amazee.io eBook

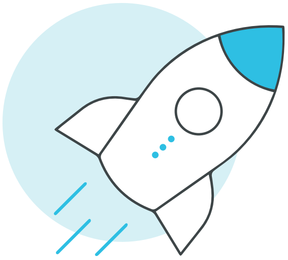
WebOps 101:
A full and comprehensive guide to WebOps

Harnessing the immense potential of WebOps
for developers and web teams

I/O amazee.io

Why are we writing this eBook?

Well, for one, to introduce the concept of WebOps to you. Because it’s not going anywhere. In fact - WebOps, the web-focused cousin of DevOps - is leading companies into the next generation of digital presence management. WebOps is increasingly becoming the determining factor between websites and web applications that are functional, thriving, and managed - and those that fall behind.



What is WebOps?

The term “WebOps” is one you may have seen floating around the internet before, - but what does it actually mean?

The term “WebOps” refers to a collection of processes and practices that ensure smooth deployments, operations, and management of your web projects. WebOps practices exist to increase the collaboration, productivity, and efficiency of your entire digital team - which means a smoother and more integrated hosting experience.

For your teams, this means: **Better efficiency. Faster timelines. Easier deployments.**

Common question we hear about WebOps: Is it DevOps?

The answer. No. But it’s related. They certainly have similarities. DevOps, which was created to be a strong force for bringing engineering teams together to run applications, has structure and processes that closely resemble those of WebOps. The key difference is this: WebOps is primarily used for web processes whileDevOps is used more broadly by developers and software teams.

So although the teams using the two approaches can be quite different, DevOps and WebOps are both sets of practices to ensure smoother processes, better teamwork, and encouraging increased automation. If done right, the end result is typically shorter timelines, easier deployments, and more effective approaches to maintenance, security, and updating. Both WebOps and DevOps practices embrace Agile methodologies and focus on improving application engineer life cycles.

WebOps includes adopting CI/CD tools with an emphasis on automation, monitoring, cloud computing, containers, and better security practices which don’t stifle collaboration and teamwork.

The number one similarity: Both DevOps and WebOps practices make life a lot easier for developers and the broader engineering teams.

Why WebOps, Why now?

In 2022, legacy hosting is leaving digital teams stuck with slow processes, frustrating progress, few deployments that take too much time to plan and coordinate, and no single consolidated approach to application delivery. Legacy hosting frustrates web teams around the globe, because it's just not able to keep up with the modern demands of our digital age.

Using legacy hosting, your site may be hard to monitor, scale, and maintain. But how did legacy hosting ever meet digital needs? The truth is, even just 5 years ago, legacy hosting may have been still scraping by.

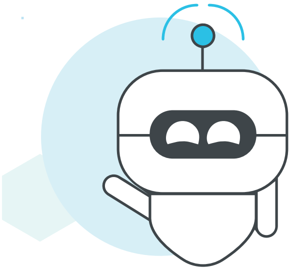
In the last 5 years, the world has seen unprecedented online and digital growth. More people work online than ever before, and we all spend so much time on the internet.

As a result, businesses everywhere have ramped up their digital presence with more sites, new sites, better digital experiences, and trendier digital applications. But as you might have guessed, upkeep and extensions of all these new digital experiences takes time, effort, and resources - something that many teams just don't have.

In other words, the demand to move quickly and stay competitive in the 2022 digital age has overtaken many digital teams. Their leaders are asking for more and more, but their resources are limited - developers, web team strategists, and tech teams can only do so much.

Small teams of around 5 people are tasked with managing, overseeing, monitoring, and updating more than 20 sites - all while trying to complete the rest of their daily work.

Legacy hosting just doesn't help developers do the things they need to do, and out of the box it certainly doesn't have the automation capabilities it would need to be effective.



If things keep going this way, here is what many tech teams will likely start seeing - much to their managers' chagrin:

- Non-functional web applications, crashes and outages due to outdated software
- Outdated website page copy and design
- Increased vulnerabilities and security risks due to outdated software
- Very slow loading pages due to the inability to use modern software stacks
- Faltering digital presence, and slow (if any) growth
- Inability to try new ideas quickly and reach new customers effectively
- A generally poor end-user experience

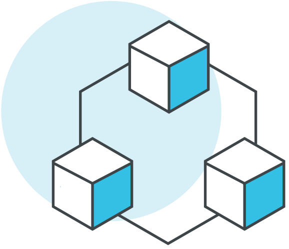
For companies who are not concerned with their hosting solution currently, we're impressed - but suggest at least taking an inventory of your team's bandwidth. This is because the digital age, although advanced, has barely just begun.

