

Hybrid Cloud Management for Lenovo ThinkAgile MX with Azure Arc

Solution Brief

Distributed operations have become the normal state of enterprise IT rather than a transitional phase. Data sovereignty requirements, latency-sensitive applications, and the cost of moving large datasets all argue for keeping significant workloads close to where data is created and consumed. At the same time, organizations have invested heavily in cloud operating models and do not want to maintain a second, parallel set of practices for everything that stays on-premises.

Azure Arc addresses this by extending Azure Resource Manager beyond Azure itself. Physical servers, virtual machines, Kubernetes clusters, and data services hosted outside Azure are projected into the Azure portal as first-class Azure resources, where the same policy, monitoring, and security services apply to them as to native cloud resources.

Lenovo ThinkAgile MX provides the infrastructure half of that equation: a validated hyperconverged platform for Microsoft hybrid cloud, engineered and tested by Lenovo with Microsoft so that customers deploy a known-good configuration rather than assembling and qualifying one themselves.



Figure 1. Lenovo ThinkAgile MX630 V4



Figure 2. Lenovo ThinkAgile MX650 V4

Business Challenge

Hybrid estates rarely fail because any single environment is difficult to run. They become expensive because each environment is run differently. The operational cost shows up in four places:

- **Fragmented visibility.** Inventory lives in separate consoles, so answering a question as basic as which servers are running an unsupported OS build requires reconciling several sources by hand.
- **Inconsistent governance.** Policy defined in the cloud does not automatically reach on-premises systems, leaving compliance posture uneven and difficult to evidence during audit.

- **Duplicated security tooling.** Threat detection and vulnerability management are frequently deployed twice, with separate agents, separate alerting, and separate skills required to interpret each.
- **Thin staffing at the edge.** Branch, retail, and manufacturing sites often have no dedicated IT presence, so any procedure that assumes someone can walk to the rack does not scale across dozens or hundreds of locations.

Each of these is tolerable in isolation. Together they mean that adding sites increases operational effort roughly linearly, which is the opposite of what a hybrid cloud strategy is supposed to deliver.

Solution

The solution pairs validated Lenovo infrastructure with Microsoft's hybrid management plane, so that on-premises and edge systems are operated with the same tools and the same policies as cloud resources.

- **Validated Lenovo infrastructure**

Lenovo ThinkAgile MX is a fully engineered, jointly validated, and factory-integrated Azure Local platform. Because Lenovo designs and tests the hardware, firmware, and OS combination as a unit, customers do not carry the integration and qualification effort themselves, which materially shortens the path from delivery to production.

The portfolio spans datacenter and edge deployments:

- **Rack:** ThinkAgile MX V4 (MX630 V4, MX650 V4, MX650a V4) and ThinkAgile MX V3 (MX630 V3, MX650 V3)
- **Edge:** ThinkAgile MX455 V3 Edge, supporting compact two-node clusters for sites without datacenter facilities

Lifecycle management is coordinated through Lenovo XClarity alongside the Azure tooling, so firmware and driver updates are applied as validated bundles rather than as independently sourced components.

- **Azure Arc as the control plane**

Once an Azure Local instance is deployed on ThinkAgile MX, the cluster and its Arc resource bridge are created in an Azure resource group, and every virtual machine deployed to that cluster from the Azure portal appears automatically as an Arc-enabled machine. Systems built outside that path, including virtual machines created directly on the cluster and physical Windows and Linux servers elsewhere in the estate, are onboarded by running a connection script, after which they are managed identically.

From that point the estate is addressable through Azure Resource Manager. Azure Policy enforces configuration standards, Azure Monitor collects health and performance telemetry, and Microsoft Defender for Cloud extends threat protection to hybrid resources, all from the same portal experience an operations team already uses for cloud workloads.

Use Cases

Azure Arc delivers value differently depending on what an organization needs to manage. The four use cases below represent the most common entry points for ThinkAgile MX customers, from consolidating an existing virtual machine estate to standing up new infrastructure at unstaffed sites.

- [Unified management of a hybrid virtual machine estate](#)
- [Governed Kubernetes across hybrid and multi-cloud](#)
- [SQL Server estate inventory and compliance](#)
- [Zero-touch provisioning for distributed and edge sites](#)

Unified management of a hybrid virtual machine estate

An organization running virtual machines across an Azure subscription, a central datacenter, and several remote sites needs one inventory and one policy set. Deploying Azure Local on ThinkAgile MX and connecting it through Azure Arc projects every on-premises virtual machine into the Azure portal, whether it was provisioned from Azure or created locally and onboarded with the connection script.

The practical result is that access control, tagging, patch policy, and monitoring are defined once and applied everywhere, and an operator does not need to know where a machine physically runs in order to manage it.

Governed Kubernetes across hybrid and multi-cloud

Container platforms tend to proliferate faster than the governance around them. Arc-enabled Kubernetes brings clusters running on ThinkAgile MX into the same Azure control plane as clusters running in Azure or on other clouds, exposing cluster configuration, connectivity status, Kubernetes version, and installed extensions in one view.

