

# Containers-as-a-Service: important points to know before choosing a solution and a provider

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Use case | ScaleDynamics

An isometric illustration of a data center environment. Several server racks are shown, each topped with a stack of colorful blocks (red, blue, and teal). A person in a white shirt and red pants is climbing a ladder that spans between two of the racks. The background is dark blue, and the foreground features large, curved shapes in dark blue and red.

**ScaleDynamics**

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Full-featured container management solution

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# The emergence of containers

Cloud computing has profoundly changed the way we store data and run applications. It has allowed businesses to use powerful servers and storage systems without having to install them onsite or spend a fortune on maintenance.

However, there was one small problem... Applications developed and deployed on the cloud used to be operating system (OS) dependent. This meant that you couldn't simply move your application from one cloud or service provider to another.

Containers have solved this problem once and for all. As an emerging virtualization solution, containers are gaining tremendous popularity in recent years and are replacing traditional virtual machines (VMs) due to many promising properties such as shared host OS, fast launch time, portability, scalability and rapid deployment.

**According to the Cloud Native Computing Foundation (CNCF) 2020 survey, 92% of respondents report using containers in production, an extraordinary 300% increase from just 23% in their first survey in March 2016. This is furthermore an increase of 73% in 2018 and 84% in 2019**

According to the same report, many challenges accompany containerization. Complexity joined cultural changes within the development team as the top challenges to using and deploying containers, both cited by 41% of respondents. Security (32%) came in third, followed by storage (29%) and lack of training and monitoring (27% each).



# CaaS versus PaaS and IaaS

With the rise of containerized infrastructure now comes CaaS, or "Containers-as-a-service," a cloud service that makes it easy to manage containers. Users use it to build feature-rich, scalable applications securely.

Among cloud services, CaaS is considered a subcategory of IaaS (Infrastructure-as-a-Service). As a reminder, according to Wikipedia, with IaaS, "the cloud provider manages the server hardware, virtualization layers, storage, networks" for the client company.

Platform-as-a-Service (PaaS) is a complete development and deployment environment in the cloud, with resources that allow you to deliver simple to sophisticated enterprise applications.

Like IaaS, PaaS includes infrastructure (servers, storage, and network), but also middleware, development tools, business intelligence (BI) services, database management systems, and more. PaaS is designed to support the entire life cycle of a web application: creation, testing, deployment, management, and maintenance.

CaaS automates the process of allocating computing power resources and deploying containers in the cloud. CaaS differs from the PaaS model in that it is not associated with a specific ecosystem of code blocks and does not depend on the application-level language runtime and databases. CaaS enables an additional level of granularity by allowing you to go further, for example with microservices, and thus allows you to be more agile and fast.

CaaS also responds to the increasing complexity of environments, particularly microservices and containers, which makes the infrastructure difficult to manage.

Flexera's latest State of Cloud report (2022) shows that CaaS and containers are becoming the mainstream, from the current and forecasted usage:

**44%** use a CaaS

**25%** in the process of testing a CaaS

**33%** want to expand their use of containers





# The difficulty of finding the necessary skills

Nowadays, it has become essential in DevOps to understand how cloud computing platforms work, and all the modern computing technologies such as microservices and containers... because until now, there was no other alternative. These new technologies allow us to improve the digital transformation, but also to efficiently manage and develop the company.

This is the main challenge for companies with containerized infrastructure, according to the State of Cloud report (Flexera 2022). In fact, 42% of them have a shortage of skilled personnel.