The next 10 years of digital trends include things like self-driving cars, AI robots augmenting humans, and virtual realities like the metaverse. The world as we know it will change, as it always has, and WebOps is how we predict most major companies will be able to keep their digital presences up to speed with the changing world.

Containerization and WebOps

In the past, with legacy hosting, all sites and web applications were clustered together over the same underlying infrastructure and software. This meant that most sites - whether it was 5 or 50 - ran on the same underlying software. This caused problems because it was hard for anything to be done to one site independently of the other sites on the same infrastructure and operating system - even making small changes or updates to one single site meant that all the other sites could have outages or be impacted.

With legacy hosting, it's very hard to keep every single site up to date - because every single site is so tightly linked with one another. Altering one site has a comorbid risk of impacting another site in some undesirable way, because often they really aren't separated from one another.



For example, if there are 50 sites on one server, they often all have to run the exact same version of PHP. To customize a setup that's specific for one site under one set of all-encompassing infrastructure is complex - if not basically impossible - using legacy hosting. It could technically be done, but it would take an enormous amount of effort and result in a technical setup that is hard to maintain and manage, and ultimately probably wouldn't be worth it.

When companies have ended up in this situation but needed to make critical updates to the operating system or software, a substantial amount of coupled risk was involved in this process - for every single site.

Containerized applications were created specifically to solve this problem - keeping sites separate from one another, and making the updating process so much easier, while still retaining a common underlying infrastructure.

Containerized applications are ring-fenced from each other, so that the container can be updated easily. Even if hundreds of different sites are running on the same infrastructure, it's easy to make updates because the containers can be managed independently, and treated like individual properties when it comes to updates and extensions.

With containers, everything is much more automatable, and the risks of running different applications on shared infrastructure is drastically minimized. In fact, it becomes far more possible and feasible to do so because sites aren't all intermingled with one another. Conceptually as well as practically they can be treated, edited, updated, and maneuvered completely separately from one another.

The risk of accidentally harming one site while trying to improve another all but disappears with containerized hosting.

Containers are an obvious solution to the legacy hosting problems of the past. In order to build a really successful WebOps approach, automation is a necessary component for building, testing, and deploying an application. And without containers, it's a lot harder, and in many cases very close to impossible.

So does WebOps have to include containerized hosting?
Not technically, but we don't know why you wouldn't. Containers allow for an extreme amount of flexibility and versatility, and they enable many of the core principles of WebOps - like automation (which really is often impossible with legacy hosting). Containers are also a key component that help companies stop overspending on infrastructure.

As mentioned above, containers also ensure that sites can be independently risk-managed - whereas with the "old way," there was a necessary coupling of risk.

A problem that many organizations encounter with legacy hosting is the ability to scale: there are many things that just cannot be scaled with legacy hosting, like automation and application flexibility. Containers enable the ability to scale the way that companies need to - when they need to - by allowing for the adoption of orchestration systems such as Kubernetes.

In our opinion, an effective WebOps approach will include containerized solutions.

WebOps for developers and engineers

Leverage Kubernetes without building bespoke pipelines and code to deploy applications

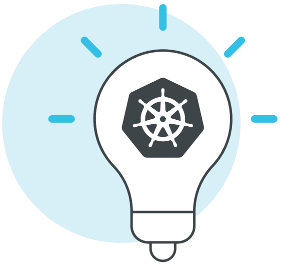
Engineering and developer teams struggle with resource bandwidth. Many small teams struggle with resource allocation for their web operations. The digital demands for sites and web applications are growing, but tech and digital teams are limited in their capacity to manage and update multiple sites at once.

This is where WebOps comes in. Site management, updates, versioning, and creation become easier than ever with containerization, Kubernetes, and scalable modern hosting infrastructure.

