

SA Home Loans Adopts Microservices And Deploys 20-30 Times a Day With Docker Datacenter



Providing Financing for Homes in South Africa

Founded in 1999, SA Home Loans is a mortgage finance provider with 500+ employees dedicated to offering customers the best in every service – from origination and credit approval through to registration and ongoing loan servicing. The company has grown to become the country's fifth largest home loans provider.

Toils of Development and Production at SA Home Loans, Pre-Docker

Prior to using Docker, SA Home loans faced challenges in development, as well as in production. Within SA Home Loans they currently have 4 scrum teams, each with a development and a system test lab. The team faced slow deployment times, and were only able to build and deploy 2 apps in the dev labs, causing long deployment cycles and sometimes taking up to 2 weeks to get applications over to the testing environment.

Their issues extended to production as well. Their main home loan servicing software is built on C# and .NET and is a mixture of monolithic Windows services and IIS applications. If the service were to break, it would affect a large portion of the business users. In the past, when they deployed new features or fixes, they didn't have an easy or reliable roll back plan if something went wrong (no blue/green deployment).

They made the conscious decision to adopt a microservices architecture and needed a solution that would enable their move to microservices while also giving their developer and IT ops team the agility, portability and control they need to build, test and then deploy their applications. They soon realized that they had the potential to have over 50 separate services across their production Docker nodes, and that trying to deploy and monitor these would become difficult and complex to manage.

SA Home Loans Embarks on the Docker Journey

Initially they wanted to use Docker for supporting services, such as RabbitMQ and nginx. Once they saw the benefits of Docker, they realized that they could move all of their main application services over to containers. They decided on Docker as their preferred platform, as containerizing their .NET services would allow them to be immutable and easily transferable across development and the deployment pipeline.

They also needed a production-ready orchestration service that could give them a single point from which to manage and distribute containers onto the nodes, as well as give them a high level oversight of containers. They investigated some of the other popular products available like Mesosphere and Kubernetes, but in the end they selected Docker Swarm for its ease of use and the fact that it is Docker Native.

SA Home Loans Challenge stats:

100,000+
loans processed

>2 weeks
to deploy applications

50
distributed services

Complex
monolithic apps

Docker Datacenter at SA Home Loans

SA Home Loans now uses Docker Datacenter, the on-premises solution that brings container management and deployment services to the enterprise via a supported Container-as-a-Service platform that is hosted locally. SA Home Loans now builds and deploys apps up to 20-30 times a day! Universal Control Plane provides the production-ready container orchestration solution that they were in need of, and since it has embedded swarm within it, it shares the Docker engine APIs and is one less complex thing to learn. The Docker Datacenter solution provides ease of use and a familiar frontend for the ops team.

While they currently only have on-premises nodes, they are investigating the feasibility of deploying some of services to the cloud. This will allow them to quickly deploy Docker nodes on their VPC of choice and add any of these nodes to their Swarm/UCP cluster. Essentially having a virtual Docker engine that is scalable to their needs but is still manageable through the same endpoint that they manage their on-premises nodes.

“we chose Docker Swarm (embedded in Docker Datacenter) for a number of reasons. First, Swarm is developed by Docker themselves and it was logical that it would fit in well with the rest of the Docker products we are using within our environment today. Out of all the products we tried, it was the most simple to get installed and running. In our POC lab we had Docker Swarm working in just 10 minutes, a huge bonus for us. This is compared to Mesosphere which was difficult to set up and Kubernetes which we eventually abandoned due to long setup times.”

— Mark Dand
Systems Engineer at SA Home Loans

Modern Application Architecture for SA Home Loans

- **Microservices:** hifted to microservices architecture from complex monolithic apps
- **Rapid application deployment** from 2 weeks to 20-30 times per dayC
- **Production ready orchestration** with Universal Control plane
- **Increased IT Ops confidence:** Deployment team now has confidence in the deployment process
- **Greater Container visibility:** The ability to get high level metrics from applications from Docker Datacenter
- **Avoided language lock-in:** Developers are no longer locked into C#, can use the best language for the job
- **UCP eased transition** from Windows to Linux for the developer teams who are new to Linux-based environments

