



MIGRATION

vSphere to Netframe Migration

Migration methodology, tooling, and the key considerations for organisations moving from VMware vSphere to Netframe

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Overview

The Broadcom acquisition of VMware has changed the economics of enterprise virtualisation. Long-standing vSphere customers have seen renewal quotes climb to multiples of their prior cost, tier structures collapse, and per-VM components appear in licensing models that previously charged per CPU only.

Netframe is a KVM-based enterprise virtualisation platform built by Neon Dynamics as a direct alternative to vSphere. It is operationally familiar, priced per physical core with no per-VM fees, and ships with the migration tooling needed to move workloads off vSphere included for free.

This document is a short, practical overview of how a vSphere-to-Netframe migration is structured. It is intentionally light on detail; the audience is technical decision-makers and platform leads who need a working mental model of the migration before going into deeper planning.

Why organisations migrate

Three motivations come up consistently in our conversations with customers planning a move.

Cost. Quoted vSphere renewals after the Broadcom transition have commonly been two to five times prior pricing for equivalent capacity. Per-VM licence components penalise growth. A per-core model without per-VM tax restores predictability.

Operational risk. Several customers cite reduced confidence in the long-term vendor relationship: tier consolidation, channel changes, and the perception of being a non-strategic account. A clear primary-vendor relationship with a focused supplier resolves this.

Platform fit. A subset of customers have outgrown vSphere's operational ergonomics, particularly around agent sprawl, the proliferation of management UIs, and difficulty expressing operations as code. Netframe is API-first by design and ships as a single hardened image; both are deliberate responses to those pain points.

Pre-migration assessment

A successful migration begins with an honest inventory. The assessment phase typically takes one to two weeks and is the cheapest way to de-risk the whole programme.

For each VM in scope, capture: hostname, cluster, guest OS, vCPU and memory, total disk allocation, network attachments and VLAN membership, storage backing, snapshot state, backup configuration, and the business criticality tier of the workload.

The inventory becomes the input to wave planning. It also surfaces VMs that should not be migrated at all: orphaned test instances, abandoned proof-of-concept workloads, and applications scheduled for retirement.

Compatibility-wise, Netframe Converter supports vSphere 6.x, 7.x, and 8.x source environments, including vSAN-backed virtual machines. Most modern guest operating systems are supported. The two things worth flagging during assessment are paravirtualised drivers in Windows guests (Converter handles VirtIO injection automatically for standard images; hardened or unusual images deserve a pilot) and any custom hardware passthrough that must be re-established on the Netframe side after migration.

Wave-based methodology

The single most important decision in a migration programme is the order in which workloads move. We recommend a five-wave structure.

Wave 0, Target build. Construct the destination environment before moving any workloads: rack and burn-in, network and VLAN provisioning, NFS shared storage, Netframe Core install on every host, Netframe Manager, cluster formation, HA configuration, RBAC and identity integration, monitoring, and backup. This is a standalone project and usually takes one to two weeks.

Wave 1, Dev, test, and tooling. Move non-production environments first: dev VMs, staging, internal tooling, monitoring infrastructure. These workloads tolerate brief outages and exercise most of the operational primitives of the new platform. Wave 1 validates the toolchain and the runbook.

Wave 2, Tier-3 production. Internal file servers, secondary monitoring, intranet services. Migrated under change control with short outage windows acceptable. By the end of Wave 2, the migration runbook should be stable.

Wave 3, Tier-2 production. Line-of-business applications, secondary databases, reporting platforms. Migration windows scheduled into change windows with formal stakeholder sign-off. The team is migrating with confidence by this point.

Wave 4, Tier-1 production. The systems the business depends on directly: primary databases, customer-facing applications, payment systems. Planned in detail, scheduled into formal maintenance windows, with the migration sequence and rollback plan agreed with stakeholders in advance.

A representative timeline for an estate of around 100 production VMs is eight to twelve weeks end-to-end. Smaller estates compress proportionally; larger or more complex estates extend.

Netframe Converter

Netframe Converter is the tool that moves virtual machines from vSphere to Netframe. It is free to download and use with Netframe Core, has no per-VM or per-migration fee, and has no time limit on use.

