

Live Site Recovery for VMware Cloud Foundation on Lenovo ThinkSystem and ThinkAgile VX

Solution Brief

VMware Cloud Foundation provides an integrated private cloud platform that unifies compute, storage, networking, and lifecycle management for enterprise workloads. This integration concentrates risk as well as value. More of the business now depends on a single private cloud, including the management domain that operates it. At the same time, expectations for operational resilience have hardened. Auditors, regulators, and customers increasingly ask organizations to demonstrate that recovery procedures work, not simply that they exist. A recovery plan that lives in a document and is rehearsed once a year no longer meets that standard.

VMware addresses this with a validated dual-instance design for site protection and disaster recovery of VMware Cloud Foundation. Lenovo ThinkAgile VX provides the platform underneath it, so the recovery architecture is deployed on a validated foundation rather than assembled site by site. Unlike approaches that require a specific infrastructure architecture, Lenovo enables organizations to deploy VMware's Site Protection and Disaster Recovery solutions on the infrastructure model that best aligns with their recovery objectives, operational requirements, and budget.

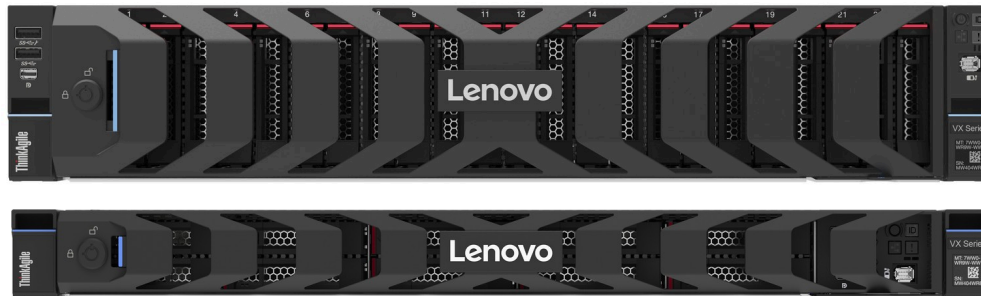


Figure 1. VMware Cloud Foundation 9.1 is validated on the ThinkAgile VX650 V4 (top) and VX630 V4 (bottom)

Business Challenge

Site-level disruption rarely announces itself. Infrastructure failures, regional events, human error, and cyber incidents all produce the same result. Critical applications and data become inaccessible at the moment they matter most. Consequences reach past IT into productivity, they also impact the customer experience, regulatory obligations, and revenue.

For organizations standardizing on an on-premises private cloud, several specific problems compound that exposure:

- **Manual recovery introduces risk:** Recovery runbooks written in documents depend on the right people, the right sequence, and the right decisions, always made under pressure. Every manual step lengthens recovery and widens the margin for error.

- **The management plane is often unprotected:** protecting individual workloads is not enough when the SDDC management components used to deploy, monitor, and govern the private cloud are themselves unavailable.
- **Testing is disruptive, so it does not happen:** teams that cannot rehearse recovery without touching production discover the gaps during a real event.
- **Recovery sites are overbuilt:** duplicating production as the default recovery design ties up capital in compute that exists only to sit idle, when capacity is frequently the real requirement, though some regulated organizations do mandate full production parity at the DR site.

The result is a disaster recovery posture that is expensive to maintain and difficult to prove.

Solution

This solution combines VMware Live Site Recovery with Lenovo ThinkAgile VX to deliver a validated framework for business continuity, disaster recovery, and service restoration across two VMware Cloud Foundation instances. Recovery plans act as automated runbooks. They define which workloads are protected, the startup and shutdown sequence, network mappings between sites, recovery priorities, and application dependencies. Administrators execute a plan rather than interpret a document, and the same plan is what gets rehearsed, so the tested procedure and the real one are identical.

Customers using a Lenovo ThinkAgile VX or ThinkSystem foundation gain the compute, storage, and operational consistency beneath that framework. It is co-engineered with VMware, factory integrated, and validated for VMware Cloud Foundation, which removes the integration risk of building each site independently. High-density NVMe configurations are optimized for vSAN ESA, Intel Xeon 6 and AMD EPYC options span 1U and 2U form factors, and Lenovo XClarity Integrator connects firmware and driver lifecycle to vSphere Lifecycle Manager so both sites stay on validated ThinkAgile VX Best Recipes. Lenovo Premier Support covers Lenovo hardware and VMware by Broadcom software through a single point of contact.

Lenovo delivers one recovery platform with four deployment options. Organizations can standardize on ThinkAgile VX end-to-end, pair ThinkAgile VX compute with ThinkSystem DG, DM, DS, or DE storage for independent scaling, deploy ThinkSystem compute with external storage on its own, or combine approaches in a hybrid architecture. In every scenario, VMware provides a consistent operating model, allowing infrastructure decisions to be driven by business and workload requirements rather than operational complexity.

