



Lenovo ThinkAgile CP Series: A fully featured turnkey private cloud, with fast deployment and easy management

Executive summary

Private cloud platforms typically require significant initial and ongoing investments in time, staff resources, and money. A new product from Lenovo can offer the benefits of the private cloud with much less time and effort, freeing up resources to tackle your organization's critical goals.

At Principled Technologies, we found Lenovo™ ThinkAgile™ CP offers the following benefits:

- **Rapid deployment:** ThinkAgile CP deployment required just a few hours, while application deployment took seconds
- **Simple management:** Common management tasks were completed in just a few steps by our IT generalist administrator
- **Key private cloud benefits**, including:
 - On-demand delivery of resources
 - Easy-to-use self-service experience—users can find a VM template in less than 22 seconds
 - Built-in, secure multi-tenancy
 - Orchestration of application delivery
 - Metering features to support chargeback—creating metering reports takes less than a minute of work

In this paper, we'll discuss some common challenges you may face with a traditional approach to the private cloud, and how Lenovo ThinkAgile CP can help you overcome them with easy deployment and simple management.

Crate to cloud in
about
**5 hours, 15
minutes**

On-demand, self-service
application delivery in
**under 30
seconds**

Maintenance
updates¹ with
**zero hands-on
effort**



Private cloud challenges and preparing to avoid them

Deploying private cloud platforms is rarely simple, even for experienced administrators. From staff and finances to complex infrastructure, the challenges of a traditional private cloud affect several areas of your organization. Let's discuss these challenges and how ThinkAgile CP can help you avoid the potential problems of private cloud deployment.

Your staff: Focus your IT on innovation rather than overhead

Navigating the design, procurement, and installation phases for a private cloud platform typically requires strategizing across teams in multiple technical domains. Server, virtualization, network, storage, service delivery, and DevOps teams may all be involved in designing, delivering, and maintaining a customized private cloud—and with each group comes new and different opinions. To succeed in the planning process, the teams need to use a cohesive approach to prioritization, design, integration, and software compatibilities. They'll also need to agree on the scope of IT resources and applications to deliver as a service, which is key to delivering true cloud agility. This process can take months, and at the end, you may need to hire and train teams for deployment and ongoing operations. Maintaining the cloud can also present recurring challenges as the group addresses software certifications, hardware compatibilities, and maintenance issues. Consider how these challenges may already exist in your organization and how they affect your new IT initiatives today.

ThinkAgile CP can help to mitigate many of these factors, providing a validated, turnkey cloud platform right out of the box. In our data center, ThinkAgile CP deployment services set up the Lenovo platform in less than a day, and the maintenance tasks we tested were quick and easy for our IT generalist to perform.

Your wallet: Invest IT dollars in growth instead of maintenance

In a 2016 survey from Deloitte, CIOs of private companies reported allocating the majority of their technology budgets (57 percent) to maintaining existing business operations rather than new projects and innovation.² Over a third of the executives who responded to a 2017 survey from BMC Software and Forbes Insights said they devoted more than 50 percent of their budget to maintenance.³ How much of your IT budget is allocated to everyday operations?

Your business could achieve significant benefits from a private cloud platform that is nearly maintenance-free.

By streamlining IT service delivery for your users, ThinkAgile CP could reduce a large portion of your ongoing IT costs.

Skills required to manage a DIY private cloud

A private cloud comprises networking, compute, storage, and specialized software. Lenovo ThinkAgile CP comes with these components bundled and ready to go, and the result is a turnkey platform where users can select their own application resources to use in just hours. Our experience reflects Lenovo's goal of making management easy for the user. We believe that the skillset required for ThinkAgile CP is generally equal to the skillset required for a public cloud platform.

But what if you choose to build your own private cloud? Your IT staff must account for networking, compute, storage, and software skills themselves. For networking, your DIY cloud team needs to understand basic concepts such as VLANs, DNS, and subnetting, but also more complex topics such as software-defined networking (SDN) with VMware® NSX or OpenStack® Neutron. For the compute layer, you'll need teams trained in performance monitoring and resource allocation. Your storage teams will need training in software-defined storage technologies such as Ceph or VMware vSAN™. These skills take years to mature, and that time will present an ongoing cost to your business for training and/or hiring.

Your technology: A turnkey private cloud platform

Some companies market cloud platforms that amount to a cluster of hypervisors, requiring your staff to assemble the components for the private cloud features you need. To use one of these virtualization platforms as a true private cloud platform, your staff must build additional multi-tenant self-service and automation in addition to supporting the virtualization platform itself. Your staff will also need to provide ongoing support for compatibility, certification, and testing as components and customizations change—and that's not accounting for the amount of work it takes to support your current infrastructure.