The specific documentation around Netframe Converter use should be observed prior to migrations, however for high-level reference, the process of using Netframe converter is as follows:

- **Configure source** A source can either be an ESXi host (configured with SSH login) or a storage source (such as NFS volume) that has access to the VMDK and VMX files.
- **Configure staging storage** A VM is pulled from the configured source and converted by the Netframe Converter appliance. Converter will need sufficient storage to house the VM throughout this process. Ensure that either the Netframe Converter VM has ample local storage or you can configure an NFS mount to be used for staging.
- **Configure Destination** Specify credentials for the destination Netframe Core hypervisor you will be migrating VMs to.

VM conversion process

During conversion, the source VM is prepared for Netframe's environment automatically where the guest OS supports it:

- **Guest agent swap.** VMware Tools is removed from the guest and replaced with the QEMU Guest Agent, the KVM equivalent that provides graceful shutdown, IP reporting, and file-system quiesce for backups.
- **Driver alignment.** Source-side paravirtualised drivers are replaced with VirtIO equivalents so the guest sees Netframe's virtualised devices cleanly on first boot.
- **Disk and metadata translation.** Source disks are converted into Netframe's storage format, and the VM's CPU, memory, and network configuration is translated into Netframe's VM model and registered with the destination Core host.

Where the source OS is unsupported or has been customised in a way that prevents automatic handling, the converter flags the VM and operator intervention is required. Refer to the Netframe Converter documentation for the current supported guest OS matrix.

Converter exposes a REST API and can be driven from scripts or change-management tooling for bulk migrations.

Network and storage considerations

The most common cause of post-migration problems is network misconfiguration. For each VLAN attached to source VMs, the target environment must have an Open vSwitch network configured with the same VLAN ID, and the fabric must trunk that VLAN to the Netframe hosts. Validate VLAN reachability with a canary VM before each wave.

VMs retain their source-side IP addressing through migration. MAC addresses are preserved by default, so routing, DHCP reservations, DNS, and firewall rules continue to apply unchanged.

On the storage side, Netframe uses NFS as the shared backend. Source VMs backed by VMFS or vSAN are migrated by streaming disk content through the vSphere API; NFS-backed sources reachable from the Netframe hosts can use a faster direct path. Each migration should explicitly specify the target storage pool; mixed-tier environments can use the migration as the opportunity to redistribute workloads onto appropriate tiers.

Validation and the cutover

A migration is not complete when Converter reports success. The validation checklist that should run for every migrated VM covers: boot to expected runlevel, network reachability and DNS resolution, expected disks mounted, expected services running, application health check, external integrations reporting healthy, and performance metrics within bounds.

Failures should trigger an explicit rollback decision: fix forward on the Netframe side if the root cause is known and quick to remediate, or roll back to the source if the issue is unclear or remediation will overrun the window. The source VM should remain powered off but present for a defined retention period (typically 30 days; 90 days for tier-1) before final deletion.

Common risks and mitigations

- **Insufficient target capacity.** Size for the inventory plus headroom in Wave 0; revalidate utilisation at the end of each wave.
- **VLAN misconfiguration.** Validate VLAN reachability before each wave, with a canary VM carrying traffic on each VLAN to be used.
- **Missing paravirtualised drivers in Windows guests.** Pilot one VM of each Windows version in Wave 1; install VirtIO drivers in the source image before migration for hardened images.
- **Backup gaps during migration.** Ensure each VM is backed up immediately before migration, and that Netframe-side backup is in place before the source backup is decommissioned.
- **Surprise hardware dependencies.** The inventory should flag any VM with passthrough hardware or non-standard PCI configuration; plan individually.

Next steps

If you are considering a migration, the practical next steps are:

1. Download Netframe Core onto a small lab environment and run a single test VM end-to-end through Converter. This validates the toolchain in your environment in under half a day.
2. Build the workload inventory. Even if migration is months away, the inventory has standalone operational value.
3. Contact Neon Dynamics for an assessment conversation. There is no commitment; this is the conversation that usually informs whether and how the programme is scoped.

The most common feedback we receive after a completed migration is that it was less disruptive than the team expected. The methodology, the tooling, and the wave-based approach are all designed to make that the typical outcome rather than a fortunate one.