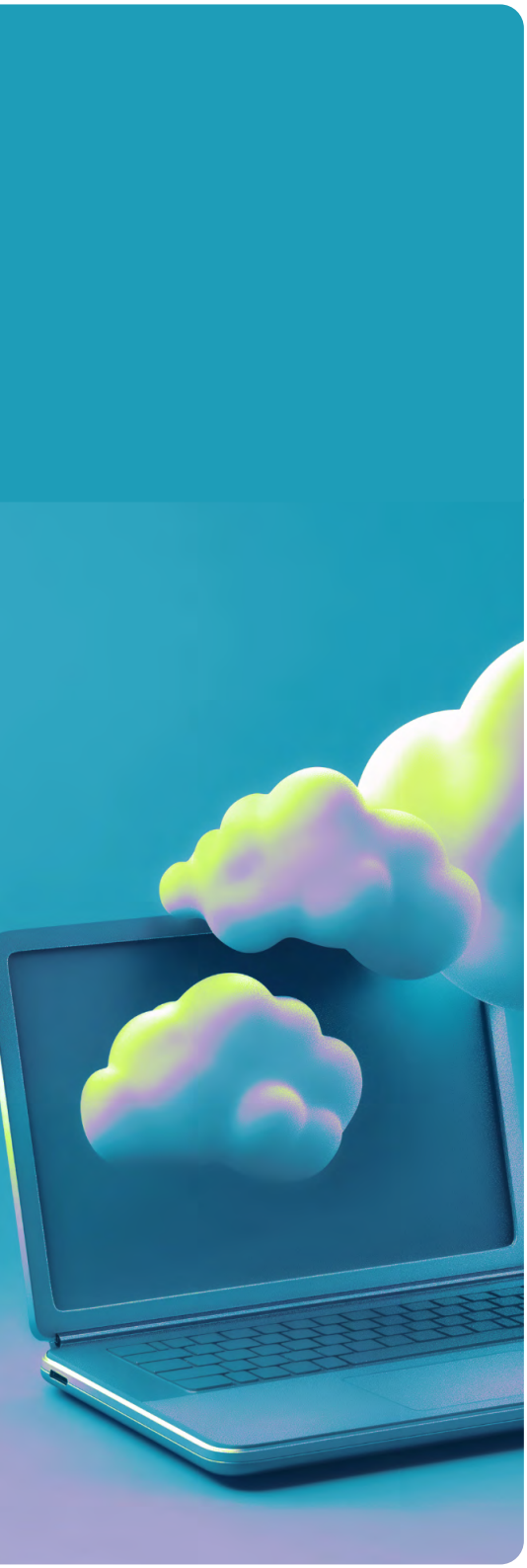
nerdio

WHITE PAPER

9 ways to reduce the cost and risk of DaaS with Nerdio Manager for Enterprise



With over one-third of enterprises experiencing budget overruns when switching to the cloud, cloud computing costs and keeping them in check are top of mind.

Nerdio has studied thousands of Azure Virtual Desktop deployments and analyzed which resources take on the highest costs. This includes virtual resources like storage, virtual machines, networking, and non-tech items like licensing, support, and training.

Dive into the nine cost-saving strategies generated from this informed perspective to learn how your organization can cut cloud costs alongside organizational risk.

Save on licensing fees

Nerdio licenses are inexpensive, starting at $6 per monthly active user for our Core edition and increasing slightly to $10 per monthly user for the Premium edition. Roughly 90% of Nerdio customers earn back their Nerdio license costs within the first 6-7 days of using Nerdio Manager for Enterprise.

The pricing model is extremely flexible. We charge based on active users vs named users, so companies only pay for the users that have been actively using AVD through Nerdio. Let's take 700-800 active users as an example. During the holiday season, this number might drop by 40-50% given vacations and time off. In that case, the company will only be invoiced for their approximate 350-400 users. This is what using cloud-based technologies is all about – flexibility.

Because Nerdio Manager is installed directly into a customer's Azure tenant, the buying process could not be easier. After downloading from the Azure Marketplace, customers activate their licenses in minutes, and billing is streamlined.

Nerdio licenses are comprehensive without any annual contracts. Support, as well as all future versions of our software, are included in license costs. And there is no vendor lock-in. Companies can start and stop using Nerdio any day of the month, no questions asked, without any upfront investments or penalties for termination.

Reduce learning curve and cost of deployment

Nerdio's solution offers everything needed to build, scale, and cost-optimize virtual workloads Learning to automate certain tasks via PowerShell or Azure DevOps can take a long time to master. The learning curve is steep, and not all IT pros within a company will be willing or able to learn these skills. Additionally, what happens if one of your most experienced engineers takes on another role, or even worse, leaves the company?