ThinkAgile CP is delivered as a pre-integrated, turnkey cloud platform. Lenovo's pre-validated platform ensures the components of ThinkAgile CP will work together to provide the cloud features of multi-tenancy, self-service, and end-to-end automation. This pre-integration and validation allows your IT staff to focus on key business objectives instead of dealing with compatibility issues and all of the cloud features of multi-tenancy, self-service, and end-to-end automation.

Putting it all together

Your business could grow if your IT resources were focused on mission-critical endeavors rather than servicing routine requests and maintenance. In the next few sections, we'll explore how Lenovo ThinkAgile CP could make this possible.



Lenovo ThinkAgile CP Series: Fast and easy deployment

Lenovo ThinkAgile CP Series aims to make having an on-premises private cloud platform as easy and hands-off as possible. This section outlines our experience in setting up and using the platform in our own data center.

After the hardware arrived at our doorstep, ThinkAgile CP deployment services came to set up the platform. The hardware came pre-cabled, so the **only work required was verification and site configuration**. The services team spent five hours and 15 minutes performing deployment tasks. Our IT generalist just needed to provide the deployment team with network information.



Access your private cloud from anywhere

Broad network access is a fundamental benefit of the cloud. When our deployment was complete, we had a web-based management portal we could access from any location—no VPN necessary. We accessed this portal from our desktop, laptop, and mobile devices and found it provided easy, on-the-go management.

Complete most
management
tasks in less than
30 seconds

Easy management with ThinkAgile CP

Our IT generalist acted as the cloud administrator and easily accomplished twelve common management tasks in just a few steps. Each task took less than a minute of his time, with **10 of 12 tasks requiring less than 30 seconds** to complete. However, many routine management tasks—such as adding or modifying VM networks, creating VM templates, and deploying VMs—can also be delegated to self-service users, empowering them with IT resources on demand rather than forcing them to wait for an administrator to get to their request.⁴

As you read the following sections, consider the length of time your organization currently needs to deliver the same services on behalf of your application or line-of-business owners.

Managing multi-tenancy

IT as a service provides requestors with self-service access to obtain the compute, network, and storage resources their applications need. In ThinkAgile CP, administrators can provide this access by using virtual datacenters (VDC) to group users into tenant organizations and assign them pools of compute, storage, and networking capacity. Tenant users can self-provision and manage their own VMs from these resource pools, freeing up the IT staff's time.

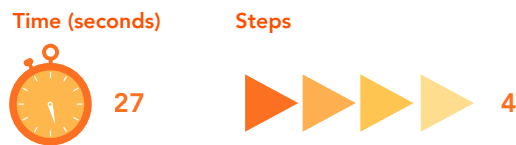
Accomplishing these tasks in other environments might require separate tools, consoles, or plugins that only your IT staff can access, thus consuming more time. Not so with ThinkAgile CP. It took our IT generalist **three steps and just over 16 seconds** to create a VDC from within the management console, and **four steps and about 27 seconds** to create and apply a security policy to protect the networks assigned to the VDC. The VMs that self-service tenants provision will be protected by this network security policy, and users can further secure individual VMs with more policies.

Create a virtual datacenter in as little as 3 steps

Creating an additional virtual datacenter with differing resource capacities



Creating and applying a firewall rule



Self-service provisioning

In a traditional IT environment, the IT team will typically provision VMs with the necessary storage and networking upon request. The provisioning process may take significant time as the IT staff and requesting stakeholders collaborate on specific application requirements. The cloud offers an on-demand, self-service alternative that empowers users to provision and change their own IT resources at will. ThinkAgile CP can deliver these features directly to your application owners, freeing your IT staff from fielding routine provisioning requests so they can focus on more strategic IT goals.

ThinkAgile CP offers three ways to provision VMs: from scratch, from templates served by the curated application marketplace, or from custom templates the user's company designs.⁵

We tested the template method and found discovering the right VM template in the marketplace was as easy as browsing a menu. Finding and downloading a new template took us just **six steps and a little over 21 seconds** in the application marketplace.

Find and download a new template in less than 22 seconds

Finding and downloading a new VM template from the application marketplace





Working with VMs

The ThinkAgile CP interface made it simple to provision and manage VMs through a dashboard. Deploying three VMs required just **six steps and less than 29 seconds**, and reallocating VM resources needed only **six steps and about 24 seconds**. You can also decommission a VM from the same screen, which required only **three steps and around 11 seconds**. With ThinkAgile CP, application owners and business users can manage their own VMs within their own virtual data centers, so your IT staff can stay focused on more strategic initiatives.