Kubernetes is a vital part of any good WebOps strategy. Here's why.
Kubernetes is the key that helps technology teams unlock a whole new world of possibilities. Many teams want to use modern orchestration systems and technologies, but learning Kubernetes from scratch and trying to do it yourself takes time. Years, maybe.

Because another day without Kubernetes is another day without the scaffolding and systems to automate all of your containers and manage their life cycles easily. Kubernetes makes sure that all applications in cloud environments run consistently by automating critical (but mundane, time-consuming) tasks like deploying, scaling, restarting, monitoring, alerting, load-balancing, and more.

This eliminates several of the time-consuming, tedious manual tasks that developers once often did manually. Kubernetes is widely considered the most modern and future-facing approach for orchestrating and managing containers, as well as automating the associated hosting, and life cycle management tasks. Without Kubernetes on your side, your site may be the underdog compared with those who are embracing it.



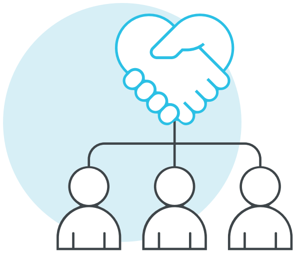
In 2022, containerization is quickly becoming the standard. So more teams are asking for it, and demand is higher for web teams to utilize Kubernetes and containerized hosting for new sites and apps.

The number one reason for this is that Kubernetes and container hosting can prevent downtime or outages during maintenance, scaling, and security events, which can be catastrophic for a business.

Automation doesn’t hurt, either, as processes can happen much more quickly, and new ideas can be brought to market faster. Common stressors like upgrading software, installing software, implementing security patches, and scaling can all be simplified with Kubernetes, so applications can run smoothly with no interruption.

Modern enterprises have come to prefer Kubernetes- and their reasons are understandable. It’s hard to think about going back to the “old way,” which means that engineers would have to do all that work in the slowest, most backwards way possible. Kubernetes makes life a lot easier for developers and engineering teams.

However you manage to access Kubernetes - hiring experts, doing it yourself, or using a managed Kubernetes service - know that the benefits for your developers and engineering teams are nearly endless.



WebOps and the creative/web team

Creative and web teams love using a WebOps approach for one simple reason: They get to do more, faster, and independently. With WebOps, you can test more ideas, whip up new landing pages, deploy, and make rapid updates as often as your business demands . In years past, many web and business teams felt frustrated because they were extremely limited in their capacity to experiment, test, measure and iteratively expand their digital presence.

But with WebOps, timelines can be compressed, meaning you can go faster!

Results can be more dramatic.

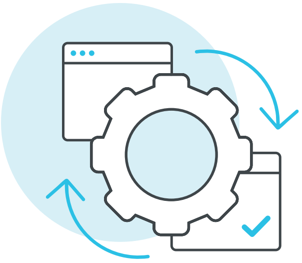
Since more of the process of creating new development environments, deploying changes, testing results, etc is automated, resources and time are saved to embark on creative work that can focus on the core business of each organization, creating real business value for your end customers.

Marketing departments are able to gather more data about how to provide the best experience for their customers - and work experimentally and iteratively to guide their strategy based on their findings.

With a WebOps approach, organizations can truly focus on results-oriented strategies and fewer operational limitations. We highly recommended WebOps for teams who feel like they're stuck in their ways and want to do more with their websites.

In addition, a good WebOps strategy will enable continuous deployments, proactive monitoring, smoother operations, and improved productivity. This is a far cry from "the old way," where a lack of communication, confusion, long wait times, bottlenecks, slow updates, and even outages were frequently occurring.

All of this translates to a better end user experience and another big win for business teams: Better website and app performance. Faster loading times. And improved end user experience.



How to adopt WebOps on your team

Start with a review of your current situation and team structure and infrastructure. Before making any substantial changes to your web processes, take the time to assess and codify how things are currently working.

Identify the areas that are holding the team back, particularly as it pertains to managing, updating and extending your digital properties. Make sure to include a look at your deployment process, since this is often where a large amount of time gets spent, often without realizing there can be a better way.

If your number one roadblock is that too few developers are trying to manage and maintain too many websites and apps, think about ways to ease their burden. Could certain processes be automated? Are legacy servers keeping the website update/ maintenance process slow and laggy?

