instaclustr
by NetApp

eBook

6 ½ Best reasons why open source technologies are shaping enterprise data infrastructures

Introduction

There is an undeniable trend we're noticing among our customers:

After adopting one open source technology into their data infrastructure, enterprises of all shapes, sizes and industries quickly begin to adopt even more into their stack.

What is it about open source software? And why are they avoiding the proprietary code alternatives?

In this e-book, we've put together the 6 best reasons why enterprises are choosing to adopt multiple open source technologies into their infrastructure after starting off with one.

And just for good measure, we've thrown in a bonus reason, too.

You already know the incredible value of using one open source technology. **Now experience the awesome power that comes with adopting multiple into your data architecture.**

1: Your ROI goes through the roof

Managing one dataset doesn't come easy – or cheap.

But managing multiple datasets, especially when running proprietary software? That quickly becomes convoluted and incredibly expensive for several reasons:

You're paying on-going licensing fees for every proprietary application you're running

But what if you're barely using that application (or not even using it all)? Too bad. You're stuck spending your limited resources if you're locked into those licenses.

Application interoperability becomes an ongoing challenge with different interfaces, communication mechanisms, and protocols

This will hamper your ability to ensure a smooth data flow, increase the probability of data latency, and overall, provide numerous roadblocks for when you need to scale.

You become entirely vendor dependent

The more proprietary applications you introduce into your architecture, the more dependent you become on those vendors. Due to the lack of options available (after all, you're stuck with this vendor), this will easily lead to higher maintenance costs and create even more challenges when you need to upgrade or replace components in your architecture.

So how can utilizing multiple open source technologies boost your ROI and deliver lasting value for your organization?

No licensing fees. Ever.

- Being completely free and open means you're never stuck paying licensing fees.
- Take that growing sum of money you're saving and invest it in other areas of your organization that will help turbocharge your growth.

Open source makes it easier to create efficient processing pipelines and reliable data management systems tailored to your requirements

- With proprietary code, by comparison, you're stuck using their application ecosystem: their search functions, their data stores, their streaming services, and so on. You don't have the flexibility to use what you need, when you need it.
- But with open source, the world is pretty much yours to design however you need it. Open source applications are renowned for their interoperability, giving you the freedom to use what you need for your business – and not what a proprietary code company is forcing upon you.

You're well-prepared for the coming AI wave

- We all know that AI is creating unheard-of value for organizations, but only if they're prepared to properly handle the onslaught of data coming their way (and know what to do with it).
- By harnessing the unique strengths of multiple open source technologies, developers have all the tools they need to create the scalable architectures and real-time analytics capabilities required by AI.
- Try doing that with proprietary code (hint: it's substantially more difficult)

The ROI of adopting open source technology is staggering, in both the short- and long-run – and it only multiplies with the more open source technologies you use.

2: Avoid vendor lock-in...from multiple vendors

Proprietary code companies like to hook you in with the promise of delivering "flexibility and freedom"...as long as you stick to their rigid rules. More often than not, nasty surprises will arise that can cost you time and money.

But what if sticking to those rules no longer meets the current needs of your data infrastructure? Well, that's why they call it Vendor Lock-In: good luck breaking free without considerable costs and lost downtime.

It's already tough to break free when you're using a single proprietary software offering. Now multiply that problem by however many other proprietary code technologies you have in your data stack.

What do you get? A headache that quickly spirals out of control.

Time and money spent trying to untangle your data from a system that is purposefully designed to make it challenging to leave adds up quickly. How so?

- **Hiring experts to migrate your data away from proprietary software**
- **Time lost due to your engineers configuring a new system**
- **The cost of unexpected downtime or the inability to do exactly what you need with your data**

These problems only get worse – and more expensive – the more proprietary systems running in your data stack.

With open source, you'll never have to deal with vendor lock-in. Not now, not tomorrow, or anytime in the future.

You get the freedom to walk away whenever you need to, or switch to a different provider. There's simply no such thing as "Vendor Lock-In" with pure open source software.

3: Customize until your heart's content

A certain database set-up that works for one company may very well not work for another. That's precisely why organizations need the ability to customize their infrastructure to design a system that works for them – not someone else.

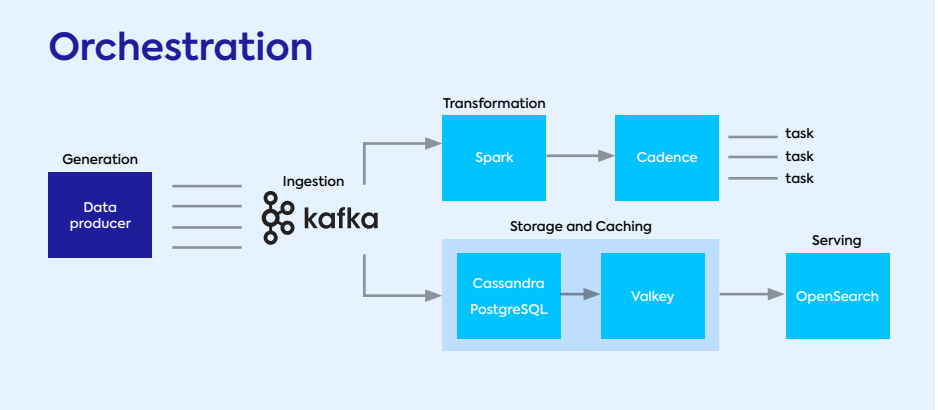
With open source, you get extensive customization options and support for interoperability. This allows you to tailor every component of your data to the specific requirements your organization demands and seamlessly integrate them into existing infrastructure.