With Nerdio, every deployment or management task in Azure, AVD, and Windows 365 can be done in three clicks or less. We lower the level of technical complexity, and in tandem, technical acumen, needed to see meaningful ROI when implementing Microsoft's virtual desktop technologies across a workforce or organization.

With powerful policy and access management features and RBAC roles, we're also providing a safety net for the future generation of IT to fully grasp the power and value of Azure without getting lost in its complexities.

Nerdio eliminates those risks. With a basic introduction to Azure, engineers will be able to use Nerdio to build, further fine-tune, and cost-optimize virtual desktop deployments at scale, fully automated in most cases. More than 80% of an organization's IT workforce will be able to use Nerdio.

Additionally, Customer Success Packages are available and offer extensive training and advanced, hands-on engineering support. These help companies get the most out of their investment and guide them with industry best practices and standards.

Decrease costs through a VM power management strategy

By far the largest cost component of an Azure Virtual Desktop deployment is virtual machines (VMs), a.k.a. AVD hosts. On average, users will be accessing their desktops and applications around 40-50 hours per week. There is no reason to keep these machines running when they are not actively being used.

Instead, we can use Nerdio Manager's auto-scaling capability to automatically turn VMs on at the beginning of the day (or upon user login) and turn them off once they are no longer needed such as late nights and weekends. If users need to connect outside of standard business hours, they can still do so, and the system will automatically make a desktop available to the user without needing IT admin intervention.

Implementing just this single, simple power management strategy can result in savings as high as 55-60%.

Increase cost efficiency with just-in-time provisioning

When a VM is shut down, the attached storage (OS disk) is still incurring costs. To combat this, Nerdio offers a second form of auto-scale, "burst capacity," or just-in-time (JIT) provisioning.

If we take 12 machines (in a single host pool) as an example and apply this strategy to half of them, six of those VMs will always be there, as a base capacity, being dynamically started and stopped by auto-scale. The other six will be built from scratch when the user load increases and all the base capacity VMs are in use. They will also be completely removed (scaled-in) when the user load drops, or simply whenever dictated by IT. As a result, for these JIT-provisioned machines (six in total), you will not be paying for the attached storage.

As an added benefit of JIT provisioning, VMs are always kept in a pristine state and avoid configuration drift that happens when session hosts are not rebuilt regularly from an image. JIT will delete and re-create the determined number of VMs each day and ensures that all VMs are being rebuilt from the latest image version on a regular basis.

Save on compute costs with Nerdio's RI analytics

"Reserved Instances" (RIs) allows companies to buy compute resources upfront for a period of one to three years. It's an agreement, or contract, signed with Microsoft, and companies can either pay a fixed amount monthly or annually.

RIs can be "given back" to Microsoft with a penalty of 12% on the remainder of the contract. At the time of writing this white paper, there isn't a penalty at all because Microsoft is waiving the charge.

In doing the math, you'll notice that within the first two years, or an even shorter time period, the savings achieved will be higher than the penalty to terminate the contract. Rather than canceling

reservations, companies can also exchange the running agreement for other types of VMs, as long as they are part of the same compute "family."

The risk with RIs is minimal to none. On average, auto-scaling virtual machines saves you more than purchasing RIs. However, with Nerdio Manager's Reserved Instances Analytics, companies can leverage them both to compound maximum savings.

Automatically convert stopped VMs to cheaper OS disks

In one of the previous examples, we already saved on OS disk storage via JIT provisioning. However, VMs that are part of the base host capacity are still unoptimized.

While started, all VMs have a high-performing but expensive premium SSD disk (P10). But when the VMs are stopped, using a premium SSD is wasteful. The price difference between a premium SSD and a standard HDD is significant – with the latter being roughly 75% cheaper.

As part of auto-scale, IT can configure the "running disk type" and the "stopped disk type," and Nerdio will intelligently switch between the two to save storage costs. Therefore, a high-performance premium SSD disk is associated while the machines are running, and a cheap standard HDD disk type is associated when the machines are shut down.

Shrinking OS disks used by your VMs

Azure Marketplace images, the ones managed and maintained by Microsoft, come with a default 128 GB-sized disk. This is an easy and efficient way to get started, but it leaves a lot of unused free space on the C: drive, which incurs costs.

Nerdio Manager can reduce the size of the default 128 GB OS disk to 64 GB and save 50% on OS disk storage.

In multi-session pooled environments, no data is being stored on the C: drive, and all user data is redirected to the FSLogix file share, leveraging their profile container technology. This is also referred to as non-persistent. Also, since VMs are being regularly deleted and re-created from the image, there is no growing disk space consumption on the system drive. You can also layer on just-in-time provisioning and OS disk auto-scale with disk size reduction.