Complete each VM task in less than 29 seconds

Deploying a Windows® 10 VM



Reallocating resources on a VM



Decommissioning a VM

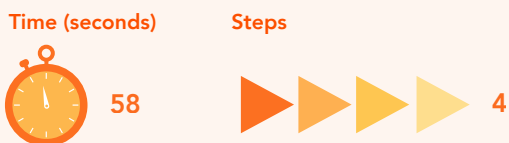


Complete metering and billing tasks in less than 1 minute

Metering and billing

Lenovo ThinkAgile CP offers a metering manager as a simple way to keep track of the resources your users consume. With the metering manager, you can generate reports that track usage and export the data as a CSV for use in your billing and chargeback process. Creating a new report required just **four steps and just over 58 seconds**, and exporting it required only **three steps and about 13 seconds** of our IT generalist's time.

Creating a new report



Exporting a report





Maintenance updates

We didn't need to do any real work to apply maintenance updates to ThinkAgile CP. We simply received a notification that an update would occur at a specified time with the option to reschedule if the update would require downtime. The complete ThinkAgile CP software stack—including the network interconnect software, hypervisor, and storage OS—received updates that took just **62 minutes and zero hands-on effort** from our IT generalist.

In a DIY private cloud environment, your staff would need to update hardware, firmware, and software while navigating multi-vendor interoperability rules. This may create unforeseen changes in your environment, causing multiple challenges for automation and self-service. You may also need to test these changes in a separate environment before implementing them in your platform. When the time for implementation arrives, you'll still need to coordinate the changes across multiple maintenance windows. Wouldn't a cloud platform that helps avoid these common challenges be an ideal solution for your organization?

Complete maintenance updates without manual intervention

Save up to 62.8% of cloud costs with ThinkAgile CP versus the public cloud

Save up to
62%
of cloud costs with
Lenovo ThinkAgile CP

over three years versus
a public cloud

How do the costs of Lenovo ThinkAgile CP compare to those of a public cloud platform? We compared the costs associated with Lenovo ThinkAgile CP to those of a popular public cloud service: Amazon Web Services™ (AWS).

While ThinkAgile CP requires just a single up-front purchase, public cloud platforms typically employ a billing model that mixes up-front costs with ongoing payments for cloud services. Does that shift in billing models actually save money? Our range-based AWS cost analysis considers different performance levels, comparing equivalent numbers of VMs across the two platforms. We found that businesses with a large number of VMs could see **up to 62.8 percent savings with ThinkAgile CP.**

For more details about our cloud cost analysis, see [the science behind this report.](#)



Conclusion

When we tested Lenovo ThinkAgile CP, we found it offered a fully featured and pre-configured private cloud environment that did away with many of the management hassles that can accompany do-it-yourself platforms. In our hands-on experience, ThinkAgile CP was simple to set up. ThinkAgile CP deployment services installed the platform in a few hours, with minimal involvement from our team. The platform was also simple to manage and update, with most management tasks requiring just a few steps and less than a minute of time.

Think about your current cloud strategy. Without a ready-to-go platform, will your IT staff be able to deliver and maintain an easy-to-use self-service cloud in a timely, cost-effective manner? If you have doubts about your current approach, consider how your organization could benefit from the results we found in our ThinkAgile CP testing.

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- 1 Here, we define “maintenance updates” as updates to the network interconnects, hypervisor, and storage software.
 - 2 Khalid Kark, Anjali Shaikh, Caroline Brown, “Technology budgets: From value preservation to value creation,” accessed October 8, 2018 <https://www2.deloitte.com/insights/us/en/focus/cio-insider-business-insights/technology-investments-value-creation.html>
 - 3 Stephen Watts, “IT Budgeting: Top Trends for 2017,” accessed October 17, 2018 <https://www.bmc.com/blogs/it-budget-trends/>
 - 4 Upon publication in 2018, this text was based on Cloudistics documentation. As of H2 2019, that documentation is no longer available.
 - 5 At the time of this study, we used Cloudistics Marketplace to test the “Self-service provisioning” section of this report. As of H1 2019, Lenovo has rebranded the Cloudistics Marketplace as the Lenovo Cloud Marketplace. Our testing reflects the use of the marketplace as it existed in 2018.

Read the science behind this report at <http://facts.pt/8na5km> ►



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