5 ways to avoid cloud waste

A big reason why we all use clouds these days is to save money from running our own server rooms and data centers. But, if you don't use clouds correctly, you can still lose money. Here's how to avoid those costly mistakes.

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Today, everyone uses the cloud. According to Flexera's State of the Cloud 2020 Report , 98% of businesses are using at least one public or private cloud. The other 2% are fibbing or still running Windows XP. The No. 1 reason to move to the cloud is to save cash .

But, simply moving your IT infrastructure from a “build-your-own data center” capital expenses (CapEx) model to the public cloud's operational expenses (OpEx) model doesn't magically save you money.

As David Smith, a Gartner Distinguished VP Analyst puts it, “The prevalent myth about the cloud is that it always saves money . This is sometimes the case, but don't assume you will save money unless you have done the hard work of honestly analyzing your situation."

It appears most companies don't do that analysis. A study by Coalfire , a cybersecurity company found that while most “organizations expect to save money with cloud migration… in reality just 36% of survey respondents reported cost savings .” Why? Coalfire blames a lack of planning. “Fewer than 50% of respondents conduct a cloud readiness assessment during the planning stage. This creates large blind spots that increase the risk that cloud deployments will fall short.”

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Despite this, Gartner predicts that cloud services spending will grow 17% in 2020 to reach $266.4 billion. And, that was before the Coronavirus pandemic increased cloud spending . At the same time, though, Jay Chapel, CEO of ParkMyCloud estimates that “ $17.6 billion in cloud spend will be completely wasted this year."

That's serious money. And, with IT budgets getting bloody from virus-related cuts, even the biggest companies can't afford that kind of waste. Here's how to avoid this misery and save money from day one.

1. Don't confuse a cloud with a data center

A major problem when companies start their cloud buildout is that they still think and plan about the public or hybrid cloud as if it were a data center. It's not.

Yes, of course, a private cloud is built on your own hardware. But, generally speaking, when you're planning a cloud, you should step away from your old way regarding IT infrastructure.

As Jonathon Wright, co-founder of The QA Lead , a quality assurance site, points out, “One of the big mistakes companies make when they migrate over to the cloud is they keep provisioning like they're still running bare metal. After decades of making sure you had more than you needed in case of usage spikes, making the cloud switch can take some adjusting. Sometimes, the overprovisioning mindset sticks around and you end up paying for a lot of resources you don't use."

Scott Evers, cloud management company Involta 's enterprise cloud architect, agrees. “If you approach cloud management with the same standards and controls as on-premises architecture and deploy to off-premises, you risk incurring additional third-party licenses and software expenses. on top of the compute expenses. It's essential during the design phase to understand your key objectives. Doing so will allow you to leverage native properties and cloud infrastructure appropriately to mitigate these licensing and software costs."

More specifically, Jim Plourde, SVP Cloud Services of Infor, a vertical Software-as-as-Service (SaaS) company, suggests that “When a business looks at cost per server or running servers in one place vs. another, they have a tough time getting their heads around the cloud. Instead, they should look at getting rid of the server altogether and only pay for the functionality that will drive business value. If a business simply moves its on-premises servers to the cloud in an Infrastructure- as-a-Service (IaaS) or single-tenant fashion, they are only swapping gear from one vendor for another.

In short, to save money, first, you must understand the differences between the cloud and traditional IT infrastructure before deploying. And, armed with that knowledge, you need to work out what you really need from the cloud rather than just “lift and shift ”Your servers and applications.

As Evers pointed out, “Approaching cloud application management with an on-premises philosophy will certainly not reduce expenses – and could be leaving additional savings on the table. This is common when organizations initiate rapid cloud application deployments, often via

a 'lift and shift' approach. While a legitimate strategy when replacing hardware or migrating data centers, evaluating the move to ensure you're optimizing cost is essential."

Finally, if you are going the private cloud route, Darren Fedorowicz, Dell 's VP of financial services global channel sales, would like to remind you that, “It's important to have flexible payment options for cloud, especially during times of crisis, so IT systems can stay agile and competitive while preserving cash for the future. When organizations are moving to the cloud, they should consider deploying the technology with a consumption-based model so they only pay for what they use.” Therefore, with the business environment changing so rapidly, “financing cloud infrastructure equipment vs. buying outright is a great way to bring the total cost of ownership down, especially if you're able to get a short-term, low-interest payment solution.”

