

## CASE STUDY

# How Nakisa improved application health, productivity and peace of mind

*About Nakisa: Nakisa is a cloud-based business operations platform that works with more than 900 enterprises in 125 countries to manage human resources and finances. Customers depend on Nakisa to make better business decisions and to get insights into the health of their business.*

## SUMMARY



44 Java applications



Key tools:

- Code Scanning
- SAST
- Dependency Scanning
- Container and Package Registries



2 pipelines and 9 service categories

About six years ago, Nakisa started a SaaS journey to go from being an on-prem, traditional enterprise software provider to offering a cloud-based SaaS product. At the beginning, the team lifted and shifted the on-prem applications into the cloud — but realized almost immediately that this was not a best practice. “We knew that in order to harness the full power of cloud and be fully cloud native, we needed to move forward with microservices and distributed architecture,” explained Faraz Ahmed, CTO of Nakisa. “We know that microservices are charming and beautiful, but the journey is difficult.”

Nakisa’s team wanted to adopt a fully cloud native architecture based on microservices and using best-of-breed tools like Kubernetes. The problem was that they still relied on very manual processes, and human mistakes often caused problems, either delaying deployments or causing issues in production. The team needed a fully automated, robust deployment pipeline that would automatically test code quality and dynamically evaluate security before the code was delivered.

## Getting started

As they were starting the process, BoxBoat helped Nakisa understand what metrics it should focus on and which to ignore. “BoxBoat helped us understand what is the right thing to measure,” Ahmed said. “What is the proper process to put in place that has a direct correlation with the health of our code and application?” Part of Nakisa’s goal in the cloud transformation was to zero in on the right metrics to track and improve — but Ahmed was keenly aware that the team wasn’t even sure what to focus on.

The BoxBoat team also uncovered some blind spots in Nakisa’s preparations for the cloud transformation and things that they would need to address during and after the move to containers. “We did a lot of due diligence and research on our own,” Ahmed said. “But we later realized that there were a lot of important things that we missed. BoxBoat caught these — they were really good catches — and the fact that they caught them early on prevented problems for us later.”

### MANAGING DATA ISOLATION □ □ □

*Nakisa has strict requirements regarding data isolation that are challenging to meet, and the tools the company was using weren't ideal. BoxBoat helped them find a way to use Python to create custom scripts for the complicated tasks required to provide the right amount of data isolation. Instead of trying to glue something together or make the inadequate tool work, the BoxBoat team invested in fixing the problem the right way, with the appropriate tools for the job. “They put their effort into addressing the root cause of not having a powerful enough language available to handle the difficult tasks,” Ahmed said.*

A big part of the initial push involved moving from a self-hosted, on-prem CI/CD platform to a cloud-based implementation of GitLab. This part of the project was complicated by the fact that Nakisa’s entire codebase is in a single repository. Because of that architecture, the BoxBoat team had to create custom scripts to enable Nakisa’s team to use GitLab effectively, ensuring that any one project’s deployment was grabbing all the correct dependencies.

Generally speaking, though, it was BoxBoat’s expertise that made the process go well. Ahmed and his team weren’t intimately familiar with either the tools involved or the best practices to follow. “BoxBoat brought in knowledge of industry standards,” Ahmed said. “This knowledge was priceless, because if we were to go in and do it ourselves, without any experience, it would have taken us five years to learn how these things work.”

## A transformed process

After completing the transformation to a cloud native architecture with BoxBoat, Nakisa saw three major effects. “Number one, our engineers can now focus on innovation

rather than doing mundane tasks over and over again,” Ahmed said. If the company had continued with its software delivery process unchanged, the engineers would be forced to spend time on routine tasks like managing the on-prem CI/CD platform and wouldn't have the opportunity to innovate on behalf of the company or to learn and expand their own skills. Now, Ahmed says, engineers are able to work on truly innovative tasks.

### REDUCING COMMUNICATIONS TRAFFIC □ □ □

*One other benefit of moving to SaaS GitLab is that Nakisa was able to use GitLab's built-in container registry packaging. Instead of constantly pulling container registries from AWS into their on-prem pipeline, they did it all inside the one tool. This reduced their attack surface and made it easier for different components of the application to move between stages in the pipeline.*

Secondly, the team — and especially Ahmed, as CTO — has peace of mind. “If you let humans do the mundane work over and over, it's only natural that there will be mistakes made,” he said. “We sleep better at night because we know the code is doing the work, it will never get tired and make a mistake.” Relatedly, because Nakisa is able to use GitLab's security scans, dependency testing and code coverage metrics, the team is much more confident both in the overall security of their codebase as well as in the code quality.

Finally, working with BoxBoat provided Nakisa's engineering team with a sense of direction and a way to plan out their technology strategy over the next couple of years. “Cloud native development is a very vast field, with so many opinions,” Ahmed said. “We didn't know the way that resonates best with Nakisa. Our customers have special needs around data protections, surface area security and scaling.” After working with BoxBoat, Nakisa was able to understand how to apply general cloud native principles to its specific needs, giving the team clarity about what to do next, and then what to do after that.

“We have a very solid cloud native roadmap that will allow us to build more products, and they keep enhancing our CI/CD system to cope with the demand,” Ahmed said.



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*BoxBoat, an IBM Company, was founded to help innovative organizations achieve Digital Transformation through the adoption of cloud native technologies. We are engineers at heart, and enjoy solving challenging problems by utilizing cutting-edge solutions including Docker and Kubernetes. **Deliver software faster with BoxBoat!***