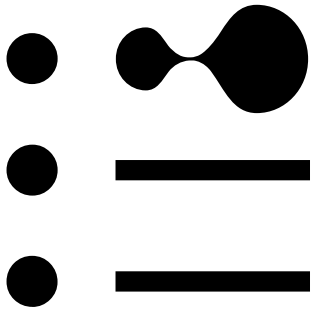
**Recently Released:**

1. FlexPod SAN Solution: Cisco UCS X-Series Direct and NetApp ASA

2. FlexPod with Hyper-V 2025 and NetApp Shift

**Current Designs:**

1. FlexPod with NetApp AFF A-Series
2. FlexPod with Red Hat OpenShift Container Platform
3. FlexPod with Red Hat OpenShift Container Platform and Virtualization

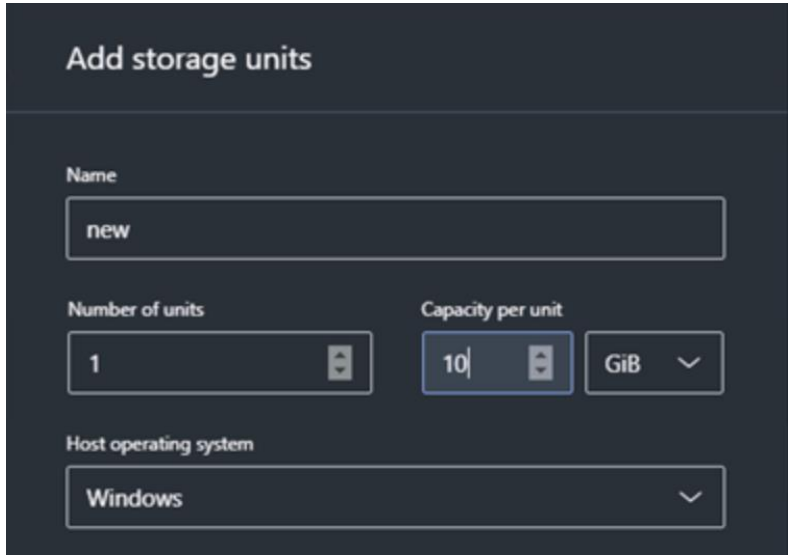


# FlexPod SAN Solution: Cisco UCS X-Series Direct and NetApp ASA

Solution Link

Best practices SAN deployment and configuration with ONTAP 9.16.1 highlighting a new **small/medium/large design**. This TR covers the full range of ASA A-Series systems: **A20, A30, A50, A70, A90, A1K**

- Availability and performance focused to give customers best practices SAN guidance
- Details on the new operational changes included in ONTAP 9.16.1 and above for ASA
- Designed for broad applicability




| | |
|---|---|
| **Workload** | Database |
| **Integrations** | |
| **Virtualization** | VMware |
| **Compute** | UCS X and C-Series |
| **Network** | Nexus and MDS |
| **Storage** | ASA with ONTAP 9.16.1 |



FlexPod

# FlexPod with Hyper-V 2025 and NetApp Shift

Solution Link

A FlexPod solution focused on **Hyper-V running on Windows Server 2025**. This solution will give customers additional FlexPod options for virtualization and **highlight the use of NetApp Shift** for VM migration.

- A tuned and validated FlexPod solution detailing Hyper-V on Windows Server 2025.
- A new baseline FlexPod virtualization option for customers looking for alternatives to VMware.
- NetApp Shift gives customers an easy-button migration path to Hyper-V.