2. Reserved instances

One of the cloud's great advantages is that you can spin up or down your resources as you need them. Everyone wants to order your newest doohickey? No problem, more compute springs up to take care of the demand. No one's shopping at your site today? Disappointing, but at least your surplus to requirements virtual machines (VMs) wind down so you're not paying for them. But, for your day-in, day-out steady workload, you can save serious coin by using reserved instances.

These are the anti-cloud, cloud VMs. With Amazon Web Services (AWS) Reserved Instances , Azure Reserved VM Instances , or Google Cloud Committed Use Discounts , you pay upfront at a large discount for 1 to 3-year VMs contacts. These prepaid VMs are always available regardless of whether you're using them or not.

Cloud vendors provide tools to work out how money reserved images can save you. There are also tools such as VMware 's CloudHealth , which give you a third-party view of what your savings might be.

Lech Sandeki, product manager for public cloud at Canonical , the company behind Ubuntu Linux , believes the proper use of reserved images can be a real cost saver. Yes, the cloud's flexibility is “incredibly valuable for any quick deployments or scale-up scenarios. On the other

hand, flexibility has an extra cost that in some cases can be avoided. Enterprises who can estimate their needs (eg over a year) can achieve significant savings by committing to resources and planning their usage wisely."

Adam Mansfield, commercial advisory practice leader for UpperEdge , an IT consulting company added, “To ensure they're not spending more than they should, companies should spend an ample amount of time gathering immediate and near-future forecasted demand (e.g,, demand for the next 3 years). It is critical that organizations are driving the process with their cloud vendors to obtain the correct set of products and features."

The questions you must answer first though are how much risk are you willing to take and how you expect your cloud to grow. Should 80% of your resources be reserved? 20%? It's all a matter of how much flexibility do you think you'll need and the risk you're willing to take. If you're certain you know on average how many resources you'll need not just now but three years from now, go ahead and reserve VMs for 70% of your expected workload until 2023. Think your company's cloud needs are going to be growing rapidly? Then, lock down a mere 10% of your instances with reserved deals.

3. Idle resources and autoparking

Almost all cloud users share one problem: Idle resources. These are VMs sitting around spinning their wheels not getting a lick of work done. Usually, these are non-production instances left behind by no longer needed development, staging, testing, or quality assurance jobs.

By ParkMyCloud's count, we'll waste $11 billion on idle cloud resources in 2020. How much is your business losing? ParkMyCloud's customers found about “44% of their compute spend is on non-production resources. Most non-production resources are only used during a 40-hour workweek, and do not need to run 24/7. That means that for the other 128 hours of the week (76%), the resources sit idle."

What can you do about this? Well, clearly you can remind your IT team to clean up their cloud workspace before leaving for the weekend. But that's not enough.

Richard Treadway, product marketing manager at NetApp Cloud Data Services, recommends using a “good monitoring tool that will help identify wasted compute instances (EC2 instances) and block storage (EBS storage) capacity in AWS. With these insights, you can quickly identify the biggest opportunities for reclaiming wasted resources and take action."

Another, more proactive approach is to use tools that automatically “autopark” idle instances. Programs such as AWS Instance Scheduler , Azure Automation , Google Cloud Scheduler and ParkMyCloud can help you identify idle resources and put them to sleep before they run up your bills.

4. Overprovisioned resources

Another all too popular way to waste resources is to over-provision your infrastructure. It's all too tempting to pay for resources you may never use just to make sure the resources you need are there when you need them. This is a hangover from the days when we bought all our own gear and we wanted to make sure we would be caught short by unexpected demand.

Chapel estimates that “ 40% of instances are sized at least one size larger than needed f or their workloads. Just by reducing an instance by one size, the cost is reduced by 50%. Downsizing by two sizes saves 75%.”

Treadway also sees this problem a lot. “As applications move to the cloud for speed and agility many are overprovisioned to prevent performance problems. It's easy to expand resources especially with ' infrastructure as code ' but hard to know where to optimize and the right size to match actual performance needs."

