



Create better code in a better environment

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Mission

We give large-scale software engineers a more versatile development environment, enabling greater innovation and more profound discoveries.

For those who develop high-performance computing codes, Archanan provides a lean and scalable environment for development, debugging, profiling, and memory mapping analysis. Different from conventional development platforms, Archanan leverages cloud infrastructure to create a fully scalable and highly available parallel and distributed environment.

Product Summary

Archanan provides a cloud-based development environment for massively parallel and HPC software. We enable single-click deployment of parallel codes into thousands of compute nodes for debugging, profiling and visualizing memory maps. Archanan bridges the gap between the software engineering process on laptops or workstations and the deployment on multi-million dollar supercomputers to gather results.

It is common for large-scale software developers to write their code on workstations, equipped with 10-20 cores. The problem is that this code is meant to run on supercomputers with up to hundreds of thousands of cores. Once it becomes time to test scaling, developers migrate their code to a supercomputer and finish debugging there. Around a third of a supercomputer's utilization can be attributed to debugging workloads. This means that many compute cycles become unavailable for production workloads to run. By offloading debug jobs to the cloud, we enable computing centers to grant research groups more resources for more time. Additionally, our platform gives developers the opportunity to write their code on large-scale systems from the start. By providing state-of-the-art debuggers, profilers, and memory map visualizations, we help developers create better quality code more efficiently.

Other platforms which offer solutions for HPC in the cloud focus only on running production workloads. Archanan leverages the cloud to create a complete development suite and environment for properly testing large-scale codes before deployment on supercomputers.

Milestones and Roadmap

Archanan Founded.
Early January, 2018

Secured \$30,000 in funding.
Late January, 2018

First MVP.
Early March, 2018

Proof of Concept.
Mid April, 2018

Problems

Supercomputing has a problem: we have access to tomorrow's computers and yet, we are still using yesterday's practices.

- *Development of high-performance code is not happening in the right environments.*
 - Developing HPC code on desktops does not permit proper scalability testing.
 - HPC development on supercomputers wastes resources and restricts the system for other users wishing to run production code.
 - Not many HPC software engineers are fluent in cloud solutions architecting, which effectively prohibits them from using the cloud to build test environments.
- *There are no standard, fully-managed, scalable platforms for developing, debugging, profiling, or memory map visualization.*
 - Parallel codes tend to suffer in quality due to the lack of standard tool suites and practices tailored for parallel code development. Those codes typically have high technical debt and are seldom revisited to "repay" it.
 - The best solutions for developing and debugging parallel codes are expensive and need to be installed on supercomputers.
 - Development and debugging are performed on supercomputers, restricting access for users running production codes and generating high development cost.
- *The world's supercomputers are not being used to their fullest potential.*
 - About a third of a supercomputer's utilization can be attributed to development and debugging
 - There are long wait times to reserve a slot to use a supercomputer.

Solutions

We leverage cloud computing resources to provide a scalable environment for developing, profiling, and debugging high-performance codes.

- *We offer HPC environments tailored to different sets of computational problems.*
 - By utilizing cloud resources, we deliver a scalable environment for testing on thousands of nodes.
 - Since development now takes place in the cloud, more supercomputer time is available to run production code.
 - We allow the user to focus on development, while we take care of the complexities of cloud infrastructures.
- *By providing a suite of development tools on top of a managed cloud infrastructure, we create a lean and scalable environment for developing parallel codes.*
 - We increase the quality of produced codes and help eliminate code debt, effectively reducing total development cost.
 - We provide state-of-the-art tools for parallel and distributed software engineering as a SaaS solution, on a subscription basis, meaning you only pay for what you need.
 - We provide a SaaS solution enabling parallel and distributed software engineering in production-like environment which scales out and in on-demand.
- *We eliminate the need to waste on-premise supercomputing resources on developing and debugging codes.*
 - We can help save on operation cost of a supercomputer.
 - We make it easier to get more time to run production codes.

Archanan

FAQs

What is your pricing model?

We offer a subscription-based license to our SaaS solution. There are several pricing tiers including those at the Individual, Team and Institution levels. Pricing includes the cost of cloud infrastructure, software licenses, and support. To learn more about pricing models, please inquire.

Who is this for?

Archanan is for any individual, team, or institution which is involved in the development of large-scale parallel codes. Examples of applications range from scientific simulations (computational fluid dynamics, electromagnetics, materials analysis, etc.) through industry applications (aerospace engineering, drug discovery, semiconductor design, etc.), financial analyses (high-frequency trading, stock market analysis, etc.), artificial intelligence and even the entertainment industry (renderings for animations, etc.).

How much can I expect to save?

Savings can vary from hundreds, to tens of thousands, and even up to hundreds of thousands of dollars each month depending on the size of your team and the scale of your deployments. In order to learn more about how Archanan can help defer energy and licensing costs, and code debt specifically for you, please drop us a line.

Is it difficult to use?

We have designed our solution in such a way that scientists and engineers will be able to focus on the development of their codes without having to worry about configuring a specialized development environment. Archanan's platform will look and feel just like the production environment you are used to.

What else?

Archanan is a first in its class solution. We are working with industry leaders to provide developers the most seamless and powerful experience possible. If you have any requests for features that were not mentioned here, please do reach out and we'd love to chat about it!

Founding Team



Alex Nodeland

Co-Founder & CEO

Alex previously served as CTO and Chief Mathematician at Scala Computing, delivering solutions for automated deployment and optimization of HPC systems in the cloud. There he helped raise a seed round of funding, and bring the company to a world renowned accelerator in NYC, where Scala forged partnerships with AWS and Microsoft Azure. Through his prior experience in the space and knowledge of startups, Alex will help bring Archanan to market quickly and efficiently.

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Łukasz Orłowski

Co-Founder & CTO

Łukasz has worked as a software engineer, computational scientist and software/solutions architect in HPC for over 7 years and has experienced, first-hand the woes of a distributed software developer. Through his experience at Intel and A*STAR, as well as consulting for IT startups, he has developed a clear vision of what is missing in the development pipeline and has a plan to implement a solution. Through Łukasz's extensive network in the HPC space, we can ensure a smooth and fast roll-out of our solution.

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