Replication options

Replication is the mechanism that keeps the recovery site current, and the solution supports two models that can coexist in the same environment:

- **vSphere Replication** is hypervisor-based and storage independent. It is configured per virtual machine, so recovery point objectives follow workload priority and the two sites do not need identical storage platforms. This is the natural fit for symmetrical ThinkAgile VX designs, where replication moves between vSAN ESA clusters without involving an external array.
- **Array-based replication** is performed by the storage platform and coordinated by VMware Live Site Recovery through a Storage Replication Adapter (SRA) supplied by the storage vendor. It operates at datastore or volume granularity and offloads data movement from the hypervisor, which suits large, protected datasets and tighter recovery point objectives. This is the model behind capacity-optimized and hybrid designs built on Lenovo ThinkSystem storage.

The orchestration layer sits above both. Recovery plans, protection groups, testing, failover, and re-protection behave identically, so the replication decision comes down to dataset size, recovery point objective, and inter-site bandwidth rather than to how the environment is operated. For customers choosing a disaggregated architecture with Lenovo ThinkSystem storage, always verify SRA compatibility across the selected storage platform, firmware, and VMware release. A quick compatibility review upfront

helps ensure smooth deployment and reliable recovery operations.

Use Cases

Organizations apply this solution wherever the loss of a site would interrupt services the business cannot pause. These three scenarios below build on one another.

1. Site Recovery after an unplanned failure.
2. Audited failover testing from site A to site B
3. Disaggregated recovery site

All three run on the same recovery plans and the same operational workflow, so an organization can start with one and expand to the others without redesigning the recovery process.

Site Recovery after an unplanned failure

A full or partial outage at the production site, whether from power loss, a storage or network failure, a rack-level failure, a natural disaster, or a cyber incident, takes the affected VMware Cloud Foundation resources offline. The team declares a disaster and executes a recovery plan at the recovery site.

VMware Live Site Recovery automatically promotes the replicated workloads, applies recovery-site resource mappings, connects virtual machines to the correct networks, starts services in policy-defined order, and verifies each step. The VMware Cloud Foundation management services are sequenced alongside the applications they govern, so operators regain the tools needed to run the environment rather than recovering workloads into an unmanaged estate.

When the protected site returns, reprotection and automated failback restore the original posture.

Audited failover testing from site A to site B

A regulated organization must demonstrate that recovery works, not simply that a plan exists. Using replicated virtual machines and an isolated test network at site B, the team runs a recovery plan while production at site A stays online and untouched.

The test exercises the real sequencing, resource mappings, and application dependencies, and measures actual recovery time against the objective on record using storage replication. Results are captured and the test environment is torn down, leaving storage replication in place.

Because the exercise is non-disruptive, it can run on the cadence the audit cycle requires instead of once a year inside a maintenance window, and each run produces evidence for auditors and internal risk reviews.

Disaggregated recovery site

An organization protecting large datasets needs recovery capacity to grow faster than recovery compute, particularly when only a subset of workloads must come back online immediately after a disaster. Rather than duplicating the production cluster, it deploys a smaller ThinkAgile VX footprint at the recovery site and places the protected data on Lenovo ThinkSystem DG, DM, DS, or DE storage using array-based replication.

Recovery plans, testing, and failback behave exactly as they do in a symmetrical design, while capacity and compute scale on separate schedules. The result is a recovery site sized for the business requirement instead of a mirror image of production.

What We Protect

The solution protects the workload profiles typically consolidated onto VMware Cloud Foundation:

- **VMware Cloud Foundation management services:** the SDDC components used to deploy, monitor, and govern the private cloud.

- **Business-critical virtual machines:** databases, application servers, and line-of-business services, grouped into protection groups by recovery priority.
- **Planned migration events:** maintenance, power and network upgrades, hardware refresh, and facility relocations, executed as controlled migrations rather than outages.

Disaster recovery requirements vary significantly across organizations. Some prioritize the fastest possible recovery, others seek cost-efficient capacity, and many need to balance operational simplicity with long-term scalability. Recovery-site sizing should align with recovery objectives, application criticality, capacity growth, and budget requirements rather than a one-for-one copy of the production environment. Lenovo's broad VMware-certified portfolio supports these differing objectives through aggregated, disaggregated, and hybrid recovery architectures.

Regardless of whether an organization deploys an aggregated HCI, disaggregated, or hybrid recovery-site architecture, VMware Live Site Recovery provides a consistent orchestration and recovery workflow, while Lenovo enables customers to select the infrastructure architecture that best aligns with their recovery time objectives (RTOs), recovery point objectives (RPOs), budget considerations, capacity growth expectations, and operational strategy.