This sounds like a simple problem to solve. We wish. Stefana Muller, a senior product manager at 2nd Watch , a high-end AWS and Azure managed service provider, wrote, “It seems like a no-brainer to just'enable right- sizing' immediately when you start using a cloud environment. However, without the ability to analyze resource consumption or enable chargebacks, right-sizing becomes a meaningless concept. Performance and capacity requirements for cloud applications often change over time, and this inevitably results in underused and idle resources."

Muller recommends you start by using the cloud providers' best practices in right-sizing . But she warns, cloud providers “spend more time explaining the right-sizing options that exist prior to a cloud migration . This is unfortunate as right-sizing is an Ongoing activity that requires implementing policies and guardrails to reduce overprovisioning, tagging resources to enable department level chargebacks, and properly monitoring CPU, memory, and I/O, in order to be truly effective."

So how do you do right size and avoid the overprovisioning price-tag? You start by monitoring your cloud use, analyzing the data, and then testing various sizes of instances to find the perfect fit. Cloud resource management tools such as Densify , SolarWinds Virtualization Manager and Veeam ONE , can be a big help.

Evers suggests that you should move beyond monitoring and image tuning to cleaning up your software for the cloud. "Refactoring applications to take advantage of cloud-native capabilities will reduce cost. A common misconception in the industry is that it's only possible to refactor applications you 've written yourself. Most applications and software vendors will allow automated deployments and integration with standards-based Platform-as-a-Service (PaaS) offerings. For applications custom written by an organization, the most sure-proof way to conserve resources is to adopt serverless architectures. Rather than pay monthly expenses for a physical or virtual server, options exist to pay for actual consumption. This design approach can significantly reduce cost, especially when incorporating labor and hardware costs into the comparison."

5. Getting governance right

Who's in charge of your cloud? It's not an easy question, in fact it's usually complicated. As Jeff Valentine, CTO at CloudCheckr , a cloud management company, explained, “Every public cloud measures its resources in a different way, so it's common for users to have difficulty tracking their cloud budget each month, which can lead to overspending or underutilizing. Cloud governance can be daunting to many large enterprises that have to consider utilization and cost management as well as overall security and compliance, but the key here is visibility. Visibility into all applications and workloads in each public cloud, and insights into cost and cloud spend,

will allow users to gain control over their environment and prevent things from spiraling to the point of no return."

We're not doing well at this. Valentine continued, “Because most companies had to increase their cloud usage to enable remote staff during the pandemic, almost everyone is wasting a lot of money and doesn't know it. In our recent study, only 30% of companies think they do a good job managing cloud usage and costs."

So, how do you take care of this? Evers thinks there's no technical fix. “While there are tools available with all cloud providers, identifying the right roles and responsibilities within an organization are essential. Asset, financial and vendor management must partner together and collaborate with architects and engineers and be prepared to take action when cost spikes occur."

This isn't easy, Evers continued, “The challenge for IT organizations is exacerbated because natural gating processes such as capital spend controls, and physical access to a data center are no longer a barrier to shadow IT. Any employee with a corporate card can now procure a virtual data center of limitless size. Whether an organization is formally contemplating a move to cloud or not, an effective governance model is essential to rapidly identify and rectify occurrences of this shadow IT before financial, operational, and security risks are realized. "

Angela “AJ” Wasserman, insurance power Liberty Mutual 's product manager of cloud financial operations, said that while management comes down to people and not technology nevertheless, “Cost transparency and clean financial data are required so that you have visibility into spending and cost savings opportunities. The public cloud providers supply massive amounts of valuable billing data. It is important for organizations to establish a strategy to enhance this data with other metadata, including tags, in order to effectively and efficiently use this information." Only once your executive team has a firm grip on resources and their cost can your company efficiently govern and manage its cloud costs.

Concluding cloud costs

Managing cloud costs is not easy. There are technical issues, which must be dealt with by developers. System administrative matters, which require expert DevOps management. And, top-level management must take charge of the entire affair and not assume that it's all IT . It's not.

Like IT itself in 2020, the cloud touches every aspect of an enterprise. Only by getting everyone on board to do right by the cloud, can you expect to realize the dream of actually cutting IT costs.

But, this isn't a pipe-dream. You can save money with the cloud. You just have to manage it right. With these tips, you can start turning the dream into reality.