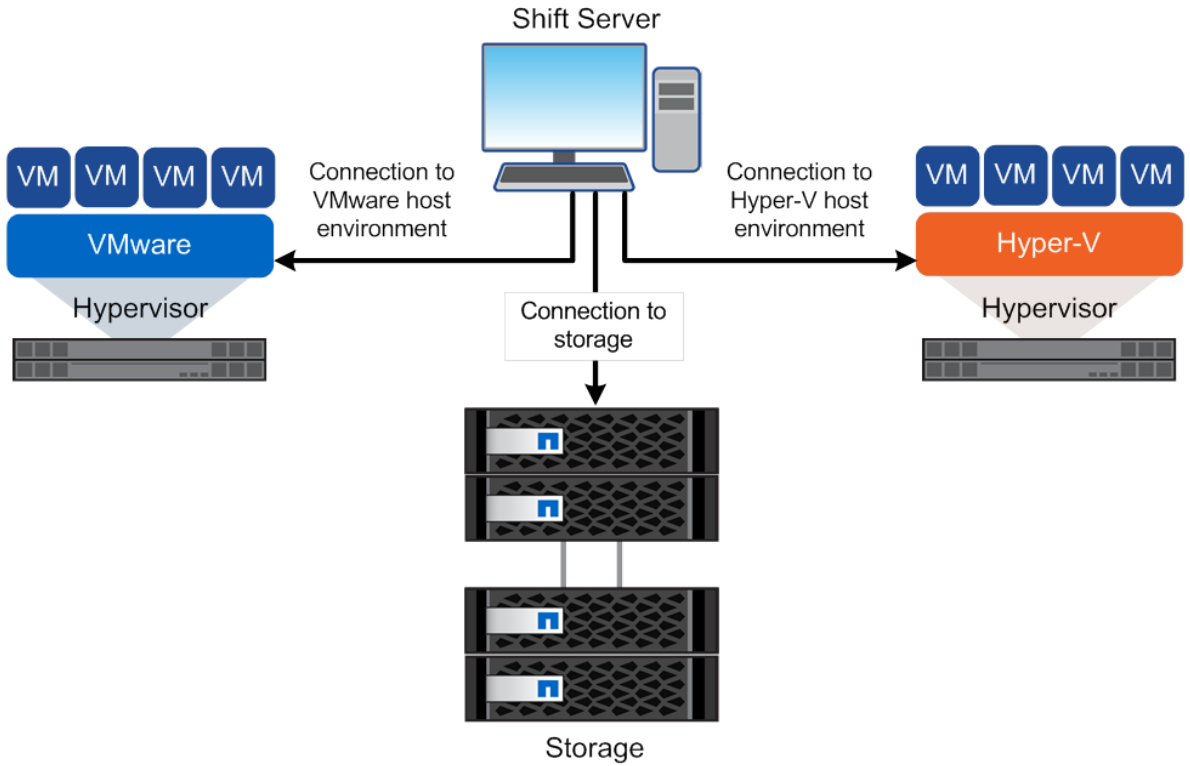

| | |
|---|---|
| **Workload** | |
| **Integrations** | NetApp Shift |
| **Virtualization** | Hyper-V 2025 |
| **Compute** | UCS X-Series |
| **Network** | Nexus |
| **Storage** | AFF |




FlexPod

# Introducing NetApp Shift Toolkit – VM conversion

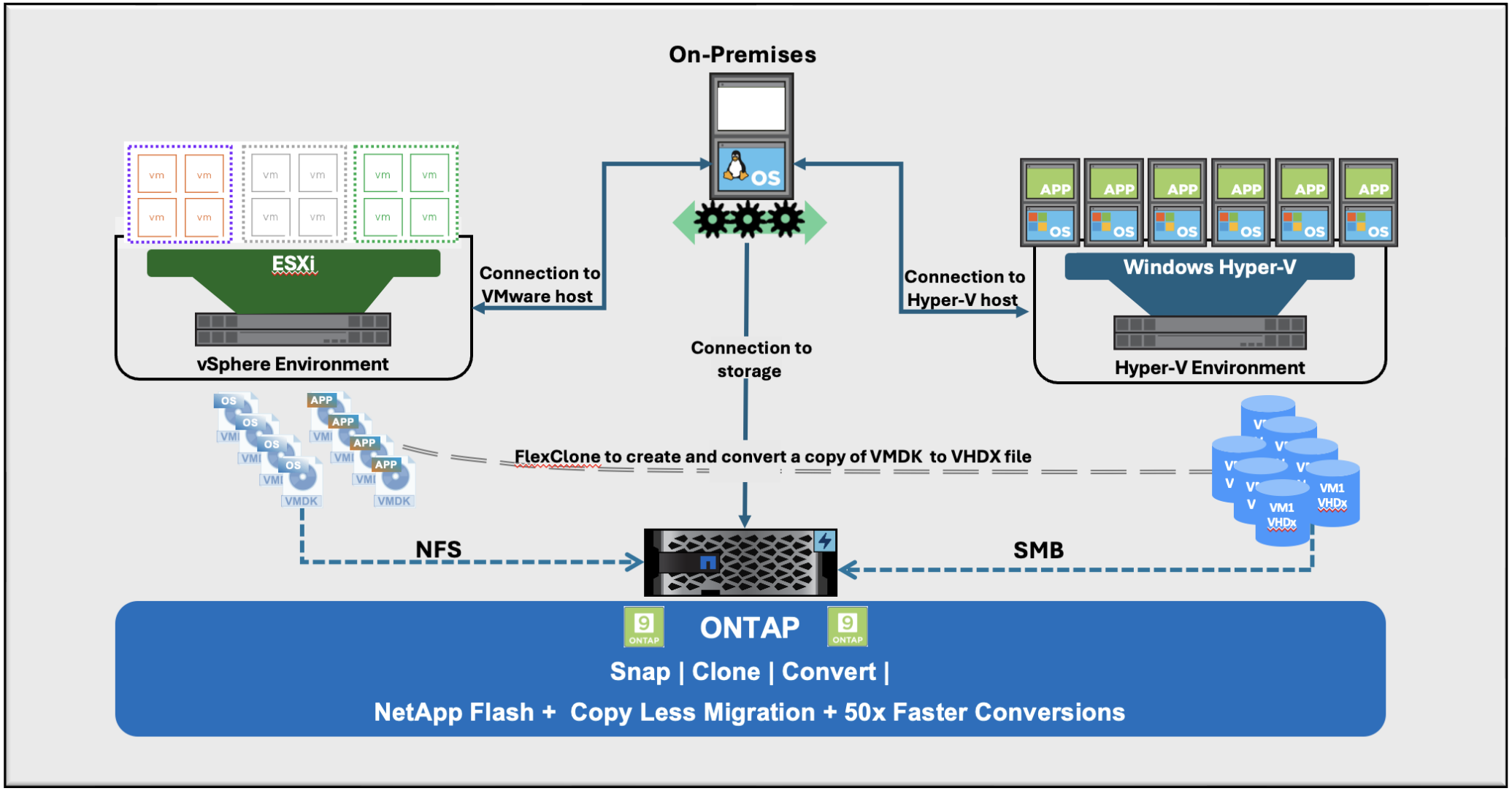
## Automated solution for migrating VMs between VMware ESXi and Hyper-V / OpenShift Virtualization




- Fast & reliable solution for the migration of VMs between two hypervisors
- Leverages NetApp FlexClone technology for the rapid conversion of VM hard disks
- Customer Value
  - Minimizes downtime
  - Removes vendor lock-in
    - Customers standardize on operations without hypervisor-specific restrictions or lock in
  - Lower capex
    - Minimum infrastructure resources

