

# KUPPER IT-Impuls

**Das volle Potenzial Ihrer NetApp &  
neue Perspektiven für  
Ihre Virtualisierung**

Live-Event | 11. Juni 2026

 NetApp |  KUPPER

Impulsvortrag

# **Neue Perspektiven für Ihre Virtualisierung**

IHR HEUTIGER REFERENT

## Tom Bruchholz

Solution Engineer

Seit über 20 Jahren im NetApp Umfeld tätig.

Storage Support bei IBM (NetApp OEM)

Über 15 Jahre IT-Consulting beim Systemhaus

Infrastruktur Spezialist

Backup und Security



# Agenda

- 1. Der aktuelle Status Quo**
- 2. Alternativen!?**
- 3. Wie NetApp unterstützt**
- 4. F&A**

# The New Reality of Enterprise Virtualization

Customers are evaluating alternatives – but few are moving to a single replacement platform.



# Multiple Choices

Intelligent Data Infrastructure delivers the flexibility your business needs

## NetApp® ONTAP®

Comprehensive data-management software delivering automation, efficiency, data protection, and security capabilities for file, block, object, and cloud

### Hypervisors



### Cloud, VMware / Cloud Hosted



### App Modernization



Google Kubernetes Engine

Azure Kubernetes Service (AKS)