Once you have a complete picture of why and where your operational web strategy is failing, it's much easier to decide what to do about it. If your number one issue is managing multiple sites on legacy servers, the answer may be simple - it's time to containerize your websites and modernize your hosting solution.

If your developers are overwhelmed with managing dozens of sites and they simply can't keep up with everything, it's worth looking into which processes could be automated.

The quickest answer to both of these hypothetical situations is to invest in containerizing your applications, and to adopt Kubernetes as a part of your web strategy. If you're extremely lucky, you may already have someone on your team with Kubernetes expertise and knowledge. Some leaders may decide to hire Kuberntes experts as an implementation method.

There are also ways for developers on your current team to start learning about Kubernetes and applying it. Learning Kubernetes from scratch is no easy feat, and it could take some significant time - but it's a worthy endeavor.

How amazee.io enables you to do WebOps

The processes, systems, and tooling required to adopt WebOps can be done on your own. We certainly don't discourage trying. However, we also know that many teams don't have the time to hire, train, or recruit Kubernetes experts when the new solution would ideally be implemented yesterday.

For teams that can't wait and want to use Kubernetes as a managed service - amazee.io's managed Kubernetes platform could be a good match for you. Teams can reap the benefits of Kubernetes sooner rather than later, which means getting immediate access to capabilities like automation, faster and more frequent deployments, CI/CD integrations and improvements, and much easier management of numerous sites.

And by working with our experts, developer teams can learn the fundamentals of Kubernetes organically over time through doing.

WebOps platforms delivered "as a service" have a certain level of convenience for busy developers compared to the DIY method. When we say "as a service" we mean it - it's a one step process for developers: Simply push your code, and amazee.io does the rest - building and deploying your application on an infrastructure that is fully maintained, updated, and secured.

It's truly an all-in-one service that leaves the application control in your hands - while we do all the usually time-consuming work, like infrastructure upgrades and fixes, so your team can focus on adding value to your business and customers.

Because we fully embrace containers, our platform supports almost any technology or framework. If you can build it and run it in a container, we can very likely host it on our platform. Many of our global teams love this flexibility.

For advanced or data-sensitive cases, we can run our platform within your chosen infrastructure provider (such as AWS, GCP, etc.). In this setup, your data remains in an environment that you control, so your data sovereignty remains totally intact and entirely under your purview.

The amazee.io WebOps expert team

Our team is composed of some of the foremost Kubernetes and WebOps experts in the world, so your site and applications are guaranteed the attention of the hearts and minds of the absolute best. Our team manages many thousands of workloads on dozens of Kubernetes clusters, of all shapes and sizes and from all vendors, spread physically across the entire globe.

Instead of hiring your own Kubernetes and WebOps team, why not work with ours? Meet our Kubernetes and WebOps experts:

Toby Bellwood / Application Delivery Product Lead

Toby has a unique view of web hosting, because he's seen it from every angle possible: As a user, a maintainer, manager, customer, and a project owner. Toby's journey through full stack engineering has led him from maintaining sites on a hosting platform to managing the entire hosting platform itself. He has firsthand knowledge of the most important things in web hosting - not just for developers, but for stakeholders at all levels.

As Application Delivery Product Lead, Toby works mostly with the internal Lagoon, technical account managers, and developer experience teams. He and his team drive the WebOps that power Lagoon and amazee.io. Toby's role is very much driving ideas, improvement, and continuing to focus heavily on customer experience improvements over time. He oversees a team that works on similar initiatives, along with developing new features and functionalities all the time.

One question Toby has for you: how many people who use a tool fully understand it? He's proud to say that he and his team are on the right side of this answer - they are experts at working with the tools they do, and they use them all day, every day. His team is constantly focused on improvements - whether it's in the way they communicate with each other, or improving processes and workflows. His team is completely dedicated to providing the best WebOps and hosting experience for clients as possible.

Toby and his team have recently completed multiple updates to Lagoon to make it work with Kubernetes 1.22, and they're excited about some upcoming improvements to Kubernetes in the next few releases. His team is working on some preemptive updates to Lagoon now to work best with the coming wave of Kubernetes improvements. They're also rewriting certain components of Lagoon in Golang to perform better, have better scalability, and improve maintenance and contributions.