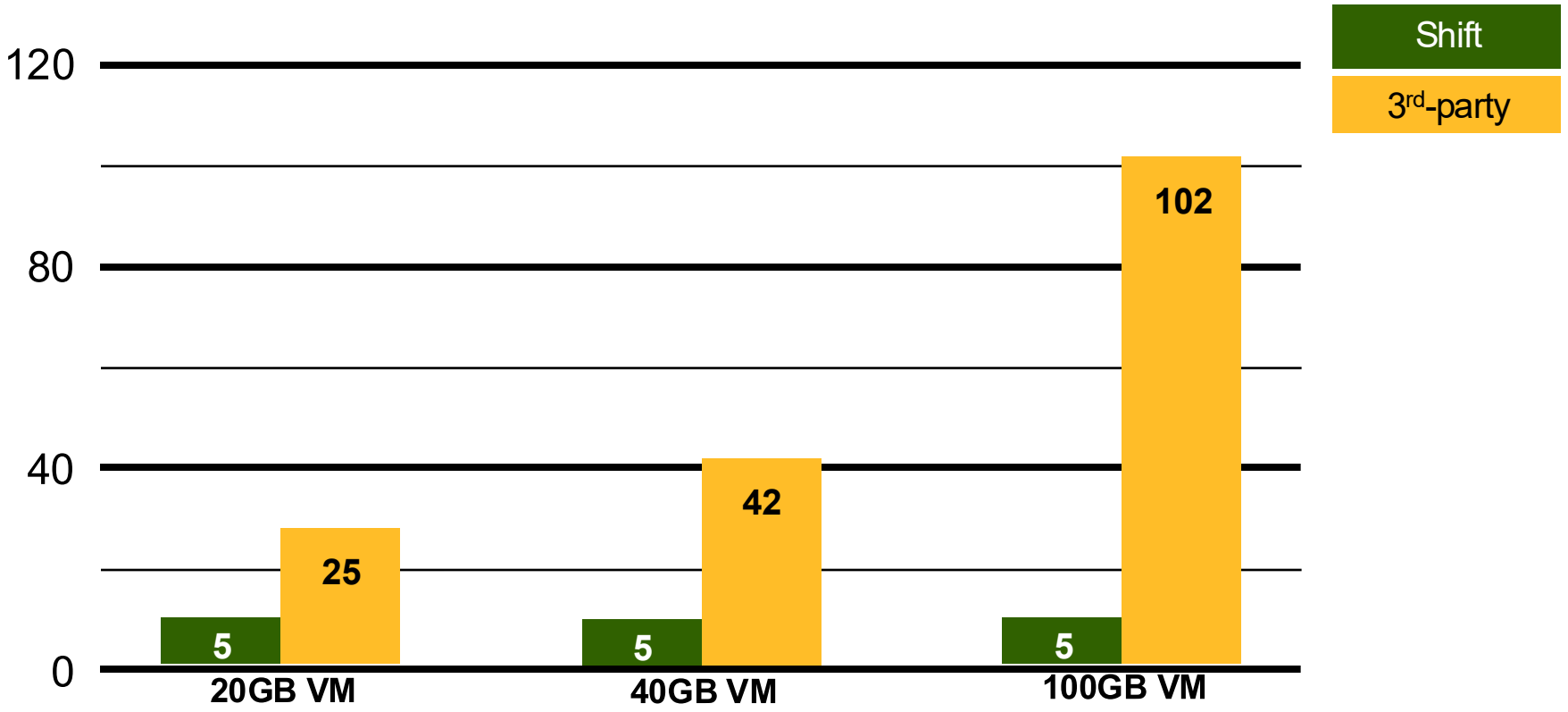
# NetApp Shift Toolkit – Architecture

## Automated solution for migrating VMs between VMware ESXi and Hyper-V / OpenShift Virtualization



# NetApp Shift Toolkit – Comparing conversion times (in minutes)

Using a standalone converter*




- * - SCVMM comparison coming soon

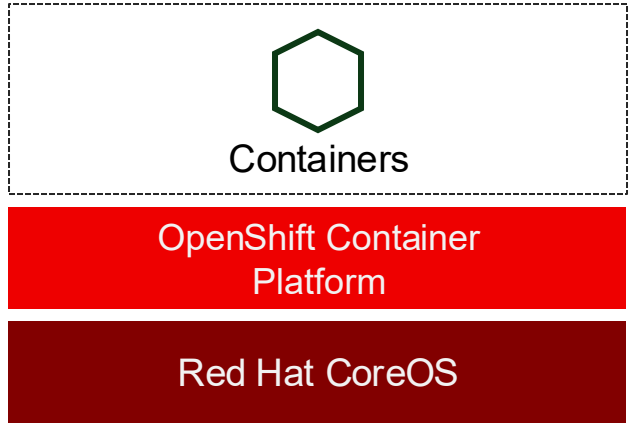
 

# FlexPod with Red Hat OpenShift Container Platform

Solution Link

A foundational solution supporting customers looking to deploy cloud-native, containerized applications. This solution also acts as a base for other solutions like the RAG AI solution.