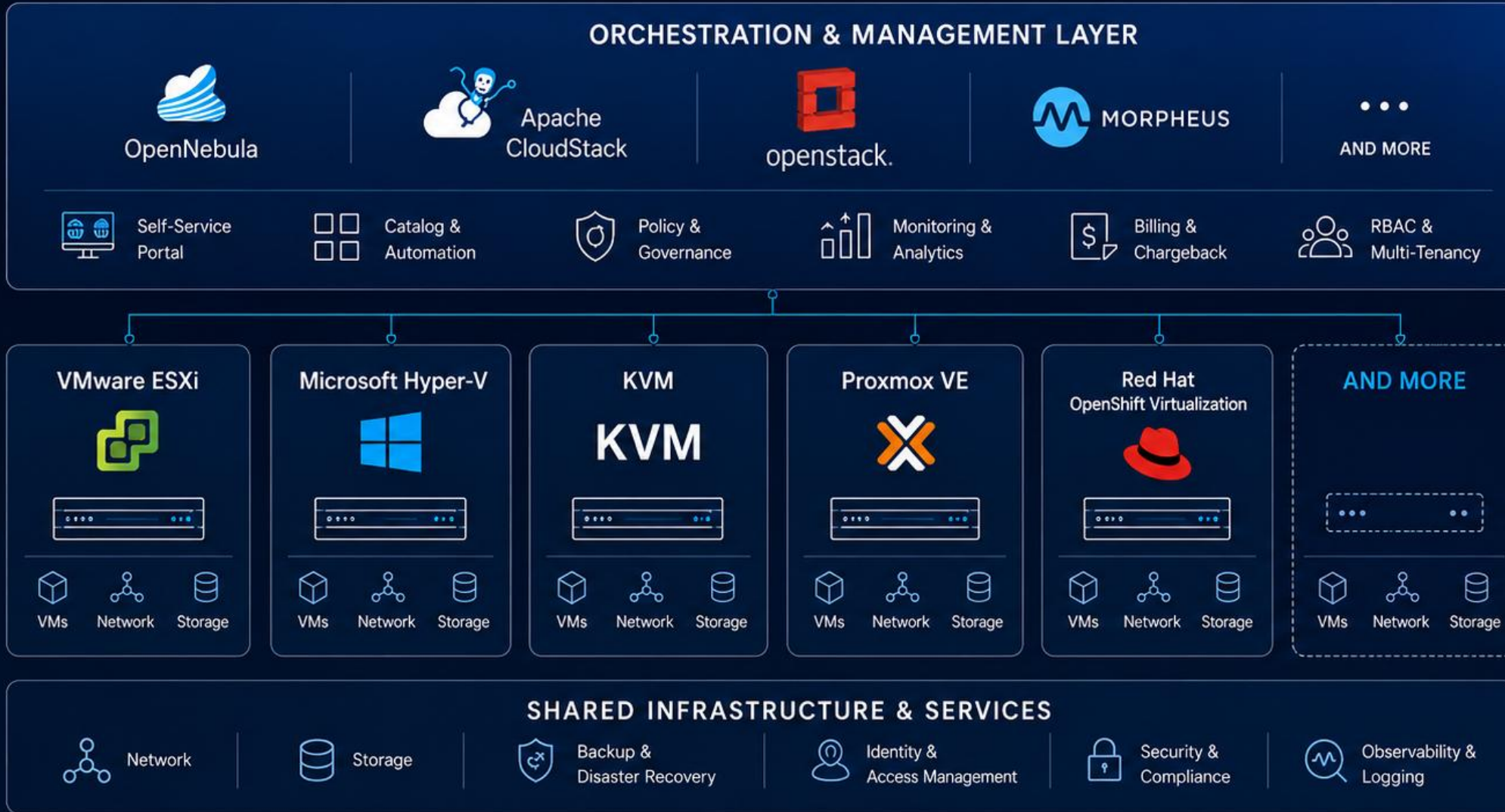
ONTAP

FSxN, ANF, GCNV, CVO

ONTAP, Trident, 1P

# THE NEW NORMAL

ONE ORCHESTRATOR. MULTIPLE HYPERVISORS.



**FREEDOM**  
Freedom to choose the best technology

**RESILIENCE**  
High availability and fault tolerance through diversity

**CONTROL**  
Avoid vendor lock-in and reduce risk

**FUTURE-PROOF**  
Open, flexible and adaptable for tomorrow

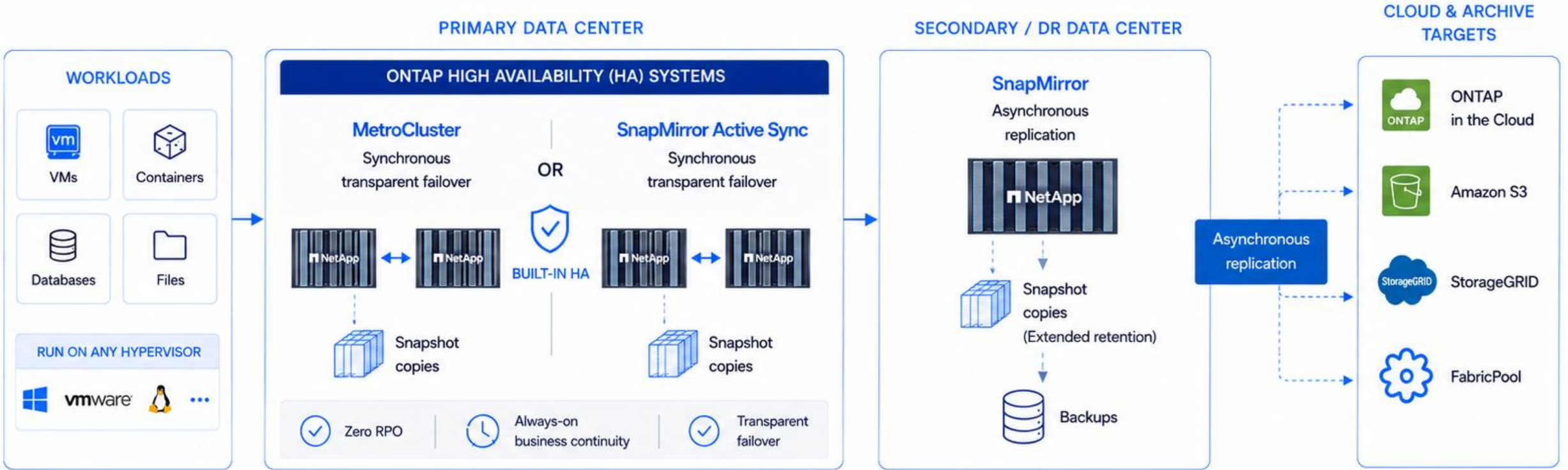
# INVESTMENT PROTECTION

Wherever your virtualization goes.



