



Executive Summary

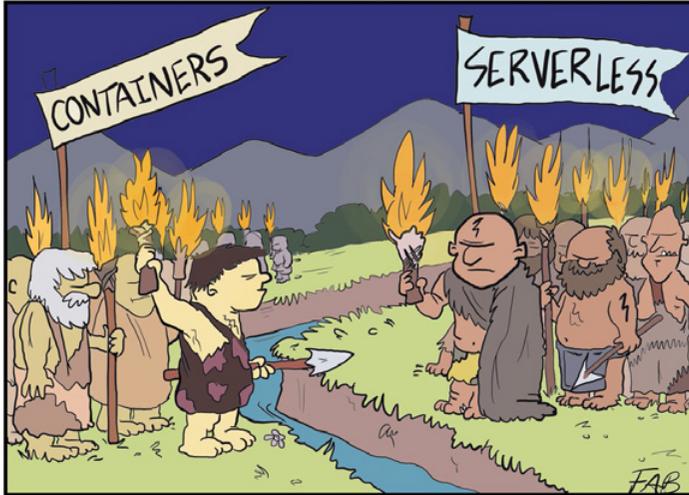
# Why the Fuss about Serverless?

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## FaaS and Furious by Forrest Brazeal



The two tribes regarded each other suspiciously in the glow of their brightly blazing production environments.

Cloud computing, or more specifically Infrastructure-as-a-Service (IaaS), represented the shift of compute from a product to a *utility* world. In early 2008, theory predicted it would become the dominant form of computing; there would be an exponential growth (known as a *punctuated equilibrium*) and a new form of practice would co-evolve with the technology. There would be confusion over terms, and companies would also have *inertia* caused by reluctance to abandon past success – especially those who had been early adopters of recent practice around virtual data centres. Despite this, we would see an explosion of higher-order systems built with cloud along with new sources of value. Into the mix, past vendors would create an awful lot of fear, uncertainty and doubt, especially around security.

However, at the same time, many pundits believed the future was *virtualization* in the data centre and cloud was seen as niche and for specific use cases, mostly startups. Amazon's cloud computing platform was considered to be doomed to fail and another example of Amazon investing in an unprofitable business model with a revenue that was estimated to be small (sub \$50 million). Many complained that Amazon's profit was falling due to this spending on new technology. They cited barriers to entry, the lack of compatibility with enterprise solutions, security concerns and recent outages. As one pundit said, "It's still very much a do-it-yourself service. As a result, there are a lot of companies trying it out, but not many are betting their businesses on it." By 2009, this prevailing negative view had culminated in the decidedly cloud-unfriendly McKinsey report *Clearing the Air on Clouds*.

But not everyone thought like that. Those heavily involved in using the technology painted a bright future that was in line with theory. And theory has proved to be correct. Cloud grew – exponentially. It created a new co-evolved practice known as *DevOps*, with an explosion of higher-order systems and new sources of value. Vendors created uncertainty, but Amazon's worth rocketed. The score was one-nil to theory. Those who had waited to become engaged with cloud discovered they had no choice and are mostly playing catch-up, even today.

Which brings us to today. For the last four years, we have been watching another transition. This time, it's not infrastructure but the code execution environment (i.e. the *platform*) that is shifting, from product-based stacks to more utility forms known as *serverless*. Once again, theory predicts it will become the dominant form, there will be exponential growth, a new form of practice will co-evolve with the technology and companies will have inertia due to past success – especially those who were early adopters of recent practice around IaaS and DevOps. We will see an explosion of higher-order systems along with new sources of value. However, as with the previous transition, we will also see confusion and past vendors creating an awful lot of fear, uncertainty and doubt, especially around security.

You would have thought the old adage 'once bitten, twice shy' would apply. But many pundits are once again proclaiming a different future – a hybrid world of *containers*, with changes in the market driving distributed computing out of the cloud rather than the cloud distributing outwards. Serverless

is seen as more niche, more for specific use cases and more for startups.

But there are already examples of regulated data companies and retail and robotic giants building on serverless. If you ask people who are actively involved in using the technology, they paint a future image more in line with theory – just as happened with cloud in 2008. The signals are there, if you can look through the noise. Will the score be two-nil to theory?

In this report, we've investigated and tried to capture these changes. We've had to resort to a bit of population genetics (and other tricks) to amplify the signals. To summarize the report: theory is in the penalty area facing an open goal – and it looks like it will win. Serverless will become the dominant paradigm. The future is serverless; it will cause a rapid acceleration

***“Serverless will become the dominant paradigm.”***

in the creation of new sources of value and a new set of practices around finance and development along with exponential change.

Now is the time to start embracing and to start sunsetting those old ideas of IaaS, containers and the more hardware-focused view of DevOps. We've provided a set of recommendations to help you on your journey, a few warnings on who to listen to and some suggestions for practices that you'll need to have in place and what to watch for.

We recommend that clients:

- Allocate IT engineering resources to building with serverless and gaining experience in this space.
- Engage with the serverless world, including sending engineers and ideally some members of finance to attend events/conferences in order to acquire those emerging skills.
- Be careful of advice, especially from those who lack experience of building extensively with serverless.
- Introduce a policy of serverless first, but do not embark on building their own serverless environments without robustly challenging the reasons for this.
- Start planning to sunset existing private IaaS efforts over the next five to ten years, with a view to moving up the stack into the serverless space.

Or you can wait, and spend the next decade playing catch-up when in about five years, you finally discover you had no choice. It's not *if* but *when*.

***“It's not if but when.”***

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