- Consistent, validated deployment guidance for Red Hat OpenShift Container Platform (OCP) on FlexPod infrastructure including Trident for storage orchestration
- Manual or Ansible automated deployment options
- Baseline solution on which customers can build with additional FlexPod solutions or tailor to meet their needs




| | |
|---|---|
| **Workload** | |
| **Integrations** | Trident |
| **Virtualization** | Red Hat OpenShift |
| **Compute** | UCS X-Series Direct |
| **Network** | Nexus |
| **Storage** | AFF |



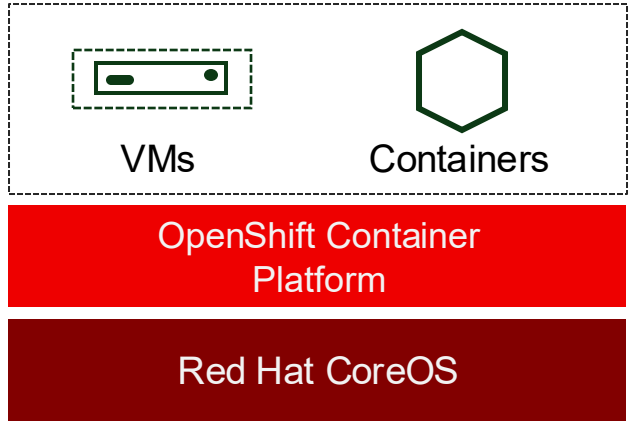

FlexPod

# FlexPod with Red Hat OpenShift Container Platform and Virtualization

Solution Link

A foundational solution supporting customers looking to deploy cloud-native, containerized applications along side traditional VM workloads.

- Designed for customers looking for an alternative to VMware that offers support for both containers and traditional VMs.
- Manual or Ansible automated deployment options
- Baseline solution on which customers can build with additional FlexPod solutions or tailor to meet their needs




| | |
|---|---|
| **Workload** | |
| **Integrations** | Trident |
| **Virtualization** | Red Hat OpenShift with Virtualization |
| **Compute** | UCS X-Series Direct |
| **Network** | Nexus |
| **Storage** | AFF |




FlexPod

# Security

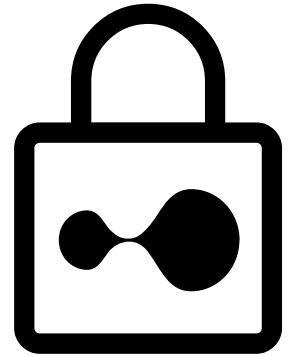
# Security Snapshot

**Recently Released:**

1. FlexPod Zero Trust Framework
2. FlexPod Security Hardening Guide
3. FlexPod Ransomware Protection & Recovery

**Coming Soon:**

1. Cisco Live NOC case study

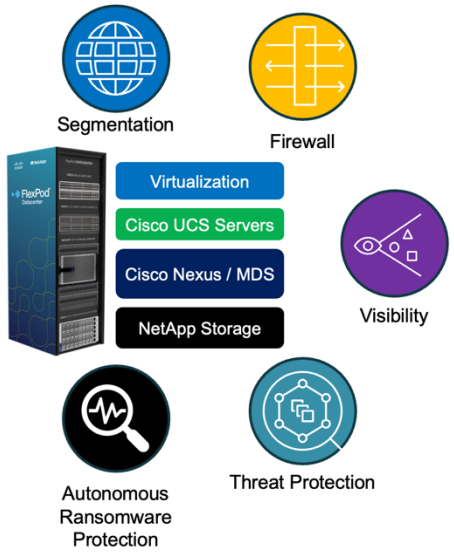


# FlexPod Zero Trust Framework

Solution Link

The FlexPod Zero Trust Framework takes the zero trust architecture (ZTA) guidelines defined by NIST, combines them with hardening processes and security tools, and brings it all together to give customers a turn-key secure platform.

- Tuned and consolidated FlexPod ZTA guidance
- Incorporates the combined portfolio of security features
- Full compliment of solution materials including a design guide, deployment guide, and ansible automation



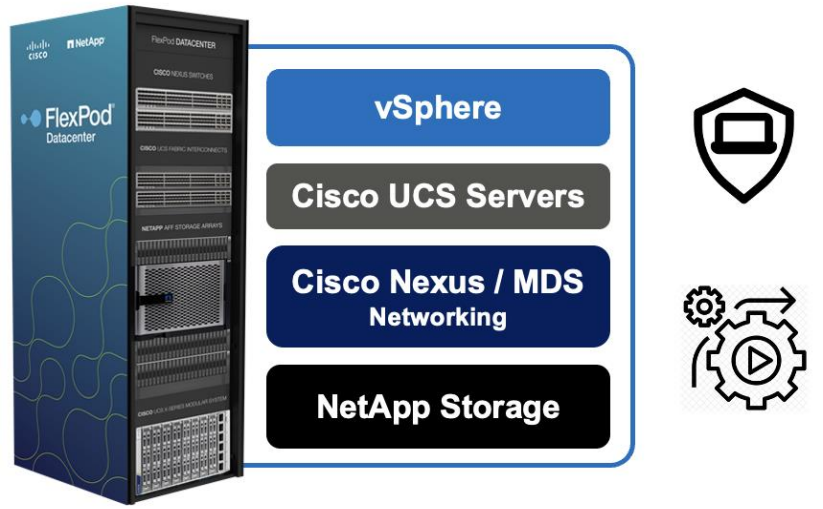

| | |
|---|---|
| **Integrations** | Firewall Threat Defense, Firewall Management, Secure Network Analytics, Secure Workload, Intel Confidential Computing |
| **Compute** | UCS X & C-Series |
| **Network** | Nexus |
| **Storage** | FAS, AFF, or ASA |

# FlexPod Security Hardening Guide

Solution Link

A consolidated hardening guide combining best practices for the full FlexPod stack including NetApp storage, Cisco networking and compute, and VMware virtualization all in a single guide.

