



Case Study

Application Delivery

Datalounges

As companies continue to move towards cloud-native approaches to application delivery, incorporating microservice architectures and continuous integration and deployment, containerisation has become a hot topic. Datalounges is using SUSE CaaS Platform both to develop and deploy a set of innovative applications, and to showcase how container orchestration technologies can help its clients accelerate application delivery, increase flexibility, and eliminate downtime.

Overview

Headquartered in Hyvinkää, Finland, Datalounges is an innovative cloud service provider that specializes in offering entire cloud infrastructures to businesses of all sizes. The company uses open-source technologies such as Kubernetes, OpenStack and Ceph to deliver powerful and flexible resources to its customers, giving them the ability to reduce their IT costs, boost service levels and cut time to market.

Unlike many providers, Datalounges does not resell commodity cloud services from the large cloud providers; instead, it has built its own multi-location cloud infrastructure that is located entirely within the European Union (EU). This gives the company the flexibility to create services that are precisely tailored to the unique needs of its clients—as well as providing a strong governance and security model that helps clients comply with GDPR and other regulations.

Florian Rommel, the company's co-founder, explains: "We take pride in understanding our clients' businesses and helping them

find the best solution for their needs. We believe that a happy customer is a good customer—so if a technology isn't right for a client, we won't try and sell it to them. That's why we've been able to build strong and trusted relationships with companies of all sizes across Finland and other EU countries."

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Co-founder
Datalounges

Challenge

Over the past few years, widespread adoption of container technologies such as Docker has fuelled the growth of containerized application and services, and made container orchestration and management a hot topic for IT leaders.



Datalounges at a Glance:

Finnish cloud services provider Datalounges helps clients build cloud-native applications, using SUSE CaaS Platform to deliver a Kubernetes environment that is flexible, available and easy to manage.

■ Industry and Location

Computer Services, Finland

■ Product and Services

SUSE CaaS Platform
SUSE Enterprise Storage
SUSE OpenStack Cloud

■ Results

- + Reduces time-to-market for new container-based services and applications
- + Enables rapid deployment of applications through continuous integration and delivery
- + Increases system availability with zero-downtime upgrades
- + Streamlines day-to-day management of Kubernetes clusters, cutting operational costs

Growing interest in new cloud-native applications is adding to this demand.

Realizing that container technologies could be a viable option for a number of its clients, Datalounges decided to explore the domain by building a container service of its own. The team chose to build on Kubernetes, the industry's leading container platform.

"Containerisation was starting to become a buzzword," says Florian Rommel. "We knew that the first step would be to help our clients see through the hype and understand what technologies like Kubernetes can (and can't) do for their business."

Datalounges spoke with an early adopter of Kubernetes, a company that had built its own large Kubernetes cluster from scratch. This company found that implementing and managing the cluster took too much time and required too many expert resources—so it was looking for a more streamlined approach.

"Our own research reflected this client's experience," says Florian Rommel. "We realised that setting up and managing our own cluster using the low-level Kubernetes API would be time-consuming and labour-intensive. When you are managing hundreds of instances, you don't want to be cobbling things together by hand, and maintaining your own scripts and tools can be a real rabbit-hole. We also wanted our container environment to integrate seamlessly with our existing OpenStack cloud, which would have taken a lot of effort to set up manually."

Solution

Datalounges decided to evaluate higher-value, enterprise-ready containerisation solutions that would provide a platform for managing and integrating Kubernetes clusters more easily. After reviewing solutions from several leading vendors, the company selected SUSE CaaS Platform, SUSE's enterprise-ready, Kubernetes-based container management solution.

"We have a long relationship with SUSE, and many of our cloud services are built on their software," says Florian Rommel. "When we looked at SUSE CaaS Platform, it ticked all the boxes—especially because it's easy to deploy into the cloud. We were able to plug it straight into our existing OpenStack cloud within a couple of weeks."

By contrast, the options from other vendors had various shortcomings. Florian Rommel gives an example: "We looked at Red Hat OpenShift because one of our clients had started using it, but they moved away from it in the end. They couldn't find local support in Finland, so when something went wrong they needed to fly someone in from Sweden. That's far from ideal when you're trying to run business-critical systems."

To make deployment and management simple, SUSE CaaS Platform provides all the elements required to build and operate a container orchestration and management platform. In addition to Kubernetes itself, the platform includes a purpose-built host operating system for the container runtime and container image registries—acting as a complete container execution environment. This core is

augmented by tools that assist with data centre integration, platform management, and end-to-end security.

Datalounges appreciates that the platform has been enterprise-hardened, with comprehensive interoperability testing across all components and support for thousands of platforms, as well as world-class maintenance and technical support. "The support that SUSE provides is excellent," says Florian Rommel. "In particular, we're big fans of their continuous release cycle, which helps us get new features and patches to users quickly."

Finally, the platform is surrounded by a rich ecosystem of resources for container-based application development—from SUSE Linux Enterprise Server container base images to tools and services from SUSE partners and the wider Kubernetes community.

Florian Rommel comments: "From a technical perspective, container architectures are very complex, but SUSE CaaS Platform helps us keep things simple—we can get a Kubernetes cluster up and running in a few minutes. In fact, I recently did a demo at a conference where I set up a four-node Kubernetes cluster in OpenStack, then used that to deploy a WordPress application to production, live on stage."

The combination of SUSE OpenStack Cloud and SUSE CaaS Platform enables Datalounges to offer clients a range of deployment options to suit different types of applications.

“The important point is that while Kubernetes is an exciting technology, it’s not the answer to every challenge,” says Florian Rommel. “If you’re building a new application and you want to do continuous integration and deployment, it’s perfect. If you’re dealing with legacy systems and databases, a more traditional cloud platform with dedicated instances might be a better option. Our integrated infrastructure with SUSE CaaS Platform and OpenStack Cloud ensures that we can always give clients the right platform to solve their problems.”