# NetApp ONTAP Integrated Data Protection

Eliminate backup windows and reduce risk (and pain) with the best data protection solution in the world



## DATA PROTECTION YOU KNOW. FLEXIBILITY YOU NEED.



**Proven HA**  
MetroCluster and SnapMirror Active Sync for zero RPO and high availability



**Built-in Data Protection**  
Integrated snapshot technology for fast recovery and efficiency



**Disaster Recovery**  
Asynchronous replication for efficient DR with low RPO and RTO



**Cloud Integration**  
Seamlessly extend data protection to the cloud



**Backup & Archive**  
Protect, retain and keep data longer



**Consistent with any Platform**  
Works with all major hypervisors and workloads

# NetApp Backup and Recovery Service

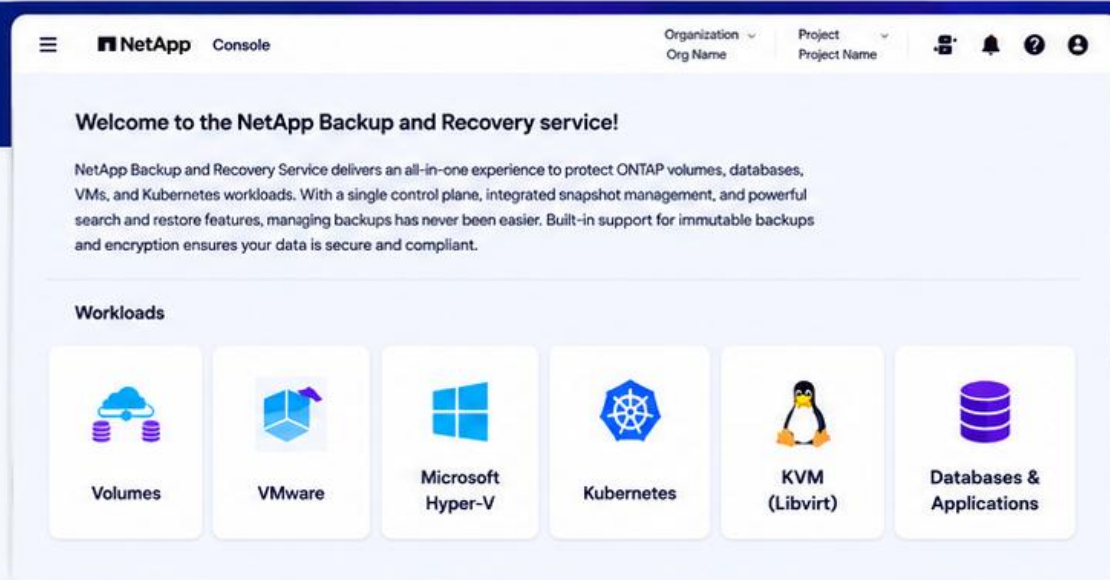
Enterprise data protection for a multi-workload world.



## SaaS-based data protection, built for the enterprise

NetApp Backup and Recovery Service delivers an all-in-one experience to protect ONTAP volumes, databases, VMs, and Kubernetes workloads.

With a single control plane, integrated snapshot management, and powerful search and restore features, your data is always protected, recoverable and compliant.



## Deployment Flexibility



### SaaS Deployment

- ✓ Available today
- ✓ Quick deployment
- ✓ Enterprise-grade security
- ✓ Global availability
- ✓ Simplified operations



### Flexible Deployment Models

- ✓ Designed to support diverse customer requirements
- ✓ Data protection across multiple environments
- ✓ Enterprise-grade security and compliance
- ✓ Flexible operational models
- ✓ Consistent user experience



### Enterprise Security

- ✓ End-to-end encryption
- ✓ Immutable backups
- ✓ Role-based access control
- ✓ Audit logging and compliance

## Built to protect diverse workloads



### VMware

Protect VMware virtual machines with a unified experience.



### Microsoft Hyper-V

Protect Hyper-V virtual machines with a unified experience.



### Kubernetes

Protect Kubernetes applications and data across namespaces.



### KVM (Libvirt)

Protect KVM virtual machines with a unified experience.



### Databases & Applications

Protect key databases and business-critical applications.