- Take the guess work out of overlapping security hardening guidance with this tested and validated combined guide.
- Includes guidance on additional security features and best practices as well.
- Automated your initial security hardening and validate ongoing compliance with Ansible.




| | |
|---|---|
| **Workload** | Any |
| **Integrations** | |
| **Virtualization** | VMware |
| **Compute** | UCS X and C-Series |
| **Network** | Nexus |
| **Storage** | FAS, AFF, or ASA |



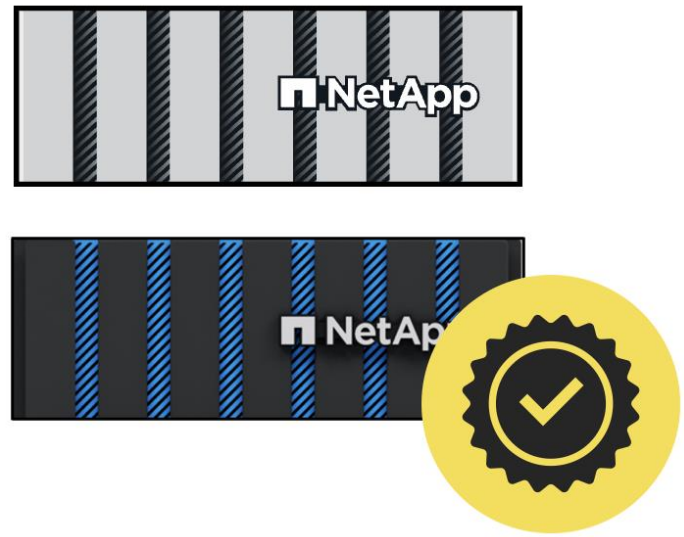
FlexPod

# FlexPod Ransomware Protection & Recovery

Solution Link

Step by step guidance to enable NetApp autonomous ransomware protection (ARP) on your FlexPod and detailed recovery steps using NetApp Data Infrastructure Insights and SnapCenter should a ransomware event occur.

- Workload-focused ransomware protection and recovery guidance for comprehensive readiness.
- Broadly applicable to workloads of all types and a wide range of infrastructure.
- Designed to take let customers take advantage of NetApp's Ransomware Recovery Guarantee




| | |
|---|---|
| **Integrations** | Autonomous Ransomware Protection, Data Infrastructure Insights, and SnapCenter |
| **Compute** | UCS X or C-Series |
| **Network** | Nexus or MDS |
| **Storage** | FAS, AFF, or ASA |



FlexPod

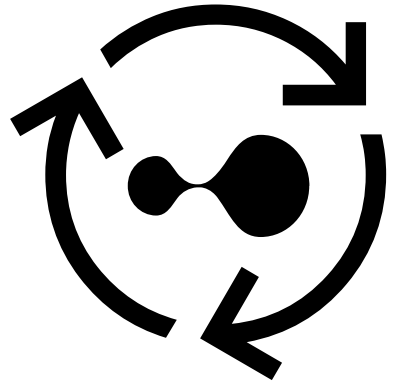
# Enterprise Apps

# Enterprise Apps Snapshot

**Recently Released:**

1. FlexPod for SAP HANA
2. FlexPod with UCS X-Series M7 and Omnissa Horizon 8
3. FlexPod for Citrix VDI



# FlexPod for SAP HANA

Solution Link

A tuned SAP HANA TDI deployment built on robust FlexPod infrastructure and performance tested with NetApp's newest AFF A-Series storage for maximum scale and performance.

- Purpose built SAP HANA TDI infrastructure designed for maximum scale and performance using Cisco UCS X410c compute and NetApp AFF A90 storage.
- Leverages Cisco UCS X410c for maximum database scale.
- Automated deployment increases repeatability for customers and improves time to value.

SAP HANA

SAP® Certified
Hardware for SAP HANA®

| | |
|---|---|
| **Workload** | SAP HANA |
| **Integrations** | |
| **Virtualization** | |
| **Compute** | UCS X410c |
| **Network** | Nexus |
| **Storage** | AFF A90 |



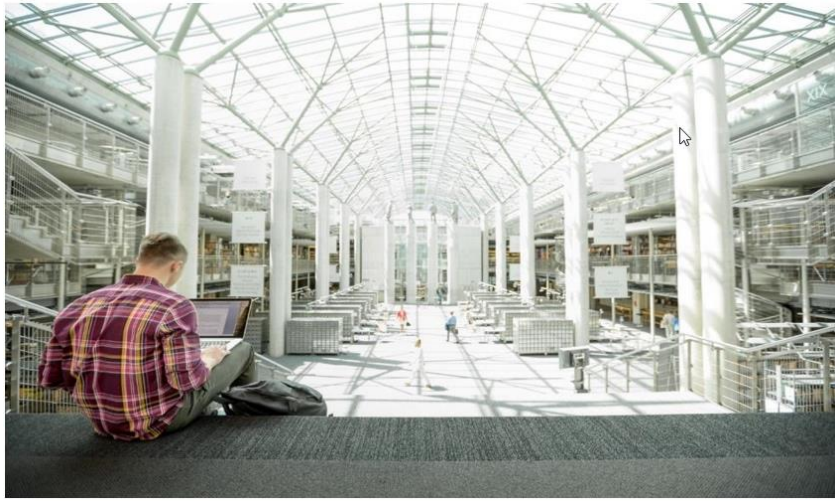

FlexPod

# FlexPod with UCS X-Series M7 and Omnissa Horizon 8

Solution Link

FlexPod customers gain another blueprint to deliver Omnissa Horizon 8 desktops with **scale up to 3,000 sessions.**

- Cost effective, highly scalable solution designed for lower costs, less risk, and faster time to value.
- Automates many mundane, error-prone data center operations such as configuration and provisioning of server, network, and storage access infrastructure.
- Enhanced security with segmentation of virtual desktops, virtual machine–aware policies and administration, and network security across the LAN and WAN infrastructure.



| | |
|---|---|
| **Workload** | VDI |
| **Integrations** | |
| **Virtualization** | VMware vSphere 7 + Horizon 8 |
| **Compute** | UCS X-Series |
| **Network** | Nexus |
| **Storage** | AFF |




FlexPod

# FlexPod for Citrix VDI

Solution Link

FlexPod customers are offered more options for virtual desktops with this solution employing Citrix to support up to **2,500 concurrent users**.

