SIG gives developers autonomy with a container approach

Services Industriels de Genève (SIG) distributes electricity, gas, drinking water, and wastewater across the Swiss canton of Geneva, and produces energy through two dams and waste recovered from an incineration plant. It also has telecom services that provide a fiber optic network. When a small Docker project showed containers to be the future, SIG decided to adopt an enterprise-level development platform for its containers. I-Tracing Apalia recommended Red Hat® OpenShift® because it is flexible, secure, and cloud agnostic. The Red Hat partner implemented the Red Hat platform and helped SIG to evolve its DevOps culture. Today, SIG has more than a dozen applications running on an extremely stable platform. Developers are less dependent on the infrastructure team, saving both teams time. The plan is to use Red Hat OpenShift for new deployments when they fit well with container technology.

Question: How did your container journey begin?

Nicolas Terrond, Infrastructure Team, SIG: Our infrastructure team began monitoring containers almost a decade ago, initially looking at Docker. Then five years ago, we decided to containerize an application one of our students had developed as part of his studies. We set up a small in-house core server with the Docker runtime and ran his application. We found it pretty good and put other non-critical applications into production on this server. By 2020, we had 10 containerized applications running on this little server.

We could see how containers were the future. We're only a small infrastructure team and have a lot of different technologies to manage. Containers would mean we wouldn't have to provision a new server for every new application, saving us time. Containers would also stop developers' reliance on the infrastructure team and guarantee consistent, production-quality development environments.

But Docker was unsuitable for hosting critical applications, so we launched a project to implement an enterprise-level container platform. Our preliminary study revealed that we needed a container orchestrator and adopted a Kubernetes-based one. But building a platform based on vanilla Kubernetes would be a tall order for a small team. So, we began looking for an available and stable packaged platform that was easy to deploy and adaptable to future needs (on-premise and in the cloud).

Question: What led you to adopt Red Hat OpenShift?

Terrond: We didn't have sufficient internal experience to compare products and find the platform best suited to SIG. So, we issued a tender and selected I-Tracing Apalia to conduct a comparative study.

I-Tracing Apalia recommended Red Hat OpenShift because it can run on-premise, in the cloud, or as a PaaS (platform-as-a-service). Our small team would not have to manage the operating system. Red Hat OpenShift also has advanced security and is cloud agnostic; we don't want to be locked into a single cloud provider and keep the choice for on-premise or cloud. Our preliminary and detailed studies with Red Hat and I-Tracing Apalia confirmed that Red Hat OpenShift was the right platform for SIG.

Pierre Vacherand, Co-Founder and CTO, I-Tracing Apalia: While Red Hat OpenShift would be the obvious choice today because of its indisputable market leadership, there were other platforms to choose from when we started this project—but they don't exist today. Looking at where we are now, Red Hat OpenShift was clearly the right choice.

Question: How are you using Red Hat OpenShift?

Terrond: I-Tracing Apalia developed an architectural design with two Red Hat OpenShift clusters: a sandbox cluster for testing, training, and upgrades and a larger production cluster. I-Tracing Apalia set these clusters up, and we gradually started deploying applications to them. We now have a dozen applications deployed.

Our public applications typically allow the canton citizens to look at their electricity consumption, water consumption, and bills. Much of the data comes from SAP, so we develop web services and APIs (application programmable interfaces) to make that data available to applications. These APIs typically are built in .NET Core (also other technology like Angular, NodeJS, and PHP) and were historically hosted on Linux or Windows web servers. We're gradually moving them to Red Hat OpenShift to give them scalability and redundancy.

We're in hybrid cloud mode, where our workloads run in Red Hat OpenShift on-premise, and the platform uses cloud services for deployment. We use Azure DevOps to manage our sources and deployments. Our container registry is also in Azure.

Question: Has there been a culture change at SIG?

Vacherand: I-Tracing Apalia has witnessed a cultural shift at SIG. The development teams were previously very dependent on the infrastructure team; they had to make requests for each component they wanted to deploy. Today, Red Hat OpenShift gives the development team autonomy.

Terrond: Yes, we've had a DevOps culture for some time, and adopting Red Hat OpenShift has helped us develop that culture. We knew the platform would change the way our teams worked and were worried that we would build a beautiful platform but have nothing running in it because people were reluctant to adopt it. After all, people need to be motivated to change. It helps to have people within your development teams as a force for driving change.

So, we started small and spent time with the development teams to get their buy-in. We spent time with them. I-Tracing Apalia provided training for them. As the platform began to take hold, a cultural change happened.

Because of the strong gains in agility and time to market, the management strongly supported this technology shift.

Question: Tell us about the benefits you've seen from adopting Red Hat OpenShift.

Terrond: The main advantage is the autonomy that the development teams have, who almost no longer need the infrastructure team to provision environments. We just 'pilot the boat'—we don't need to know what's in the containers.

If we didn't have Red Hat OpenShift, the infrastructure team would be swamped with requests for new applications to be deployed. We'd be underwater right now. It used to take two weeks to set up an environment for development. With Red Hat OpenShift, it takes a few minutes.

The platform is also super stable; we haven't had any problems since we deployed it.

Question: How has your partner I-Tracing Apalia and Red Hat supported you?

Terrond: We needed an integrated solution that would also meet all our needs—such as security. I-Tracing Apalia advised us; they listened to our ideas and gave us feedback.

Mastering our systems is very important for us at SIG. Our skill levels in this area of containers are far from I-Tracing Apalia's, but they are increasing. We had an I-Tracing Apalia consultant on-site for one day every two weeks to advise us on how to improve the platform. Talking to the I-Tracing Apalia consultant was a good way for us to learn.

While the project started with the infrastructure team and I-Tracing Apalia deploying Red Hat OpenShift, we needed our development teams to be on board for the project to succeed. Our I-Tracing Apalia consultant also answered questions from our developers and integrators. They also learned to adapt and deploy applications through the workshops that I-Tracing Apalia ran for our developers and architects.

Question: What are the next steps on your Red Hat journey?

Terrond: We'll move our legacy applications into Red Hat OpenShift over time as they're updated. We expect to see a surge in our use of Red Hat OpenShift as applications move onto the platform.

If needed, we may also deploy Red Hat OpenShift in the cloud in the future. We may extend our Red Hat OpenShift infrastructure into the cloud, or we may install a new cluster in the cloud or as a PaaS. Red Hat OpenShift will be able to adapt to our needs, whatever they are.

About Services Industriels de Genève (SIG)

SIG maintains Geneva's electricity, gas, fiber optic, and drinking water networks. It serves more than 500,000 people in the Swiss canton. It provides water, gas, electricity, and thermal energy, treats wastewater, recovers waste, and implements energy and environmental efficiency programs. SIG is also supporting the development of smart neighborhoods for Geneva.

North America	Europe, Middle East, and Africa	Asia Pacific	Latin America
1 888 REDHAT1 www.redhat.com	00800 7334 2835 europe@redhat.com	+65 6490 4200 apac@redhat.com	+54 11 4329 7300 info-latam@redhat.com

facebook.com/redhatinc
twitter.com/RedHat
linkedin.com/company/red-hat

redhat.com