3-2-1 protection strategy  
3 copies, 2 media, 1 offsite



Immutable backups  
Ransomware protection



Powerful search & restore  
Find. Recover. Fast.



Policy-based automation  
Simplified data protection



ONE SERVICE.  
ALL WORKLOADS. COMPLETE DATA PROTECTION.



SIMPLE  
Single control plane



POWERFUL  
Enterprise features



FLEXIBLE  
Designed for diverse customer requirements



TRUSTED  
Built on NetApp

# NetApp + Red Hat OpenShift Virtualization

Enterprise Virtualization. Modern alternative to VMware.



## RED HAT OPENSIFT VIRTUALIZATION

### Enterprise virtualization platform

Modern VMware alternative built on a trusted, open and resilient foundation.



### Built for your VM workloads

- ✓ Lift & shift existing VMs
- ✓ Run business-critical applications
- ✓ Reliable operations at scale
- ✓ Consistent infrastructure as code
- ✓ Future-ready platform

- High Availability
- Live Migration
- Centralized Management
- Automation
- Security
- Enterprise Scale

### OPENSIFT VIRTUALIZATION FOUNDATION

- Virtual Machines
- Networking
- Storage
- Automation
- Monitoring
- Security

### NETAPP TRIDENT

#### Storage integration for OpenShift Virtualization

- ✓ Dynamic Provisioning
- ✓ Persistent Storage (NFS, iSCSI, NVMe/TCP)
- ✓ Snapshot Integration (CSI Snapshots)
- ✓ Volume Cloning
- ✓ Storage Automation & Lifecycle Management



### NETAPP ONTAP DATA SERVICES



#### STORAGE

- NFS, iSCSI, NVMe/TCP
- High performance
- Enterprise scale
- Multi-protocol support



#### DATA PROTECTION

- Snapshot Copies
- Clones
- Backup & Restore
- Disaster Recovery
- Replication



#### DATA MOBILITY

- SnapMirror
- MetroCluster
- SnapMirror Active Sync
- Cloud Integration



Powered by NetApp ONTAP



### ENTERPRISE DATA PROTECTION

Powered by NetApp ONTAP

- ✓ Snapshot Copies
- ✓ Clones
- ✓ Backup & Restore
- ✓ Disaster Recovery
- ✓ Replication
- ✓ Policy-based protection

## WHY IT MATTERS



### Modern VMware alternative

Run and manage your VMs on a modern, Kubernetes-native platform.



### Enterprise ready

Built for high availability, performance and security at scale.



### Operational efficiency

Automate, standardize and simplify your virtualization environment.



### Investment protection

Leverage existing skills and tools. Protect your data with NetApp.



### Future ready

Consistent foundation for hybrid cloud and future modernization.

## MIGRATION MADE EASY



### NetApp Shift Toolkit

- ✓ VMware → OpenShift Virtualization
- ✓ Storage-based migration
- ✓ Minimal downtime
- ✓ OpenShift MTV integration
- ✓ Accelerated migration workflows



STRONG PARTNERSHIP.  
PROVEN RESULTS.

NetApp

+



Red Hat



OpenShift  
Virtualization



Enterprise  
Storage



Data  
Protection



Migration &  
Modernization



Hybrid  
Cloud

# NetApp + Proxmox VE

Enterprise virtualization with enterprise storage and data services.