- Validated and tested architecture which can be scaled linearly to support Citrix deployments to meet the customer's needs.
- Automates deployment and configuration to speed time to value and ensure repeatable results.
- The solution mixes desktop types to show how all can be run in parallel on common infrastructure.

| | |
|---|---|
| **Workload** | Citrix 7 |
| **Integrations** | ONTAP Tools for VMware |
| **Virtualization** | VMware vSphere 8 |
| **Compute** | UCS X210c |
| **Network** | Nexus |
| **Storage** | AFF |

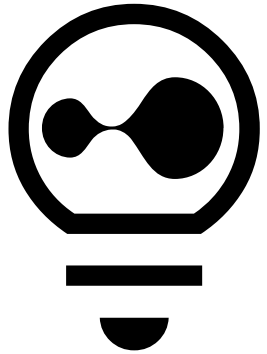
# AI

# AI Snapshot

**Recently Released:**

1. Scaling FlexPod for GPU Intensive Applications
2. FlexPod AI with SUSE Rancher for AI Workloads
3. FlexPod AI with Generative AI Inferencing
4. FlexPod AI for RAG Use Cases
5. FlexPod AI for MLOps with Red Hat OpenShift AI
6. FlexPod with Run:AI White Paper

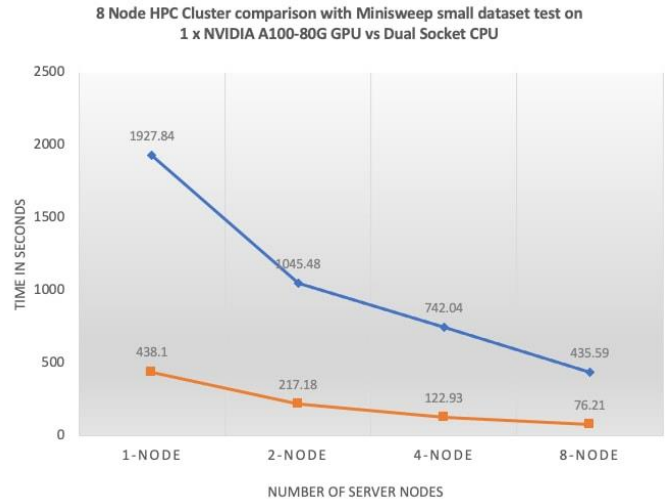


# Scaling FlexPod for GPU Intensive Applications

Solution Link

This foundational FlexPod solution proves out **linear scaling of FlexPod resources for GPU intensive, scalable workloads AI/ML solutions** to address **high-performance computing use cases**, including weather modeling, high energy physics, scientific experiment simulation, and life sciences.

- Architectural guidance to design and deploy scalable infrastructure with FlexPod.
- Validates the designs using open benchmark tools to illustrate true system capabilities.
- Compares results scaling GPUs per node, nodes per cluster, and CPU only results.




| | |
|---|---|
| **Workload** | Miniweather, Minisweep, HPGMG |
| **Integrations** | NetApp DataOps Toolkit |
| **Virtualization** | |
| **Compute** | Cisco UCS C-Series |
| **Network** | Nexus |
| **Storage** | AFF A-Series |



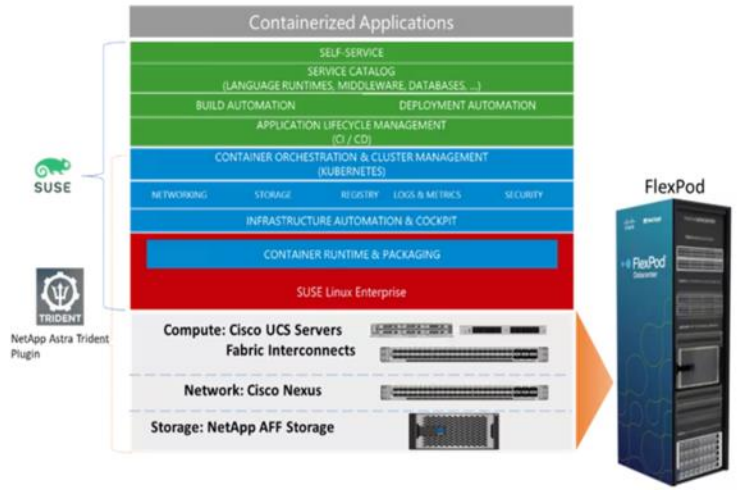

FlexPod

# FlexPod AI with SUSE Rancher for AI Workloads

Solution Link

An integrated solution that **supports the entire SUSE software-defined Linux and Kubernetes stack for containerized and AI/ML workloads.**

- **Easy to deploy, consume, and manage** design that aligns with Cisco, NetApp, and SUSE best practices and compatibility requirements.
- **Automated deployment and life cycle management** of FlexPod infrastructure and RKE2 with Ansible playbooks.
- Hybrid-cloud-ready, policy-driven modular design.




| | |
|---|---|
| **Workload** | Various Generative AI Models |
| **Integrations** | NetApp Trident and DataOps Toolkit |
| **Virtualization** | SUSE Linux and Rancher |
| **Compute** | UCS X and C-Series |
| **Network** | Nexus and MDS (optional) |
| **Storage** | AFF A-Series |



FlexPod

# FlexPod AI with Generative AI Inferencing

Solution Link

FlexPod AI design and deployment guidance to add **robust and scalable AI inferencing capabilities**. Built on industry leading Red Hat OpenShift, NVIDIA NVAIE, NVIDIA GPUs, and FlexPod infrastructure.