Bastian Widmer / Global Platform Lead

Bastian is not one to let things idle: they spend a lot of time building and improving amazee.io's platform on various cloud providers and looking for opportunities to ensure stability and scalability. One thing they've always been very focused on is websites and app creation, maintenance, and updates. In past roles, they have run web platforms for government agencies, spearheaded distributed support and operations teams, and even helped build the foundation for amazee.io when the company began in 2015.

Bastian works closely with the platform team that oversees all Kubernetes clusters, which run workloads for amazee.io's customers. They've dabbled quite a bit in technical account management over the past few years as well, so they're deeply informed about common challenges and solutions for amazee.io accounts.

As a results-oriented person, Bastian's ultimate goal at work is to help clients see the results they want - quickly, and without having to learn Kubernetes themselves. Their approach enables clients to understand a few key concepts in order to build applications that work well at scale. They focus on effective problem-solving and challenge resolution to create the solutions that customers are looking for.

Big changes are coming to Kubernetes, and Bastian is on top of the game: Right now, their team is working in several ways to ensure that they stay prepared and equipped for the newest versions of Kubernetes across several cloud providers. They are focused on improving monitoring, provision, and management of all Kubernetes clusters. The Kubernetes ecosystem is undergoing certain changes right now, so the team is incredibly focused on maximizing every part of the platform to stay current.

Part of the reason Kubernetes is so challenging to learn and use is because of these rapid-fire updates, which can be impossible to keep up with unless you dedicate a significant amount of time to it per day - which Bastian and the team are highly focused on.

In Bastian's opinion, Kubernetes is slowly making its way to the mainstream - for very good reasons.

"Kubernetes has given us the ability to scale far beyond what we could have done just a few years ago, based on how our infrastructure was built. It has fundamentally changed concepts that were considered mainstream in our industry years ago," said Bastian. "It's not at all easy, and we have to constantly re-think processes and how we build things, but that's also the beauty of it."

Sean Hamlin / Technical Account Management Lead

Sean has a background in Drupal development and site architecture, and he now specializes in high-performing Drupal. One specific area of expertise is in scaling websites for high-traffic events. He loves working with Kubernetes because of the different possibilities: there are two types of horizontal scaling possible, and he finds this helpful in meeting client needs in the best way. Both methods are entirely elastic and can be configured to be 100% automated, which is preferred by clients.

Sean works with customers in the APAC region and helps them solve their core problems using Lagoon and Kubernetes. He works very closely with the Lagoon and Platform teams, which is helpful for quickly escalating issues or formulating creative solutions for urgent situations. His favorite thing to do at work is to scale customers from one site to several hundred, and dealing with the challenges that may come with that.

Based on what Sean observes over days, weeks, and months, he's always strategizing for improvements. As a future-minded individual, it's important to him to continue improving and growing, since the industry shifts rapidly and customer needs evolve. Over the course of a day, Sean may interact with several hundreds of projects. He's a busy dude.

One of Sean's favorite things about amazee.io? The customer-first mentality. In his opinion, this is a missing piece of the puzzle within other organizations. Here's Sean on the topic: "The technology is neat and ultimately really valuable, but at the end of the day, we are a team of people committed to helping other people do their best every single day."

Something cool that Sean is working on right now: He's currently building an "anomaly detection bot" that will report to Slack daily with any report of an increase in hits to origin over the last business day (or over the usual amount). He's creating this new tool to help improve insights and get them to customers much faster - by the end of the day instead of the end of the month.

A word from our CTO, Michael Schmid

"We built amazee.io and the hosting platform at a time when shared servers were either lacking tools, support, or SSH access, ran outdated PHP versions, or went down at the first spike in traffic. We designed and engineered amazee.io to meet the complex demands of forward-looking developers and engineering teams who needed support for multiple server-side frameworks and languages, as well as the ability to spin up new environments for every pull request.

When you partner with amazee.io, you're gaining not only the talent of a global team specifically focused on helping you adopt a containerization and Kubernetes approach, but you're getting access to a team that has been at the forefront of delivering enterprise-grade WebOps and web application delivery technology for over 10 years."

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Interested in getting started?

Get in touch today.