## Run, Protect and Grow with Proxmox VE on NetApp



### Migrate with Confidence

#### NetApp Shift Toolkit

Fast, reliable VM migration from VMware to Proxmox VE



- ✓ Storage-based migration
- ✓ Minimal downtime
- ✓ Leverages NetApp ONTAP



### Enterprise Storage for Proxmox

#### Proxmox Storage Manager (Tech Preview)

Simplified storage lifecycle management powered by NetApp ONTAP



#### Powered by NetApp ONTAP

- ✓ High performance
- ✓ Efficiency
- ✓ Reliability
- ✓ Enterprise features



### Run and Protect Workloads



#### Virtual Machines

High performance for all VM workloads



#### Containers

Persistent storage for containers



#### Databases & Apps

Enterprise data services for critical workloads



#### Backups & DR

Reliable backup, restore and DR



#### Snapshots & Clones

Instant copies for agility and rollback

### Knowledge. Guidance. Enablement.



**Best Practices Documentation**  
Comprehensive, up-to-date guides for Proxmox VE with NetApp ONTAP



**How-to Videos**  
Step-by-step videos for common use cases and configurations



**Proven Best Practices**  
Validated architectures and configuration recommendations



**Workshops & Enablement**  
Multi-day workshops for resellers and solution partners



**Continuous Updates**  
Ongoing improvements and new content

### Business Value



**Freedom of choice**  
Flexibility with Proxmox VE and enterprise-grade storage



**Protect what matters**  
Built-in protection with ONTAP snapshots, backups and clones



**High performance**  
Low latency and high throughput for demanding workloads



**Cost efficiency**  
Reduce complexity and optimize infrastructure investments



**Grow with confidence**  
Scale seamlessly as your business grows

## NetApp ONTAP – The Foundation for Proxmox VE



High Performance



Massive Efficiency



Enterprise Reliability



Hybrid Cloud Ready



Built-in Data Protection



Rich Data Services



### Growing Customer Adoption

- ✓ Strong customer interest and momentum
- ✓ Proven NetApp solutions and integrations
- ✓ Validated best practices and architectures
- ✓ Ongoing enablement and support

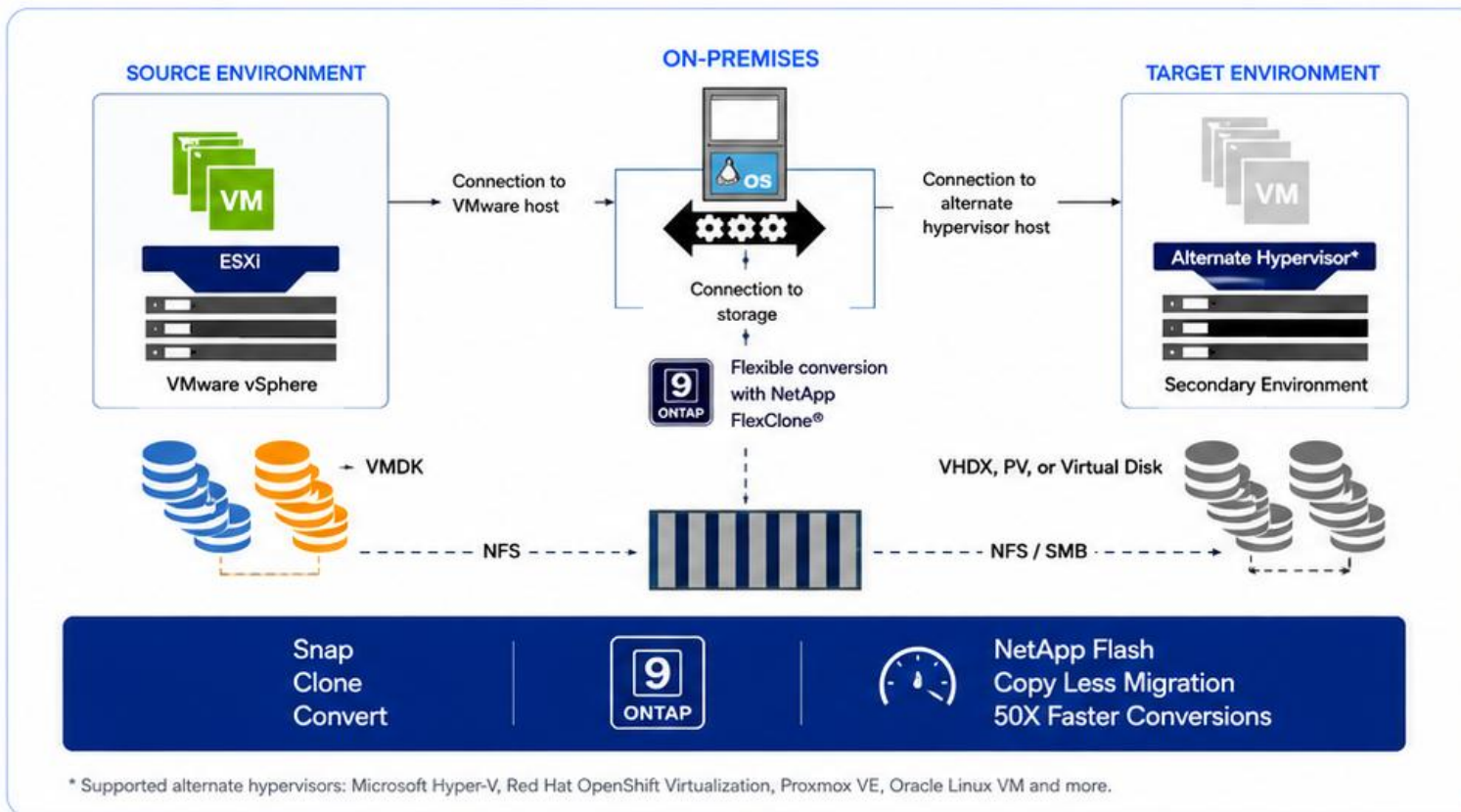
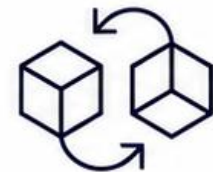


