

End-User Computing (EUC) & Desktop as a Service (DaaS)

Meet your workforce where they are.

To compete in today’s business climate, companies must strike the right balance between the flexibility to work remotely that employees now demand and the organizational imperative to manage and safeguard complex, decentralized systems.

Data security and compliance are not negotiable.

But companies still struggle to do it properly while empowering staff to work how they want. To achieve both goals at the same time, organizations are moving toward an always-connected workplace where employees can access their work anywhere, on any device. Companies undergoing a digital transformation, adopting BYOD or CYOD policies, or implementing end-user computing (EUC) are in the ideal position to deploy a Desktop-as-a-Service (DaaS) solution.





Understanding DaaS

As recently as a few years ago, business computers were just a tool. Their role was to help office staff perform paper-based tasks more easily and efficiently. Today, a company's ability to leverage technology is a critical element of success or failure. Enter end-user computing (EUC) and Desktop-as-a-Service (DaaS), which have in recent years disrupted how businesses work.

DaaS is a cloud computing service that allows users to access a cloud-based virtual desktop anywhere, on any device. A DaaS platform provides a fully functioning, hosted desktop for applications that users generally run on a typical desktop.

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Challenges of Traditional Desktop Delivery

In traditional desktop computing, each person in an organization accesses business software from their individual computer. This model may have worked for many years, but it hasn't been without problems.

Some of the top obstacles when using traditional desktop delivery are:

- Cost of buying the software package and/or licenses for each desktop that requires access.
- Managing product updates across multiple desktops.
- Ensuring the security of stand-alone applications.
- Avoiding the risk of breaches and hacking of compromised desktops.
- Collaboration difficulties resulting from many versions of the same document existing on individual machines.

End-user computing (EUC) encompasses a broad range of user-facing resources. These include traditional desktops, laptops, or notebooks, smartphones, tablets, wearables, and other mobile devices, as well as cloud, web, and mobile applications.

As these resources become increasingly cloud-based, companies are finding themselves with EUC tech stacks.



The End-User Computing Tech Stack

A tech stack combines programs, frameworks, and technology tools employees use to perform their tasks.

A modern EUC stack can include:

- Virtual desktop infrastructure (VDI), which is a method of using virtual machines to provide and manage virtual desktops. A VDI hosts desktop environments on a centralized server and gives end users access to them on demand using a computer device such as a laptop, tablet, or mobile device.
- Desktop-as-a-Service (DaaS), a fully outsourced solution that provides virtual desktops to businesses. This differs from VDI solutions that are usually operated and maintained by in-house IT staff.
- Specialized software programs running on a cloud platform instead of downloaded to individual computers (or even company servers). These programs typically run on top of the standard DaaS software, in the same way that Microsoft Office runs on Windows.

DaaS is a hosted option managed by a third-party vendor. In some instances, the vendor might also handle maintenance, backup, updates, and data storage.

The components of an EUC STACK include a client-side interface and a server-side or backend of the program.

7 Benefits of Implementing DaaS

DaaS accelerates the delivery of virtual applications and desktops to users by leveraging public or hosted private cloud infrastructure in single or multiple cloud regions. Here are the top seven benefits of implementing DaaS.

01 Access

Users can access applications, cloud-based office software, file sharing, and corporate resources, any time, anywhere.

02 Hybrid Deployment

The use of DaaS supports hybrid cloud deployments through virtual applications and desktops that run on-premises or in public or hosted private clouds.

03 Scalability

The scalability of DaaS allows companies to commission and decommission access based on the volume of users, which addresses the needs of consultants, seasonal, and contract workers. By providing temporary workspaces in the cloud, the organization's network, data, and IP remain secure. Adding new users with DaaS is simple and can be up and running faster than in an in-house infrastructure.

04 Financial Advantages

DaaS delivers a financial advantage because you only pay for the resources that you use. This scenario reduces your capital expenditure (CapEx) and transfers the cost to operational expenses (OpEx). Implementing DaaS often also enables companies to switch to a pay-as-you-go model.

05 Freeing Up Staff

The outsourcing of desktop management and maintenance eliminates the need to host and manage a VDI. Implementing DaaS reduces the burden on your IT staff and sets them free to focus on other tasks.

06 Security Improvement

DaaS ensures the integrity of company data and reduces security issues resulting from employees losing laptops or mobile devices. Hosting all sensitive data in the cloud lowers the risk of compromise and creates a more secure setting for remote work and BYOD.

07 Operational Savings

Choosing a DaaS instead of a VDI environment eliminates the need for a fully-equipped data center. This factor helps reduce the cost of operations, particularly for companies struggling with capacity constraints.