That gives platform teams centralized cluster visibility, consistent policy enforcement, and managed extension deployment across environments, so that a cloud-native application pattern can be applied to workloads that must remain on-premises.

SQL Server estate inventory and compliance

SQL Server instances are among the most audited and most license-sensitive assets in the estate, and they are frequently the least well inventoried. Arc-enabled SQL Server surfaces instances running on ThinkAgile MX in the Azure portal alongside cloud databases, with visibility into version, configuration, and security posture.

For teams preparing for an audit or planning a modernization wave, this turns a manual discovery exercise into a query against a live inventory.

Zero-touch provisioning for distributed and edge sites

Two Azure Arc capabilities currently in preview are aimed directly at estates with many lightly staffed locations.

- **Machine Provisioning** automates server deployment from pre-configured images, including downloadable Linux ISO files, supporting a zero-touch model in which hardware is racked and powered on locally and configured entirely from Azure. Provisioned systems can then be brought into an Azure Local instance for consistent ongoing management.
- **Site Management** provides structure on top of that scale, organizing distributed resources into named sites so that all resources belonging to a location are visible and manageable as a unit.

Both features are in preview and their capabilities may change before general availability, so they should

be evaluated rather than committed to in production designs. For organizations planning a large edge rollout on ThinkAgile MX455 V3 Edge or two-node rack configurations, however, they indicate the operating model this platform is heading toward.

Workloads

ThinkAgile MX is validated for the workload profiles that typically anchor a hybrid deployment:

- **Virtualized workloads:** general-purpose Windows and Linux server estates consolidated onto Azure Local clusters
- **Containerized applications and Azure Kubernetes Service:** cloud-native workloads that need to run close to on-premises data
- **SQL Server workloads:** database instances kept on-premises for latency, sovereignty, or licensing reasons
- **Edge computing:** retail, manufacturing, and branch sites, including two-node clusters where rack space and power are constrained
- **Cloud-connected infrastructure management:** the Arc control plane itself, spanning all of the above

Cluster sizing follows standard Azure Local guidance for the chosen ThinkAgile MX model. Engage your Lenovo representative for a configuration sized to your workload profile and site topology.

Business Outcome

Bringing on-premises and edge infrastructure under Azure Arc changes the shape of operational effort rather than simply reducing a line item:

- **One operating model instead of two.** Teams apply existing Azure skills, tooling, and automation to on-premises resources, so hybrid does not require a second discipline to be built and maintained.
- **Governance that reaches everywhere.** Policy and compliance state are defined and evidenced centrally, which shortens audit preparation and removes the gaps that appear when environments are governed separately.
- **Security consolidated on one plane.** Azure Monitor and Microsoft Defender for Cloud extend to hybrid resources, replacing parallel monitoring and threat-detection stacks with a single set of alerts and a single set of skills.
- **Deployment effort removed at the front.** Because ThinkAgile MX arrives as a validated, factory-integrated configuration, the design, integration, and qualification work that normally precedes a hyperconverged deployment is already complete.
- **Scaling that does not track headcount.** Centralized visibility and remote provisioning mean that adding sites does not require adding local IT presence at each one.

Lenovo has not published benchmark or TCO figures for this configuration. Contact your Lenovo representative for sizing and cost modeling specific to your environment.

Conclusion

Combining Azure Arc with Lenovo ThinkAgile MX gives organizations a hybrid cloud platform that is simple to deploy, consistent to operate, and governed as a single estate. Validated Lenovo infrastructure removes the integration risk at the front of the project; the Azure Arc control plane removes the operational divergence that usually follows it.

The result is that workloads which need to stay on-premises, whether for sovereignty, latency, or cost, no longer sit outside the organization's cloud operating model. They are managed, secured, and governed alongside everything else, from the same portal, by the same team.

For More Information

To learn more about Azure Arc on Lenovo ThinkAgile MX, contact your Lenovo representative or Lenovo Business Partner, or visit the resources below.

References:

- Implementing Microsoft Azure Arc Portal on Lenovo ThinkAgile MX
<https://lenovopress.lenovo.com/lp2482-implementing-microsoft-azure-arc-portal-on-lenovo-thinkagile-mx>
- Lenovo Press: Azure Arc on ThinkAgile MX:
<https://lenovopress.lenovo.com/lp1682-azure-arc-on-thinkagile-mx>
- Microsoft: Azure Arc overview:
<https://learn.microsoft.com/en-us/azure/azure-arc/overview>
- Microsoft: Azure Arc-enabled servers prerequisites and supported operating systems:
<https://learn.microsoft.com/en-us/azure/azure-arc/servers/prerequisites>

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Related product families

Product families related to this document are the following:

- [Microsoft Alliance](#)
- [ThinkAgile MX Series for Microsoft Azure Local](#)

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