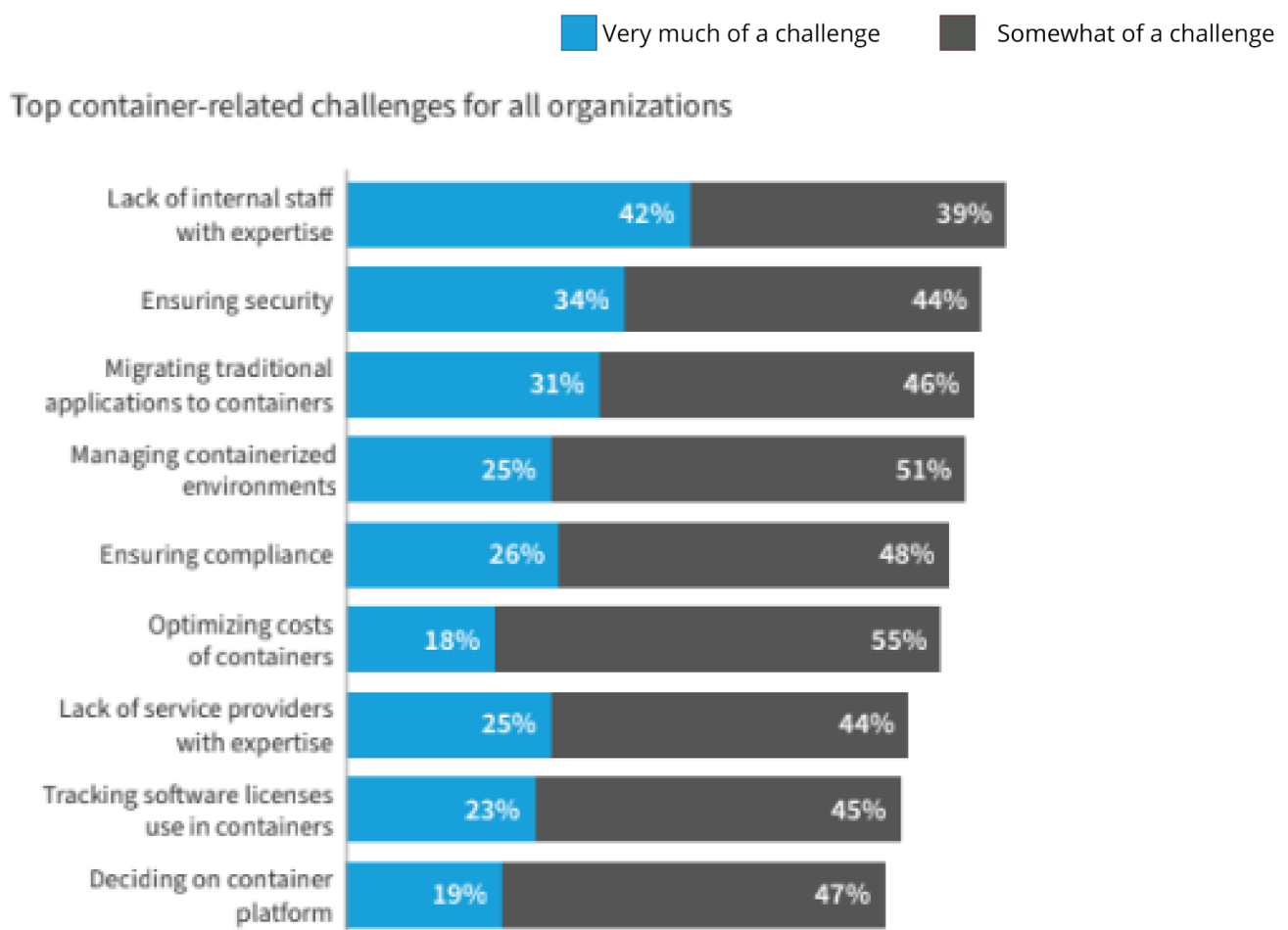


Figure 1: Key container challenges for all organizations, source Flexera



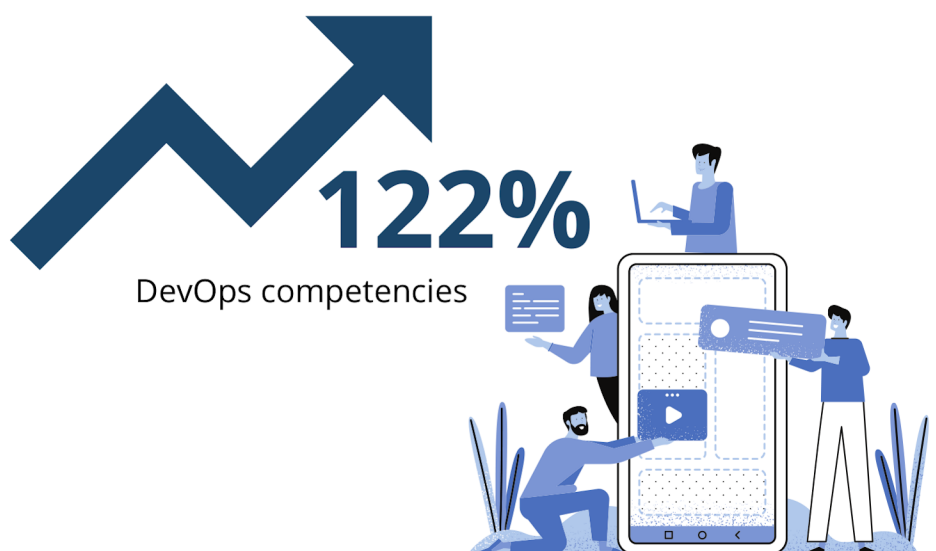
According to the latest "Enterprise DevOps Skills Report 2021" from Upskilling and the DevOps Institute, half of respondents are looking to recruit and train DevOps skills internally first, before turning to external recruitment.