Running the container platform on top of SUSE OpenStack Cloud also means that managed containers can be easily connected to Datalounges’ underlying storage layer, which uses SUSE Enterprise Storage based on Ceph.

“You can provision SUSE Enterprise Storage through SUSE OpenStack Cloud into SUSE CaaS Platform, and it’s ridiculously fast,” says Florian Rommel.

Managing the new SUSE CaaS Platform cluster has generally been plain sailing for Datalounges’ experienced infrastructure team.

“We did have one gotcha early on, updating SUSE MicroOS,” says Florian Rommel. “MicroOS is the container OS that’s built into SUSE CaaS Platform – it is based on SUSE Linux Enterprise Server, but it uses a different, “rolling release” model that enables SUSE CaaS Platform to update itself more frequently and seamlessly. But SUSE’s documentation is pretty good, and we soon figured it out.

“Other than that, SUSE CaaS Platform is a dream to operate and maintain. We can move our entire Kubernetes cluster between nodes seamlessly with zero downtime, so our clients’ applications are available 24/7.

“The load-balancing is really neat too—we’ve enabled it by default for all our clients. With just one command you can load-balance your entire application, and all the configuration with the cloud provider is handled automatically.”

Results

Since moving the SUSE CaaS Platform environment into production, Datalounges has taken containerization to the next level and developed two new cloud-native applications that both provide useful services for its clients and serve as a showcase for the benefits of a modern application delivery approach.

The first is what Florian Rommel describes as “information display on steroids”—a solution that manages screens in factories and other workplaces, and cycles through dynamic real-time dashboards to give workers a quick overview of anything from the status of a production-line machine to trending topics on social media, or even today’s lunch.

“Traditionally, these types of displays use static data,” says Florian Rommel. “When you want to change the display, you have to upload a new image or set of data manually. By contrast, our app is a perfect example of serving real-time information and using a continuous integration and deployment pipeline.”

For example, if a client wants to change the way the data is displayed, they can simply push an updated version of the application to SUSE CaaS Platform, and the Kubernetes cluster will automatically spin up new instances, direct all new requests to them, and gracefully retire the old instances. The result is a completely seamless upgrade experience, with no disruption for end users. Even more important: this easy upgrade path means that Datalounges can provide new features more frequently, enabling the company to respond more quickly to customer needs and new business opportunities.

Datalounges’ second cloud-native application, which is due to be launched in the next few weeks, is a multicloud management portal that the company intends to sell both directly to its own clients, and as a white-label product to other managed services providers. It allows companies to set and enforce policies on which cloud providers their IT teams can choose and helps them provision and manage multiple cloud environments from a single point of control.

“It’s another good example of a use case for SUSE CaaS Platform,” explains Florian Rommel. “Companies need to know that the tools they use to manage their cloud environments will be available 24/7. Container orchestration with Kubernetes makes it easier to achieve strong guarantees about the availability of our multicloud management portal.”

Datalounges has also built an enhanced set of monitoring tools for SUSE CaaS Platform, which it uses internally, offers as an add-on service to its clients, and may eventually

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release as a full product. Built on the ELK stack (Elasticsearch, Logstash and Kibana), it provides centralised logging and analysis across all containers on the platform.

“It’s a beautiful solution,” says Florian Rommel. “It’s like Google for Kubernetes logs. You can search log entries in real time and filter them to see trends and correlations on utilisation per core, and so on. It can also schedule and run automated tests—for example, we can set it to try to deploy a new container, monitor how long it takes, what the ping response is, and so on. It gives us a comprehensive health-check for the whole Kubernetes environment.”

Datalounges already has several clients running containerised applications on the SUSE CaaS Platform cluster. One is a Latvian software development company, which has integrated the container platform into its continuous integration processes. When the company’s developers push new code into their version control system, SUSE CaaS Platform spins up a full containerized test environment to run a suite of automated tests.

“They are developing a complex application for the transport industry, and they would have needed to build quite a large Kubernetes cluster to handle their CI pipeline,” says Florian Rommel. “We were able to offer them a cost-effective service with SUSE CaaS Platform that avoided

the need for them to make a big investment with their existing cloud provider.”

Another notable client is Redis Labs, which uses the Datalounges platform to run technical demos for clients, and to prepare its own software for SUSE Ready certification.

“SUSE CaaS Platform is still a relatively new product, and we’re keen to see how it performs at scale,” says Fabian Rommel. “But everything we’ve experienced so far has been positive, and the feedback from our clients has been great.”

He adds: “In many ways, SUSE CaaS Platform does for Kubernetes what SUSE OpenStack Cloud did for OpenStack. If you really need to, you can set up your own OpenStack environment from scratch, but it’s like pulling teeth with a chainsaw. SUSE OpenStack Cloud abstracts away all the painful parts, and SUSE CaaS Platform is the same. It lets you focus on the areas where you can really add value—developing applications rather than fixing the configuration of your container orchestration layer.”

Building on these initial experiences, Datalounges is now ready to advise its clients on best practices for containerised application development.

“We’re currently seeing a 50:50 split between clients who are using containers and starting to deliver cloud-native applications, and those who aren’t,” says

Fabian Rommel. “The technology is mature enough for wider adoption, but some companies haven’t really figured out how microservices or continuous integration and deployment fit into their development processes yet.

“SUSE CaaS Platform helps us explain the advantages of containerisation, so we can help our clients see where it could add value. Ultimately, it’s helping to reinforce our clients’ trust in Datalounges as a partner that can help them build the right solutions for their business.”