How to Be Successful with Desktop-as-a-Service

Determining your objectives is an essential first step in any project, and implementing DaaS is no exception. There are other key considerations, however, which are important for ensuring a successful transition.

Determine the Use Cases

A use case is the purpose for which a company needs a solution, product, or methodology. It outlines the reasons for implementing the solution, the desired outcomes, and the functions necessary to achieve them. The use case typically includes the possible sequence of interactions between systems and users in a particular environment and is related to a specific goal.

The most common use cases for outsourcing a desktop environment are:

- Improving your data security and compliance. This is critical in the current high-risk cybersecurity landscape.
- Ensuring business continuity regardless of the circumstances. Companies with cloud-hosted operations were ahead of the pack when the COVID-19 pandemic hit.
- Reducing costs, particularly capital outlay. Not only is computer hardware subject to price fluctuations, but high demand and shortages during COVID highlight the volatility of the international market.
- Other use cases include the periodic need to use graphic-intensive applications, supporting BYOD and remote working, and reducing the company’s impact on climate change.

Identify the Location of Apps and Data

Choosing a DaaS service and effectively implementing it depends on how compatible the service is with your apps and data. Identify the location of your assets before selecting a product, to ensure the success of the project.

Questions to ask include:

- Where are the apps located that your employees use most often?
- Will users need to access cloud data services such as Dropbox or Google Drive?
- Does the company currently use a proprietary data center, and if so, will it be possible to integrate it fully with your chosen service?

For data stored in a public cloud, for example, selecting a desktop solution that runs close to the data location may be necessary.



Neutralize Network Latency

Speed of operation is critical in most industries, and if the DaaS solution you choose slows down the way your company operates, it won't be doing you any favors. Networking latency refers to the time it takes for data to travel between two points.

In a DaaS service, a distance exists between the user's screen and the application. Even though data travels at the speed of light, interstate and transcontinental distances can impact performance. Shorter distances, such as cross-city or cross-building, usually have minimal effect, however, factor in the distance your apps and data will travel when you evaluate potential DaaS vendors.

When users' desktops are hosted in a different data center from the data, it can lead to higher network latency, delayed logins, and slower applications because operations must wait longer for data transfers. Some applications contain features that reduce these effects when combined with DaaS, but many popular programs produce frustrating latency issues.

To get the best performance from DaaS, servers should be located relatively near the cloud data center hosting the desktops.



Support Robust Security

Last but not least, security is a primary consideration in any successful DaaS implementation. As with most services, most security risks result from errors on either the user's or the provider's part. Here are some of the potential dangers and how to combat them for a successful DaaS implementation.

- Authentication: A reputable DaaS provider will offer (and insist you use) multi-factor authentication. Without enabling this feature, an attacker who intercepts login credentials gains access to the entire virtual desktop.
- Patching: The service must be regularly patched and operate under the protection of a dedicated cyber-security team.
- Device Protection: All devices accessing the network need to be protected to ensure both system vectors are secure against hacking, malware, and social engineering practices. If one user is affected, the entire operating system can be compromised and expose all users' data, apps, and credentials.
- Secure Network: One of the easiest ways for hackers to intercept valuable information is via an unsecured network or by finding a flaw in the protocol connecting users to the virtual desktop. Make sure the DaaS vendor you use employs top network security.



Top 5 DaaS Mistakes to Avoid

Many companies implement a DaaS outsourcing project without fully understanding the implications of the action. Unless you're aware of the potential for error, it's possible to make some common mistakes.

1. Sizing & Optimizing Workload VMs Incorrectly

As we mentioned in the section on Network Latency, performance and speed are critical factors in the success of DaaS. Neither of those are achievable without careful sizing and optimization of your workload virtual machines (VMs), mainly when you're dealing with multi-user/session environments.

Simply depending on sizing guidelines without the use case context can lead you astray and result in under- or over-loaded VMs. It's important to understand precisely what your users need to be able to do to determine whether you're accurately loading the machines or not.

How to avoid this:

- Don't accept vendor scalability and sizing numbers at face value. Instead, begin with a small group of pilot users and calculate sizing requirements based on actual production usage. Use endpoint analysis and monitor the user experience to determine the correct baseline.
- Review your VM sizing continuously to account for changes in the environment, such as user population, upgrades, patches, and amendments to use case requirements. Remember, it's not just about reducing costs but about achieving value.

2. Selecting the Wrong Single- or Multi-User Model

A single-user workload means one dedicated VM per user session, while in a multi-user model, a VM hosts more than one user session simultaneously.

It's risky to apply traditional thinking about which option is better without verifying what works in your specific environment. For example, a simple multi-user model with a predictable level of resource usage is usually cost-effective when hosted on the premises.