Lenovo supports these differing recovery objectives through three deployment architectures:

- **Aggregated HCI Architecture: Optimized for Simplicity and Rapid Recovery.**
A fully integrated ThinkAgile VX deployment — for example the ThinkAgile VX650 V4, VX630 V4, or other ThinkAgile VX models sized to workload density and performance requirements — with VMware vSAN ESA provides a consistent operational model across production and recovery sites. Because compute and storage are delivered as a single platform, deployment and ongoing administration are simplified, which suits organizations prioritizing streamlined management, standardized lifecycle operations, and accelerated recovery execution.
- **Disaggregated Architecture: Optimized for Capacity Efficiency and Independent Scaling.**
Organizations protecting large datasets, long-retention data, or storage-intensive workloads often have different growth patterns for compute and storage. ThinkAgile VX compute — or ThinkSystem compute with external storage — can be paired with Lenovo ThinkSystem storage platforms including:
 - ThinkSystem DG Series for enterprise all-flash performance and large-scale capacity
 - ThinkSystem DM Series for advanced data management, replication, and storage efficiency
 - ThinkSystem DS Series for flexible block-storage deployments and capacity-oriented recovery designs
 - ThinkSystem DE Series for entry-level, cost-optimized block storage

This Disaggregate model still runs under the same VMware Cloud Foundation recovery workflow and applies to both the management domain and workload domains, so storage capacity and compute resources can expand independently, aligning recovery-site investment with actual business requirements instead of maintaining excess recovery compute.

- **Hybrid Architecture: Optimized for Balanced Business Outcomes.**
Many organizations have different requirements at the production and recovery sites. A hybrid design deploys a fully integrated ThinkAgile VX platform in production — for example the ThinkAgile VX650 V4 or VX630 V4 — while using disaggregated ThinkSystem DM, DG, DS, or DE storage at the recovery site to improve capacity efficiency and reduce cost. Recovery orchestration, testing, failover, and failback remain consistent regardless of the underlying infrastructure design.

Business Outcome

This solution changes the character of disaster recovery rather than simply speeding it up. Recovery becomes a rehearsed, automated procedure with a known sequence and a known duration, instead of an improvised response whose outcome is discovered during the event.

This approach delivers four measurable business outcomes:

- **Verifiable constant readiness:** regular non-disruptive tests produce evidence for compliance and audit reviews.
- **Lower operational risk:** automated recovery plans replace manual runbooks, so recovery does not depend on specific individuals being available.
- **Recovery-site economics under the customer's control:** capacity-optimized, storage-centric, and hybrid designs avoid overbuilding recovery compute when capacity is the actual requirement.
- **Data sovereignty:** recovery data and recovery operations remain on infrastructure the customer owns and governs.

Conclusion

Disaster recovery is no longer just about recovering data. It is about rapidly restoring an entire private cloud platform and the business services that depend on it. For VMware Cloud Foundation customers, recovery must be orchestrated, repeatable, and demonstrably ready before an outage or cyber event occurs.

Lenovo delivers that foundation through ThinkAgile VX and the broader ThinkSystem portfolio. Combined with VMware Live Site Recovery, customers gain automated recovery workflows, non-disruptive recovery testing, and coordinated failback capabilities across protected and recovery sites. Lenovo's unique ability to support aggregated HCI, disaggregated storage architectures, or hybrid deployment models allows organizations to optimize recovery infrastructure for performance, capacity, scalability, and cost while maintaining a consistent recovery process. Backed by Lenovo engineering expertise, validated designs, Premier Support, and rapid procurement options such as Top Choice Express for qualifying configurations, customers can move from recovery planning to recovery readiness faster and with greater confidence.

Author

Jessie Lacome is a Platform Solutions Product Manager at Lenovo with extensive experience in enterprise virtualization and modern infrastructure platforms. He brings a strong consulting and solutions architecture background, supporting customers across on-premises and hybrid environments. Jessie has previously held roles at Salesforce, Citrix, and Dell, where he focused on virtualization and infrastructure solutions.

For More Information

To learn more about VMware Live Site Recovery for VMware Cloud Foundation on Lenovo ThinkAgile VX, contact your Lenovo representative or Lenovo Business Partner, or visit the resources below.

References:

- VMware Validated Solutions: Site Protection and Disaster Recovery for VMware Cloud Foundation:
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- Lenovo ThinkAgile VX Series Datasheet, DS0104:
<https://lenovopress.lenovo.com/datasheet/ds0104-thinkagile-vx-series>
- Lenovo ThinkSystem DG Series Datasheet, DS0170:
<https://lenovopress.lenovo.com/datasheet/ds0170-thinksystem-dg-series>
- Lenovo ThinkSystem DM Series All-Flash Array Datasheet, DS0047:
<https://lenovopress.lenovo.com/datasheet/ds0047-lenovo-dm-series-all-flash-array>
- Lenovo ThinkSystem DS Series storage resources:
<https://lenovopress.lenovo.com/storage/thinksystem/ds-series>

Related product families

Product families related to this document are the following:

- [ThinkAgile VX Series for VMware](#)
- [VMware Alliance](#)

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