If in-house training is not possible, this means either recruiting or bringing in external skills from digital service companies (DSCs).

Unfortunately, DevOps engineer profiles are very hard to recruit (Tech Hiring Survey, 2022 | CodinGame and CoderPad) and teams face many challenges according to the Upskilling 2021 report:

- 64% have difficulty finding skilled talent
- 57% have difficulty determining what skills they need
- 41% have difficulty attracting talent

Across the IT industry, DevOps is consistently one of the fastest growing and highest value areas of the profession. This demand is spreading rapidly across many roles and industries. In fact, if nothing changes, over the next five years, DevOps skills are expected to grow by 122%, making it one of the fastest growing skills in the entire profession.



Source: "Enterprise DevOps Skills Report 2021" by Upskilling and the DevOps Institute



# CaaS from the perspective of ScaleDynamics – a new generation

CaaS brings all the benefits of containers, but also offers additional cloud-related benefits. CaaS also includes automated performance management and monitoring. DevOps companies and organizations are leveraging CaaS solutions to:


- Accelerate the software development process
- Deploy innovative solutions in the cloud at large scale



**With ScaleDynamics, you have both of these advantages, of course, and we exclusively provide:**

- Compatibility with on-premise, hybrid, multi-vendor, and private clouds
- Business visualization with exclusive metrics
- Zero cloud infrastructure knowledge required
- Hot moves and migrations with no service interruption in a few clicks
- Zero cloud lock-in, ability to switch providers in a few clicks
- Deploy multiple containers on a single cloud instance
- Neutrality on performance, cost and CO2 footprint of cloud providers





Containers are by nature agnostic in terms of cloud provider, but also in terms of OS. They are therefore interesting because of their great portability, but migrating containers to other providers is a heavy and time-consuming operation. To date, apart from ScaleDynamics, no CaaS supports multi-cloud, hybrid cloud, on-premise, and one-click container migration without any downtime.

In fact, the ScaleDynamics CaaS platform allows you to connect any of your resources, whether it's your on-premise, public or private clouds. You can provision cloud resources instantly, from the platform in a few clicks and choose from Equinix, Scaleway, OVH, AWS, Azure and GCP. Deployment with ScaleDynamics is done in one command line, with no configuration required. There are no DevOps or Kubernetes skills required!

The ScaleDynamics console centralizes your cloud resources and allows you to view all the activity of your containerized infrastructure and change it up or down in minutes. You can configure alerts such as:

- low CPU load threshold,
- high CPU load threshold,
- high threshold for the number of requests/hour,
- high latency threshold in seconds,
- etc.

And this is for each microservice or workload you have, so you can act in real time.

ScaleDynamics provides the metrics enterprises need to visualize their entire containerized infrastructure, make decisions based on real encrypted data, and act quickly without the need for cloud expertise. This new ability to act means that cloud resources can be adjusted to what is needed and therefore spent only on what is strictly necessary. This is a significant gain for companies that use the cloud and that have an important development and innovation strategy.