However, when a similar scenario is hosted on workload VMs in a public cloud, several key considerations come into play. When a higher-than-usual number of users demand access, you'll need to be able to reduce inactive users to accommodate them all. During non-peak times, a single-user model might result in cost savings, but only if it's sized correctly for both maximum and minimum usage times.

How to avoid this:

- During the selection of a workload model, take note of all the possible scenarios that could arise for your particular use case.
- Calculate the minimum number of VMs you'll need to have powered up at any specific time and look for a VM type that optimizes both user density and hourly computing costs.
- Evaluate the benefits and disadvantages of each model for your requirements while making sure you're leveraging GPU profiles fully.



3. Choosing an Unsuitable Data Locality

Your data locality is the physical location that hosts your users' profiles, application databases, file servers, and services. Ideally, this needs to be a reasonably short distance from where the users run the applications and access the data to reduce the risk of latency. You also need to have a strong enough network connection to provide support at both ends of the transfer and ensure that the locality you select can support the storage requirements of the applications you use.

These could include:

- Microsoft Dynamics 365
- Large ERP systems such as SAP HANA, Oracle and EBS
- Engineering and design applications
- Electronic medical records (EMR) applications
- IoT and mobile applications

Don't assume your data locality is more important than user locality. Focusing on data locality in relation to the workload VMs accessing the data could lengthen the distance between the end user and the workload VM. This can result in a poor end-user experience.

How to avoid this:

- First, determine the best platform to use for your application, and then focus on ways to integrate it with DaaS.
- Don't try to support a global workforce from a single region, and choose a locality that works with all aspects of your environment.
- Keep your application data as close as possible to the users' access points and strive to balance data and user locality.



4. Picking the Wrong Platform: Public Cloud vs. On-Premises

Deciding where to host your DaaS solution also impacts the efficiency and success of your project. On-premises hosting typically offers more robust security and better peace of mind, but usually entails buying a license or copy of the software to use it. This factor is compounded by the other costs associated with managing the solution, such as in-house server software, integration capabilities, and IT employees. All this can run a lot higher than hosting with an external cloud-computing platform.

In a public or hosted private cloud environment, however, a third-party vendor takes responsibility for all these functions. There are no capital expenses, and customers pay only for the resources they need. The option to scale up or down is an added benefit of external hosting, along with the ability to increase resources almost instantly because everything is already fully configured. No time is necessary for installation, and users can access new applications immediately.

Picking the wrong platform for your company's DaaS solution can have far-reaching results, especially in the area of financial cost.

How to avoid this:

- Get expert advice on which hosting option is best for your company's requirements because there are pros and cons to each type of platform. Often, an on-premise solution can be combined with cloud computing for a hybrid model.
- Consider a public or hosted private cloud, or go the whole nine yards with a Microsoft Azure hyper-scale public cloud.



5. Overlooking User Experience

Meeting users' expectations is an essential factor in outsourcing DaaS to a provider. Most users want enterprise-class performance combined with the ability to use familiar devices and applications anywhere, any time. EUC opens up the possibilities of doing this, but it requires overcoming particular challenges to meet their preferences.

Some of these include:

- Using independent, often privately-owned devices (BYOD). Many people consider their devices an extension of themselves and don't want to be forced to use another device.
- Freedom of location. Users these days expect to be able to access data from home, from restaurants and airports, and even from the beach, when they need to perform a task in a hurry.
- Self-service is increasingly important, because few users are prepared to wait for a support technician to visit them and resolve a problem.
- Seamless operation and handoff. Users want to be able to continue working where they left off, whether it's on their laptop at home or on a smartphone while traveling or attending an event.

End-user computing has changed in recent years and is now driven extensively by user expectations. Workers have grown used to high-performance computing with fast loading speeds, customizable interfaces, and rapid access to data. Overlooking any aspect of the desired user experience can lead to dissatisfaction among your employees and resistance to using your DaaS solution.

How to avoid this:

- Choose a DaaS solution that offers each user their own virtual desktop that can be customized according to their preferences to recreate the familiar experience they are accustomed to.
- Make sure the network connection and bandwidth are robust enough to support running the most demanding workloads on DaaS-enabled devices, regardless of users' location.

Choose US Signal as Your Trusted Provider

Companies face challenges in balancing user expectations with the tough realities of budgets, staff capabilities, security issues, and corporate governance requirements. As a result, more organizations are opting for desktop-as-a-service to provide users with the tools they need to work while managing costs, complexity, and usability.

US Signal delivers ReliaCloud DaaS — a dedicated, managed private cloud desktop platform combining Citrix end-user computing, Nutanix Cloud Platform, and US Signal managed services. With our comprehensive approach, we deliver a completely integrated solution to the end user, not just the desktop.

Contact us today to learn more about moving your organization to a world where you break free from the slow integration and delivery of legacy business-critical applications.

