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# Centroid Systems White Paper

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# Lower TCO & Improved CI/CD Pipeline with OKE

Our client had always run their software on-premises in their own data center, but after a recent acquisition, they wanted to explore other options as they scaled their business.

## **Why Explore Other Options?**

Up until this point, the client had to establish new infrastructure every time they onboarded a new customer. This process involved setting up and configuring new virtual machines and sometimes even physical servers. While our FinTech software was utilized by a diverse range of long-term clients, each operating at various scales, adding new customers was not a frequent occurrence. Hence, we were content with the time it took to set up a new customer.

However, in hindsight, we realized that our approach to using on-premise infrastructure was not always the most cost-effective. The hardware setup process was time-consuming, so we often provisioned more infrastructure than required. When setting up a client, it was difficult for us to predict the exact scale of certain parts of our tech stack, such as Oracle DB or our Data Science Worker Servers. As a result, the infrastructure we stood up was often underutilized, leading to unnecessary overhead in terms of setup costs and ongoing operating expenses.

## **Why We Chose Oracle Cloud Infrastructure**

Our client was already using Oracle DB Server, and most of their software was written in Java. This meant we required a cloud provider that could offer exceptional support for Oracle DB and an efficient way to compile, deploy, and scale Java applications. Our client had heard stories about companies struggling to control costs if they relied too heavily on a proprietary service or if a cloud provider had hidden costs, so we aimed to avoid vendor lock-in. In other words, open standards were preferable, but we still preferred using cloud-managed services to save time on management instead of rolling everything ourselves.

The client compared several options and ultimately landed on Oracle Cloud. They found that Oracle Cloud had excellent support for Oracle databases and offered a managed Kubernetes service called Oracle Kubernetes Engine. Furthermore, unlike other cloud vendors, Oracle Cloud did not have hidden fees, making the cost structure substantially more affordable than Amazon Web Services and Azure. After review, we decided that Oracle Cloud made the most sense and would meet all of the client's needs.

## **Saving Money with Oracle DBaaS (ATP)**

Oracle Cloud offers an elastic form of Oracle DB called Oracle Cloud Autonomous DB. This service is extremely cost-effective, and it dynamically scales up or down as needed, allowing us to only pay for what we use and no more. Oracle Autonomous DB was ideal for our use case and addressed our historical challenges of estimating what the client's needs would require.

Adopting this feature ultimately led to substantial cost savings, both in terms of licensing as well as infrastructure costs. Best of all, its ability to scale gives us confidence we can easily onboard new customers to our platform without having to do a lengthy analysis of expected storage and CPU/RAM requirements.

## **Enabling Digital Transformation**

Historically, our client had to manually set up their servers and configure them individually. To compile their software, they had to log into a central builder server and copy the jar files to each server. The code was versioned with CVS and documented, but recently, the IDE support for CVS has been reduced as more companies have started using Git for versioning their code.

This process was not unusual when our client was founded. However, as they prepare for growth, they want to make hiring and scaling the development team easier, adopt tools that are familiar to new hires, and help the development teams deliver software in an agile way.

Their architects and ours collectively decided that Gitlab would be the optimal tool for managing source code and enabling continuous deployment. Gitlab was preferred because it is familiar to new hires and allows for the automation of compiling and deploying software with CI/CD pipelines. Although we considered Oracle's build pipeline system, we ultimately chose Gitlab to avoid vendor lock-in. However, Oracle's tools are well integrated into Kubernetes, making it a great option for those who do not want to set it up themselves.

They selected Kubernetes to make deployment and scaling our applications easy for our development team. We helped our client set up a Kubernetes cluster on Oracle Cloud using Terraform, configured monitoring and alerts, and helped them deploy all of their apps. Additionally, we helped them upgrade to the latest long-term support version of Java and automated the deployment of their data science workloads. Where it used to take days or weeks of coordination between multiple teams to stand up another data science workload, now we can scale up our data science workloads in Kubernetes in a matter of seconds.

## **Improved Security**

We successfully integrated Oracle Cloud with our Microsoft Active Directory and VPN. This integration has granted their team members access to the resources they need and simplified the employee onboarding and offboarding processes. Moreover, defining security policies for groups of resources instead of setting them up for individual users has made the system more secure and flexible. As they continue to expand their business, this integration will provide them with more scalability and better security.

## **Conclusion**

As we look to the future and the growth that it will bring, we feel ready. We are excited to have partnered with Oracle Cloud to deliver scalable and cost-effective solutions to our customers.

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