- NVIDIA Triton inference server deployment automated via Ansible to allow quick and repeatable infrastructure and software deployment.
- Text generation, image generation, SQL code generation, and many more
- Implement readily available AI Inferencing models quickly and easily on a powerful FlexPod platform.

| | |
|---|---|
| **Workload** | NVAIE and NVIDIA Triton |
| **Integrations** | NetApp Trident and DataOps Toolkit |
| **Virtualization** | VMware vSphere 8 & Red Hat OCP |
| **Compute** | UCS X-Series |
| **Network** | Nexus |
| **Storage** | AFF A-Series |



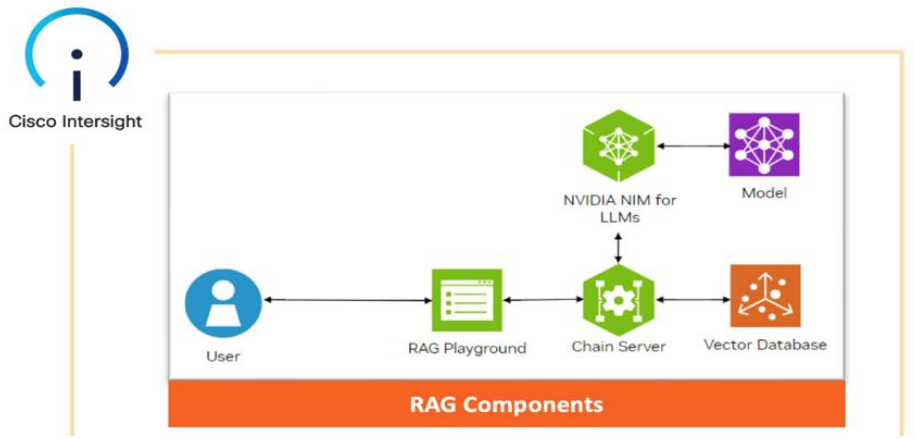

FlexPod

# FlexPod AI for RAG Use Cases

Solution Link

AI-ready platform for retrieval-augmented generation (RAG) Pipelines built using latest NVIDIA technologies deployed on Cisco UCS X-Series based NetApp® FlexPod® datacenter

- RAG deployed on validated Cisco UCS X-Series based FlexPod architecture for AI.
- Leverages NVIDIA Inference Microservices (NIM) to provide industry-standard APIs to develop and deploy applications like RAG.
- Trident supports multiple backend types like NFS, NFS- FlexGroup, NVMe-TCP, iSCSI.




| | |
|---|---|
| **Workload** | RAG Use Cases |
| **Integrations** | NVAIE, NIM |
| **Virtualization** | Red Hat OpenShift |
| **Compute** | UCS X-Series |
| **Network** | Nexus |
| **Storage** | AFF A-Series |



FlexPod

# FlexPod AI for MLOps with Red Hat OpenShift AI

Solution Link

A solution highlighting the power of Red Hat OpenShift AI tools for MLOps and offering a validated design to put these tools to use quickly.

- Simplify and streamline operations for AI/ML. Ease integration into existing deployments and processes.
- Flexible design with options for tools, technologies and individual components and sub-systems used in the design can be modified to adapt to changing requirements.
- Scalable design: As deployments grow, FlexPod Datacenter can be scaled up or out to meet enterprise needs.


| | |
|---|---|
| **Workload** | |
| **Integrations** | NetApp Trident |
| **Virtualization** | Red Hat OpenShift |
| **Compute** | UCS X-Series |
| **Network** | Nexus |
| **Storage** | AFF |




FlexPod

# FlexPod with Run:AI White Paper

Solution Link

This white paper explores the potential of **combining Run:ai's advanced orchestration capabilities with the efficient and easy-to-automate FlexPod AI infrastructure.**

- Optimized AI Workloads: Run:AI's GPU-orchestration framework enhances resource allocation and utilization.
- Scalable and Flexible Platform: FlexPod AI provides a high-performance computing environment that is scalable and flexible.
- Enhanced Efficiency: The integration of Run:AI with FlexPod AI simplifies and automates processes.