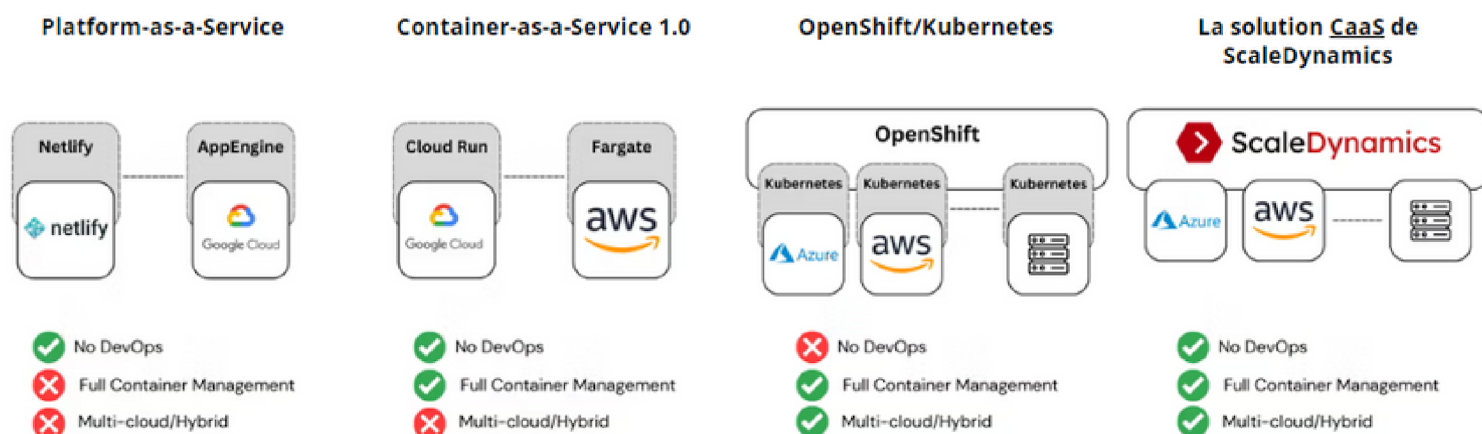


Our platform also provides an hourly and real-time estimate of the CO2g-eq emissions of all the cloud resources we support (Equinix, AWS, GCP, Azure, Scaleway, OVH, on-premise...) allowing you to obtain the necessary measurements for the Carbon Footprint Scope 2.

This allows you to obtain an accurate estimate, and in addition to being based on the characteristics of each resource, provider and region, it is the only estimate that takes into account the real load of your activity on the cloud and the volumes of data exchanged per hour and in real time.

With the ScaleDynamics platform, avoid over-allocation of resources and move to more suitable providers and regions in order to reduce your carbon footprint in a concrete way and carry out your CSR action plans.

Compared to alternative solutions, there are several notable differences between ScaleDynamics and the existing one.



The cloud is changing, applications are moving towards containerization, companies need flexibility and speed, the ScaleDynamics CaaS solution was born with these realizations, for companies that want to remain competitive today and especially in the future...



# Customer testimonials

The team is a real asset to me, as they are always available and willing to help. The major positives were us for: time saving, ease of use, saving money compared to other similar companies, simplification (to solve some complex problems), and the flexibility of their features/tools.

”

**Rachid A.** | CEO | Education, 1-10 employees

“

ScaleDynamics is the best resource provider for software development. It is easy to use and offers robust features like templates, direct deployment from the dashboard, migration service, cloud support.

**Ankit S.** | iOS Developer | Technologies, 51-200 employees

Ease of use, ease of cloud migration, wide choice of cloud products

”

**Benjamin B.** | Data Analyst | Healthcare, 1001-5000 employees

“

This tool simplifies our software development process. With ScaleDynamics, we have total freedom in terms of cloud for our services. The migration process is simple and instantaneous.

**Anonymous Verified Reviewer** | Technologies, 11-50 employees

You can manage all your cloud resources from one place with ease.

”

**Anonymous Verified Reviewer** | Electrical/Electronic Manufacturing, 11-50 employees



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## About us

### The full-featured container management solution

We are changing the way the cloud is managed.

Based in Cesson-Sevigné (35) and 100% Breton, Scaledynamics offers the most advanced Containers-as-a-Service service on the market, with unmatched mobility, built-in automation for optimizing your resources and workloads, and much more.

Our founder, Gilbert Cabillic, built a Java processor for Texas Instruments wireless phones, and accelerated the Java virtual machine for Android.



After 8 years at Google, he founded ScaleDynamics with the goal of offering a new generation of simple, multi-cloud managed container platform with maximum scalability