A complete solution for Proxmox VE – from migration to modernization.

NetApp and Proxmox VE: **Validated. Documented. Supported.**

# NetApp Shift Toolkit – Introducing VM conversion

Automated solution for migrating VMs: VMware ESXi & Hyper-V / OpenShift Virt. / OLVM



## Fast & reliable VM migration

- Fast & reliable solution for Virtual Machine (VM) migration



## Storage-based VM conversion

- VM hard disk conversion with NetApp FlexClone



## VM Migrations supported

- VMware vSphere to Microsoft Hyper-V
- Microsoft Hyper-V to VMware vSphere
- VMware vSphere to Red Hat OpenShift Virtualization
- VMware vSphere to Red Hat OpenShift Virtualization using MTV
- VMware vSphere to Proxmox VE
- VMware vSphere to Oracle Linux VM
- ...and more



## Customer value

- Minimizes downtime
- Remove vendor lock-in and standardize operations by avoiding hypervisor restriction
- Lower capex with minimum infrastructure resources



### Minimize Downtime

Storage-based conversion keeps downtime to a minimum



### High Performance

Powered by NetApp Flash and FlexClone technology for up to 50X faster conversions



### Automated & Simple

Easy-to-use automation reduces complexity and manual effort



### Broad Flexibility

Supports multiple hypervisors and environments for your migration journey



### Lower Cost

Optimize infrastructure utilization and reduce overall migration costs



### Trusted Solution

Built by NetApp – trusted by thousands of customers worldwide

# Open APIs Enable Innovation

Build, automate and integrate – your way.



**Commercial software is not the only answer.**  
Modern virtualization platforms and ONTAP provide open APIs that enable customers and partners to build their own automation, orchestration and management solutions.



**Open by Design**  
Comprehensive REST APIs for storage and virtualization platforms



**Automation Ready**  
REST, Ansible, PowerShell, Python and SDK integrations



**Customer Innovation**  
Customers increasingly build tailored solutions for their own workflows



**Investment Protection**  
ONTAP integrates with commercial products and custom-developed platforms

## Virtualization & Orchestration Platforms



OpenNebula



HPE Morpheus



Apache CloudStack



OpenStack

VMware VMware Aria Automation

Other / Custom CMPs

## Open APIs Power Innovation



ONTAP®



APIs  
(REST / SDK)

APIs  
(REST / SDK)

## Custom Solutions & Innovation



**AI-assisted Development**  
Build faster with intelligent tools



**Internal Portals & Self-Service**  
Create tailored experiences for your teams



**Custom Orchestration**  
Automate end-to-end workflows across environments



**Multi-Hypervisor Management**  
Manage VMware, Proxmox, Hyper-V and more – your way



**Business-Specific Automation**  
Solve unique challenges with custom-built solutions

## Works Your Way



Ansible Automation



PowerShell Scripting



Python SDK Development



Direct REST API Calls



Your Language Your Tools



## FLEXIBLE

Choose the platforms and tools that fit your needs



## INTEGRATED

ONTAP works seamlessly with commercial and custom solutions



## POWERFUL

APIs built for performance, scale and enterprise reliability



## TRUSTED

Proven in thousands of customer environments worldwide

# KEY TAKEAWAYS

## 01



### Flexibility by Design

- ✓ Multi-protocol support (NFS, SMB, iSCSI, FC, S3) with ONTAP
- ✓ Run VMware, Hyper-V, KVM, Kubernetes and more
- ✓ Freedom of choice for your environment