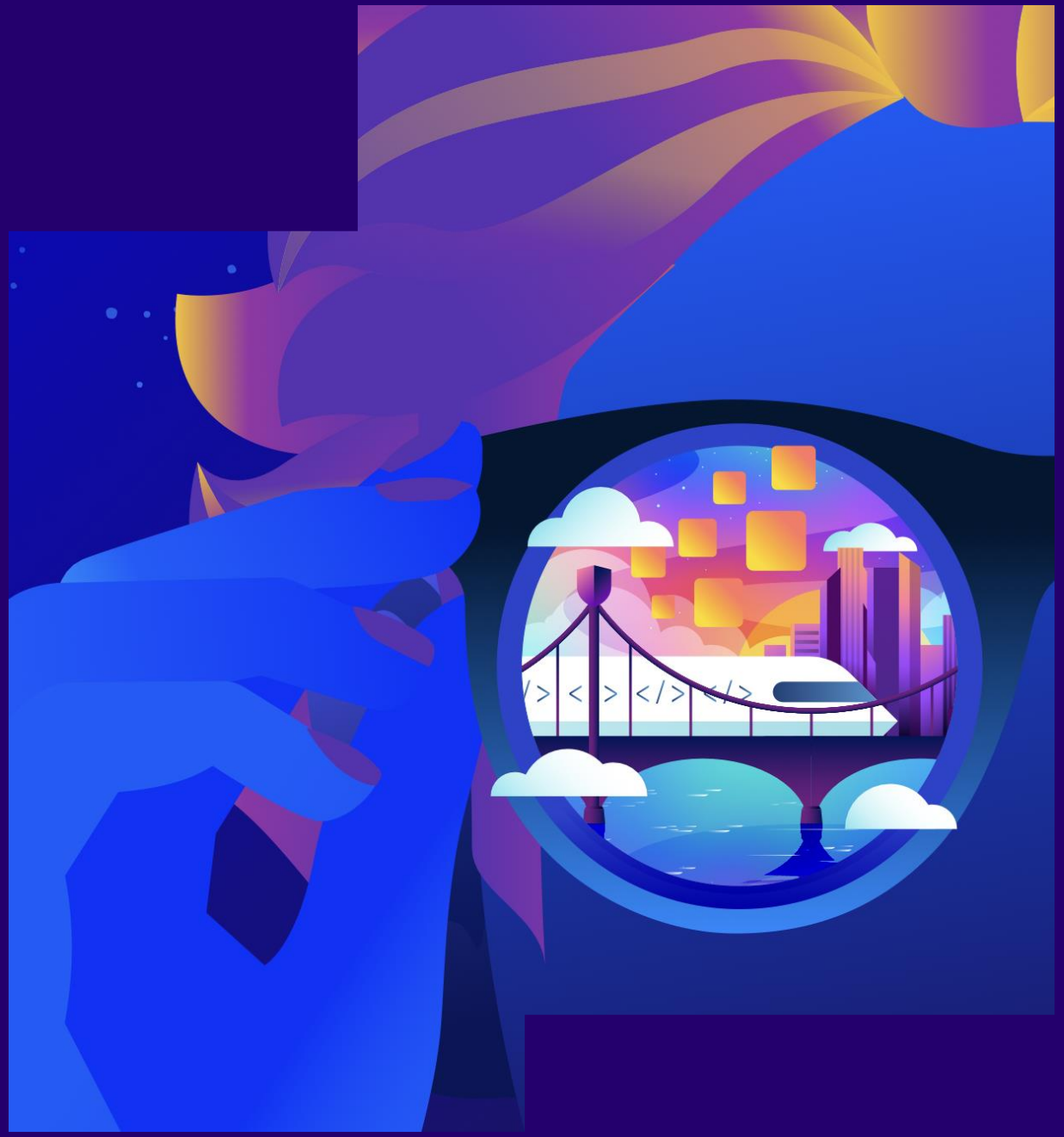

| | |
|---|---|
| **Workload** | Run:AI |
| **Integrations** | |
| **Virtualization** | Red Hat OpenShift |
| **Compute** | |
| **Network** | |
| **Storage** | |



FlexPod

# Upcoming Events



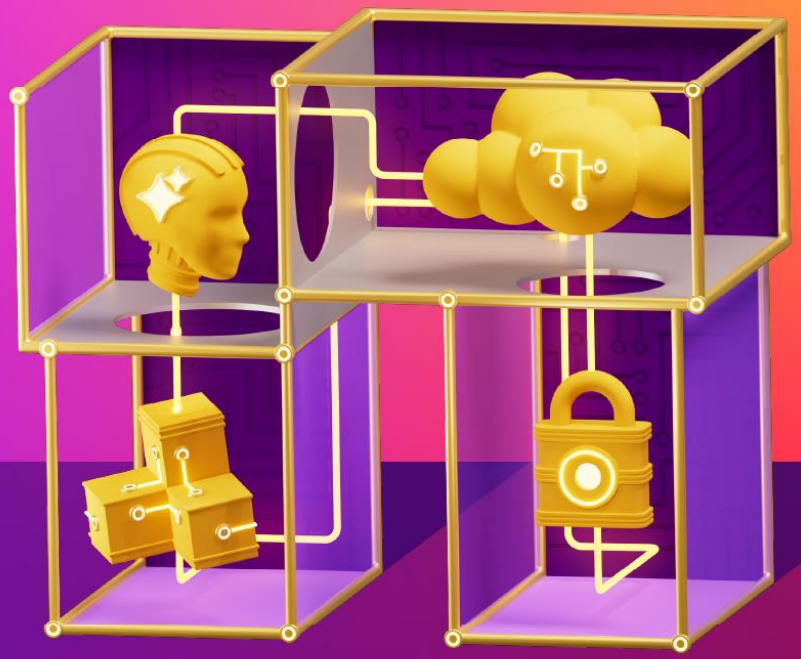
# Event Overview - VMware Explore 2025

- **WHAT:** VMware Explore US 2025
- **WHEN: August 25 – 28, 2025**
- **WHERE:** The Venetian Convention Center and Expo, Las Vegas, NV
- **NetApp Booth: 302**
- **LINK:** https://www.vmware.com/explore/us

EXPLORE
LAS VEGAS | THE VENETIAN
AUGUST 25 – 28, 2025

# NetApp INSIGHT

## October 14 – 16, 2025 | MGM Grand, Las Vegas



**NetApp INSIGHT 2025 is the premier data infrastructure conference.**

True confidence comes from knowing how to tackle today's most pressing technological challenges. Attendees will gain the knowledge and strategies to navigate the future with certainty.

REGISTER NOW

**Featured Sessions:**

**Data Infrastructure Modernization**
Modernize with intelligence – connected, simplified, and ready to scale.

**Cloud Transformation**
Transform the cloud without trade-offs – with agility, optimization, and resilience built in.

**Cyber Resilience**
Stay resilient – with the most secure storage on the planet.

**AI Innovation**
Fuel AI innovation with enterprise-ready data – secure, scalable, and governed.

Frequently Asked Questions

# Thank You