Remove white space from FSLogix profiles

The final Nerdio-specific cost reduction strategy focuses on the remaining largest cost component of AVD – FSLogix storage. FSLogix user profiles are VHD(X) files stored on a file share.

In most cases, FSLogix profile containers are stored on a file share. Often, a premium Azure Files file share will be used for this, and it is a recommended best practice. Azure Files is a robust and flexible service offering solid performance that increases with the size of the share itself. If the file share grows, the performance characteristics, meaning available IOPS, will grow with it.

FSLogix profiles are based on "thin-provisioned" VHD(X) virtual disks. As a side effect, they grow once data is added to the user profile, but they never shrink. Even if contents are deleted from inside of the VHD(X) file, the size of the file remains the same and can only grow. This obviously leads to expensive wasted storage space on Azure Files Premium.

To address this inefficiency and reduce the cost of Azure Files Premium, Nerdio Manager can remove white space from FSLogix profiles.

This process can be scheduled to run on a regular basis (e.g., weekly or monthly) and typically results in a 50% space usage reduction. However, reducing space usage alone is not sufficient since Azure Files Premium costs are determined based on provisioned quota, not actual usage.

Nerdio Manager's storage auto-scaling helps here by automatically adjusting the provisioned quota on Azure Files Premium shares based on available free space and storage latency, which are monitored in real time. If latency increases due to insufficient performance, Nerdio Manager will automatically increase the provisioned quota to increase performance (IOPS) and decrease it when it's no longer needed.

This feature will observe the environment's overall auto-scale behavior for a week or longer and will recommend the number of CPU cores to reserve based on real-world statistics. This means the total number of compute hours is first reduced by auto-scaling and then the cost is further reduced by reservations for those remaining hours.

Manage your organizational risk

Maintaining secure access for employees to their workspaces, applications, and the data that comes with them is critical to ensure business continuity.

Unfortunately, implementing disaster recovery solutions and/or replication mechanisms can be tricky and costly. It requires specific knowledge and know-how, and really isn't "valuable" until a data loss incident occurs—two of the main reasons it is often overlooked or neglected.

By supporting active/active replication and adding in features such as built-in desktop image backups, Nerdio is furthering business availability and making AVD a resilient choice for digital workforces everywhere.

Key features include:

- **Active/Active Host Pool Disaster Recovery:** When enabled, Nerdio Manager will automatically distribute session-host VMs across two Azure regions. Users will be distributed across VMs in both regions as they log in, and FSLogix profiles will be automatically replicated. In case of an Azure region failure, users will continue accessing VMs in the available region, ensuring continuity of data and operations.

- **Desktop Image Backup and Geographic Replication:** Nerdio Manager's built-in desktop image backup functionality allows users to back up images automatically. Users can geo-replicate desktop images through Nerdio's integration with Azure Compute Gallery to keep desktop images in sync across multiple Azure regions.

- **Support for FSLogix Cloud Cache:** Nerdio Manager automatically enables and configures FSLogix Cloud Cache on disaster recovery-enabled host pools. Users' profiles are asynchronously replicated across multiple storage locations, making them available during regional outages.
- **Auto-Healing Capabilities:** Session-host VMs are responsible for the delivery of users' desktops and apps and must be available for users to be able to connect. Nerdio Manager's auto-healing functionality automatically detects and repairs broken session hosts.

In conclusion

Getting Azure Virtual Desktop up and running while keeping costs under control can be challenging. Day-to-day management consists of many repetitive manual tasks prone to human error. Nerdio helps to keep costs at a minimum, automates everything possible, and makes sure everyone within an organization is able to work with, build, optimize, and fine-tune AVD daily—without the steep learning curve.

Nerdio has added, and will continue to add, hundreds of additional features and functionalities not available via the native AVD platform. Nerdio Manager is born in the cloud and sits directly on top of the service, making it an extremely fast, flexible, robust, and efficient management platform.

About Nerdio

Nerdio is a leading provider of powerful, simplified cloud management solutions for businesses of all sizes. Trusted by managed service providers (MSPs) and enterprise IT departments alike, Nerdio equips organizations with seamless, cost-effective management tools for Azure Virtual Desktop (AVD), Windows 365, and comprehensive Modern Work solutions.

With thousands of customers worldwide, Nerdio accelerates cloud adoption, enabling companies to thrive in an era of hybrid work by providing modern, future-proof technology that adapts to evolving workplace needs.

For more information, please visit **www.getnerdio.com**.

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