## 02



### Enterprise Data Protection

- ✓ Built-in data protection with ONTAP
- ✓ Snapshots, clones and replication
- ✓ Backup & recovery for VMs, containers, databases and applications
- ✓ Ransomware protection with immutable snapshots and SnapLock

## 03



### High Availability by Default

- ✓ ONTAP HA and cluster architecture
- ✓ Non-disruptive operations
- ✓ Built for uptime and business continuity
- ✓ Disaster recovery options to the cloud and remote sites

## 04



### Well Documented & Proven

- ✓ Comprehensive documentation
- ✓ Validated architectures and best practices
- ✓ Proven solutions for real-world scenarios
- ✓ Reference designs and step-by-step guidance

## 05



### Knowledge & Enablement

- ✓ Extensive partner enablement
- ✓ Technical workshops and hands-on sessions
- ✓ Best practices and reference architectures
- ✓ Strong ecosystem collaboration and knowledge sharing
- ✓ Trainings delivered by our partner



## 06



### Expertise When You Need It

- ✓ Large team of solution architects
- ✓ Deep technical expertise across workloads and technologies
- ✓ Engaged throughout your project lifecycle
- ✓ We are here to help you succeed

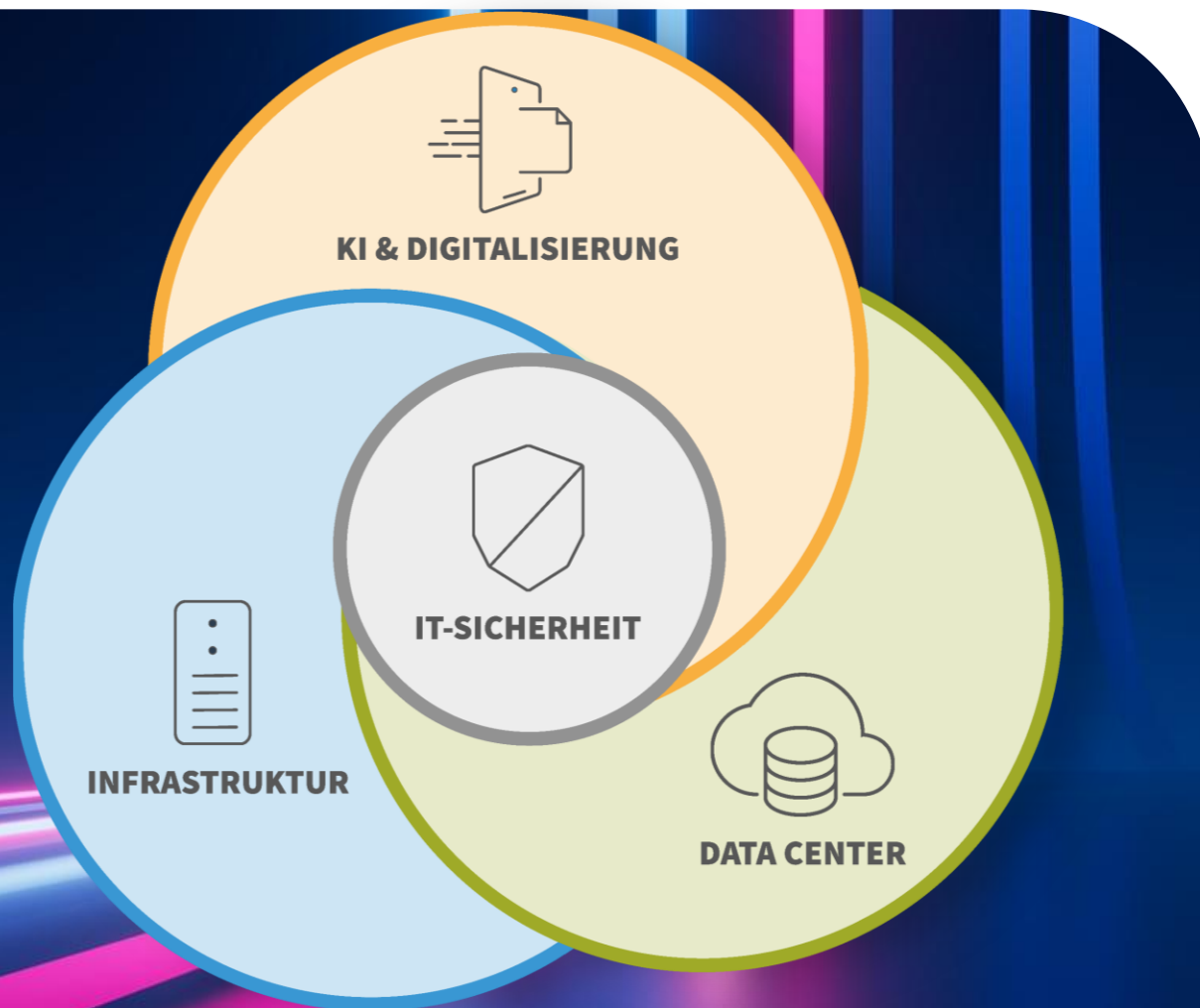


NetApp gives you the freedom to build, run and protect your environment – **your way**.  
Flexible. Reliable. Secure. Future-ready.

Über uns

# **Kupper IT**





## Maßgeschneiderte IT-Lösungen

- IT-Infrastruktur
- Rechenzentrum & Cloud Services
- KI & Digitalisierung
- IT-Sicherheit
  
- IT-Dienstleistungen & Beratung
- IT-Service & Support

IT. INNOVATIV. EFFIZIENT. SICHER.

