



3 Challenges of Moving to a Cloud-Based Infrastructure

These are the top challenges of moving to the cloud that you should watch out for.

Moving applications and services to the cloud means you'll be offloading some daily tasks and maintenance, and ideally saving time, space and money. Software as a service (SaaS) applications promise flexibility, ease of use and freedom for IT teams, who no longer have to worry about managing or upgrading applications.

SaaS, cloud-based applications have firmly established themselves in modern businesses, as they've matured and can meet enterprise needs. Running applications and services using the cloud has become a viable strategy, as traditional IT infrastructure expands to include the idea of off-site systems and workloads.

When planning a move to a cloud-based infrastructure, or a hybrid cloud infrastructure, you may not actually be packing boxes and folding up unused cables, but you should be getting ready for a change. Using any kind of hybrid cloud model—some apps and services in-house and some handled by a cloud provider—means you're adding another layer to the overall infrastructure. Ideally, that cloud move should simplify your environment and take tasks off the to-do list. But remember that those SaaS or hybrid cloud apps still belong to your organization and are still part of IT. When there's downtime or slowdowns, users will still be coming to IT's door to get help.



You'll learn your way around a new cloud environment, but it'll require a good plan. Applications are constantly changing and growing with use. A company's app landscape shifts over time, especially when lots of those apps are in the cloud and subject to the cloud provider's whims. Though apps and services will be off-site and out of sight, they're still a crucial part of the IT infrastructure. It's important to have insight into the overall application topology and interconnections between apps and services.

These are the top challenges of moving to the cloud that you should watch out for:

1. The cloud is complex.

The proposition of cloud sounds simple: Send your stuff there, and don't worry about it again. But under the covers of the cloud are the resources, services and connections that exist in any other data center. Web applications are made up of many components that communicate and share resources, and those interconnections change constantly. A web application has a lot behind it—it might be relying on Infrastructure as a Service (IaaS), APIs and microservices just to perform its functions. Tracking down the cause of an issue with a cloud app can pretty easily lead to a dead end, or a rat's nest of possible problems.

Any issues that come up with web app performance have the same few causes, whether the app is in the cloud or on-site. When an app slows down, the cause could be the code, the infrastructure or the network. But when the app is cloud-based, it's that much harder to pinpoint the root cause, since all those details are hidden. And cloud provider performance changes constantly, so it's a moving target. Be proactive with performance monitoring in the cloud to delve into cloud networks and provide alerts.

2. Data centers and clouds need a good connection.

When apps and services are located outside the data center, the network connection to those apps and services becomes super-important. Research firm EMA found that the number one networking challenge for hybrid cloud users is the complexity of provisioning interconnections between public and private cloud environments—public cloud as services provided by a third party, and private cloud as compute resources hosted in-house.. (Network visibility and troubleshooting, and latency between in-house and outside cloud resources came up as the next two common challenges, respectively.) A hybrid cloud environment includes the data center network, cloud network, and often a WAN or VPN as well—and they're all essential to a successful hybrid cloud environment. Networks within cloud providers are extremely complex and congested, adding to the complication.

So if you're working on a move toward hybrid cloud, make sure your network is up to the task, and see what you might need to change if it's not. And check that you'll have visibility into these networks. Evaluate performance management tools, whether it's finding a product or making sure the current one is ready. Otherwise, you'll be in the dark when the network slows down or goes out.



3. The cloud still requires monitoring.

Moving apps off-premises can certainly save time on data center upkeep. But if you've got recurring or unsolved software issues on-premises, or gaps in monitoring, they're likely going to follow you into a hybrid cloud environment. You need to make a lot of important choices up-front when moving apps to the cloud, for issues like security, resilience, hypervisor choice, stability and network configuration and optimization. These often will be part of service-level agreements (SLAs) with providers, but you can also retain control over choices and configurations by monitoring app performance after apps are running in the cloud. Real-time monitoring with cloud visibility can be the one big-picture tool you need to run a hybrid cloud successfully. Cloud monitoring has to be continuous, since many other users and apps are sharing the same network capacity as yours. Make sure there is enough reliable capacity for applications to move from your users to the cloud provider.

For a move to the cloud, you'll have to make the plan that works best for you, updating it as needed when challenges arise. As with any move, though, planning ahead and researching the area should help get you and your apps settled in a new environment.



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