But that's not all. You get an unparalleled amount of flexibility that you would never get with proprietary code:

- **Need to alter the source code to suit your specific needs? Go ahead! In fact, the open source community actively encourages you to modify code and improve upon it.**
- **With the most popular open source technologies, you won't have contractual limits on deployments.**
    - **The number of active users, platforms, processors, and more – that's entirely up to you**

No matter what you need to do with your data, there will be an open source solution that excels in that specific functionality.

What can a customizable, multi-open source technology solution look like? Here's one example:



Leverage the strengths of each technology and build out your tailored data ecosystem.

4: Cool new features & updates are always on the horizon

An enduring hallmark of the open source community is that it actively encourages collaboration among its users – from individual contributors and open source enthusiasts, all the way up to leading open source providers like Instaclustr.

Simply put: everyone involved with open source never stop collaborating with each other.

And better yet? With such an incredibly diverse pool of stakeholders, you're going to get the latest and greatest developments, features, security patches, upgrades, everything – and fast.

Faster development cycles. Faster identification of bugs and security fixes. Faster creation of cutting-edge features (like PostgreSQL on Azure NetApp Files or Vector Search in Apache Cassandra® 5.0).

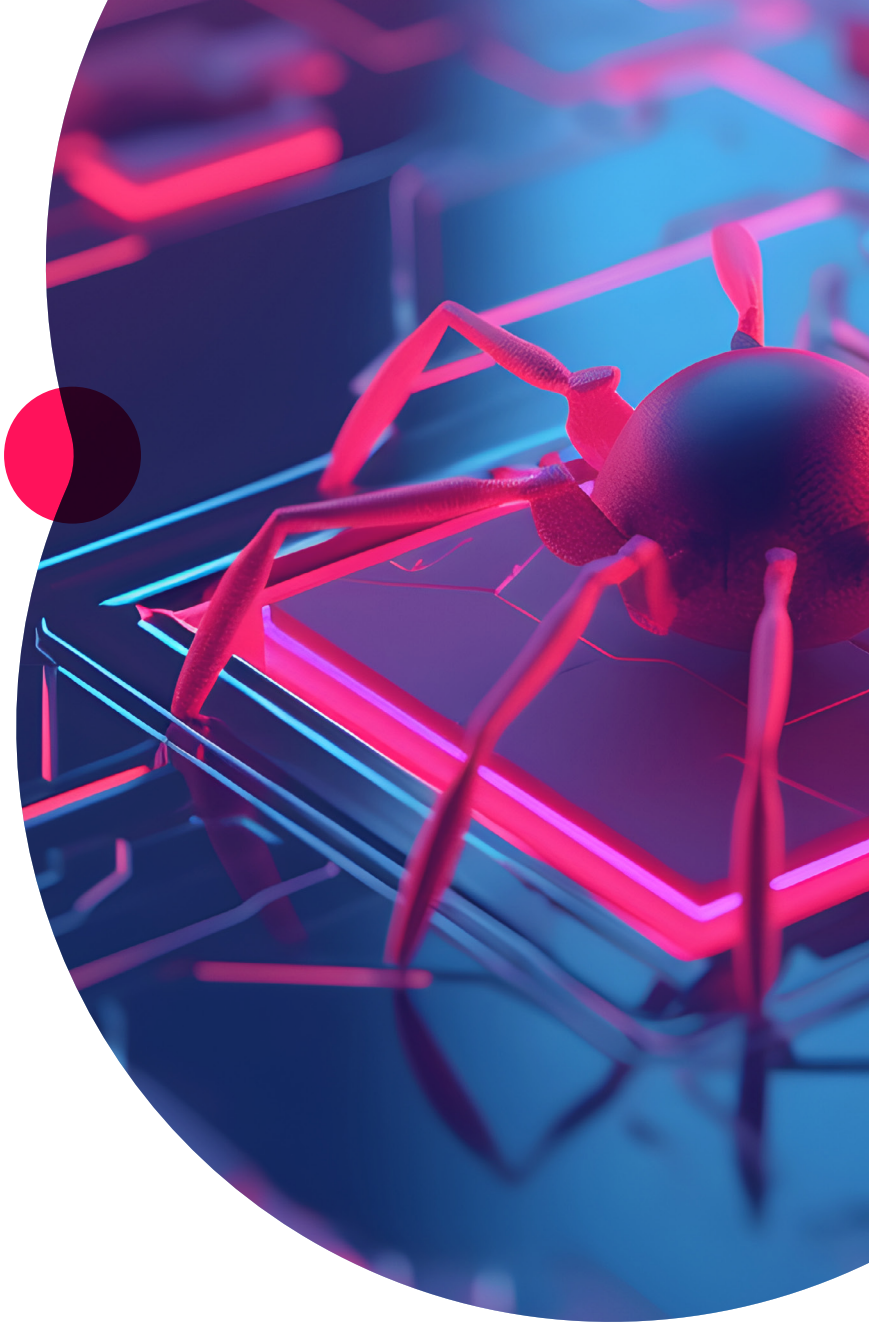
Not only that, but users of open source also get:

- **Massive libraries and depositories of tools**
- **The ability to easily prototype and experiment**
- **Improved software quality**
- **Access to experts all over the globe**

And these benefits only grow with the more open source technologies you use.

Whether you're creating a new feature yourself or following along to see what others are developing, one thing is for certain: **with open source, there is always something cool right around the corner.**

5: Security is unlike anything else you've experienced



It may seem counterintuitive at first: the software with its source code out in the open for all to see (including hackers and other nefarious actors) is more secure than the source code closely guarded and locked away in a vault somewhere (read: proprietary code).

But it's true: open source provides a security environment that proprietary code companies simply cannot match. Here's why.

Transparency is the name of the game when it comes to open source. When a security flaw is inevitably discovered, the community – and all of the software's users – will hear about it immediately, and a fix will not be far behind.

That collective scrutiny from the entire community of users and contributors alike means that the software itself is going to be more secure. Now compare that to proprietary code.

If the code is closely guarded, then users don't have remedies to fix any bugs or security flaws themselves. They're left entirely dependent on the company that owns it to develop a patch, but more often than not, it will take longer.

In the meantime, what can users do while waiting around for a fix? Unfortunately, options are limited. That's been a key reason why so many companies are jumping ship from proprietary code and moving to open source.

Bugs happen and critical security flaws are discovered. Companies want fixes to these issues as fast as possible before they begin to wreak havoc on their operations, and open source provides solutions – and transparent communication – far quicker than proprietary code.

6: Scale to new heights! (Or new lows!)

What good is an application if you can't scale at the speed and agility you require? Not very.

The incredible thing about open source is that multiple technologies are designed specifically to give you the power you need to scale the way you need to. **And remember: scaling goes both ways.** With open source, you can quickly scale down whenever your requirements demand it.

Here are some of the best applications built to help you scale:

Apache Kafka®

A distributed platform designed to handle high-throughput, fault-tolerant and easily scalable data streams

Apache Cassandra®

As a NoSQL distributed database, Cassandra can handle troves of data across multiple commodity servers – all while providing fault tolerance and 100% availability

Valkey

Being an in-memory data structure store means that you can use it as a database, message broker, or cache. With its high performance, it provides numerous features like replication, clustering and pub/sub messaging, ensuring that scalability is top-notch.

OpenSearch®

A powerful search and analytics engine, OpenSearch makes it incredibly easy to scale horizontally due to its architecture and how it leverages sharding.

By choosing the open source technologies that best fit your needs for specific scalability and performance requirements, you can unleash their full potential and watch your data ecosystem grow.

No matter the situation, open source ensures that you have the ability to easily handle whatever the demands of your workloads are – without breaking the bank or suffering from downtime.

6 ½ : The community always has your back

The six reasons we've detailed above are the key factors why companies are actively choosing open source – and why they have zero intention of ever going back to proprietary code.

But the magic of open source is not possible without the sustained help of one particular group: the open source community itself.

Developers, committers, advocates, organizations, enthusiasts.

It's a diverse bunch that makes up the open source community, but together, they create a powerful force that delivers unparalleled value for everyone that uses their software – and they will always have your back.

Open source has proven time and again to deliver the value, flexibility and performance that companies demand for their modern data infrastructure. But none of this would be possible without the passionate and diverse community that lives and breathes open source – and continues to advocate for these incredible projects.

Fearing a license change to something more restrictive?

You can bet your last dollar that they will have a fork ready to make sure the project lives on in open source form.

Worried about transparency?

The moment something noteworthy arises – a potential bug, security flaw, new feature in development – you'll hear about it right away. Nothing is ever done in the dark; complete transparency is the name of the game.

Having trouble with a particular issue?

Simply reach out. Odds are, you're not alone – and others will be ready and excited to help you solve that problem, all in the name of maintaining strong support so the project will continue to thrive.

Final thoughts: Get more with multiple

There are many reasons why companies are ditching proprietary code software and embracing open source, but there is one unifying theme: open source delivers the value that companies of all shapes, sizes and industries need to continue driving operational excellence.

Best of all? This value will only go up as you adopt more open source technologies into your data architecture – and keep you competitive in an increasingly data-driven landscape.

You've already experienced the awesome power of open source. Now, let's see how adopting multiple technologies can unlock the full potential hidden within your dataset.

Contact our open source experts and let's have a chat about elevating your data architecture with multiple open source technologies.

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