## PORTFOLIO

## IT-Infrastrukturlösungen

Maßgeschneiderte Infrastrukturlösungen – wirtschaftlich, sicher und zukunftsfähig

- Netzwerkdesign & -installation  
(Server, Speicher, Netzwerk, Endgeräte & Peripherie)
- Virtualisierung von Servern, Desktops, Netzwerken  
(VMware, Microsoft, Citrix, XEN, NSX, VXLAN, SDN)
- HCI / Hyper Converged Infrastructure  
(S2D, vSAN)
- Backup- & Recovery-Lösungen für virtuelle & gemischte Infrastrukturen
- IT-Sicherheit  
(AV, Firewall, IPS, IDS, Encryption, MDR)
- LAN-, WAN & WLAN-Vernetzung



## Unser Leistungsumfang

1

### Analyse & Beratung

Detaillierte Analyse Anforderungen, Definition klarer Ziele.

2

### Planung & Konzeption

Technische Planung abgestimmt auf die Anforderungen und Umgebung unserer Kunden.

3

### Umsetzung & Rollout

Professionelle Installation und Integration in die bestehende Kunden-Umgebung.

4

### Dokumentation & Schulung

Transparenz und Sicherheit für den Kunden.

5

### Laufende Betreuung

Komplette Pflege der Kunden-Systeme.

Persönliche Betreuung, kurze Reaktionszeiten und **technische Expertise** für maximale Verfügbarkeit, höchste Sicherheit und eine IT, die mit den steigenden und hoch-individuellen Anforderungen unserer Kunden wächst.

## LÖSUNGSEXPERTISE &amp; RESSOURCEN

# Langjährige Partnerschaften

Wir bieten über unser gesamtes Portfolio hinweg Software- & Hardwarelösungen namhafter Hersteller an, die wir entlang ihres gesamten Produktlebenszyklus umfassend betreuen.



IHR IT-VERSORGUNGSUNTERNEHMEN

## Wir sind für Sie da.

Mit über 100 Experten an 5 Standorten  
in Mitteldeutschland.

Leipzig | Berlin | Chemnitz | Dresden | Görlitz



+ 49 341 30536-0



vertrieb@kupper-it.com



Prager Str. 15, 04103 Leipzig