**https://www.qovery.com/blog/heroku-vs-aws-what-to-choose-in-2022**

**1. Heroku vs. AWS: features**

|  | **Heroku** | **AWS** |
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| **Features** | - Fully flexible runtime environment with smart containers (dynos) system. - Manual horizontal and vertical scaling - Rollback your database or code in no time - App monitoring system to keep track of metrics, like response time, throughput, memory, etc. - Full GitHub Integration | - Multiple deployment options and the ability to roll back to the previous version - Automatic scaling of web apps based on their specific needs and defined conditions. - Quick restart of all app servers by using a single command - App metrics - Direct access to the processor and memory of the underlying server. - AWS Service Integration |
| **Languages** | - Ruby - Java - PHP - Python - Node.js - Go - Scala  - Docker\*  *\*supported but not so simple as it was built before Docker does exist* | - Any language is supported without any limitations but requires advanced knowledge |
| **Addons and services** | - Heroku offers hundreds of addons for various purposes like security, mailing, content management, testing, alerts, notifications. - About 700 pages of one-click-deployment third-party components and libraries are offered on the Heroku platform | - AWS includes over 200 services and more than 2000 features including computing, storage, databases, analytics, networking, mobile, developer tools, management tools, IoT, security, and enterprise applications. |
| **Supported regions** | - Heroku has 2 regions available for apps in the Common Runtime: Europe and USA, and 6 small regions for Private Spaces: Virginia, Oregon, Dublin, Frankfurt, Sydney, and Tokyo. | - AWS is available on a global scale in 190 countries and territories. |
| **VPC** | - Supported with Heroku Enterprise plan and the Shield option. Subscription with a one-year commitment at least. | - AWS includes VPC with no extra costs. |
| **HIPAA and SOC2 compliance** | - Same as for the VPC support. You need to have a Heroku Enterprise with the Shield option. | - AWS includes HIPAA and SOC2 compliance for their services and their infrastructure with no extra effort. E.g: Database encryption, VPC security group, Firewall, IP Static |

Heroku is startup and beginner-friendly and easily integrates with many developer workflows. Its platform allows you to build an application using a customizable, self-regulating framework. This saves you time and money compared to starting an app from scratch. AWS works best with a DevOps engineer or development team since it isn't self-regulating. That gives them more control over the application and its various processes. It can help you build complex and sophisticated apps with multiple deployment options. You can even deploy your app in multiple places around the world at the same time.

**2. Heroku vs. AWS: pricing**

|  | **Heroku** | **AWS** |
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| **Cloud computing** | Dyno:  - standard 4 (30 GB RAM, 750 GB storage) -**$750.00 per month** - performance-m (2.5GB) - **$250.00 per month** - performance-l (14GB) - **$500.00 per month** | EC2:  On-Demand Linux instances:  - t3.micro (1GiB) – $0.0104 per hour - **$7.48 per month** - t3.small (2GiB) – $0.0208 per hour - **$14.98 per month** - c5.2xlarge (16GiB) – $0.34 per hour - **$244.8 per month** |
| **Database** | Heroku Postgres:  - standard 4 (30 GB RAM, 750 GB storage, mono-AZ) **$750.00 per month** | RDS for PostgreSQL:  - db.t3.large (30 GB RAM, 750GB storage, mono-AZ)**$546 per month** |
| **In-memory storage (i.e., cache)** | Heroku Redis:  - Premium-9 (10GB) **$1,450.00 per month** | ElastiCache:  - cache.r4.large (12.3 GiB) – $0.228 per hour - **$164.16 per month** |
| **Object storage** | - Heroku has nothing to offer. They recommend using Amazon [S3](https://aws.amazon.com/s3/) |  |
| **Data streaming** | Apache Kafka:  - Basic-2 - **$175 per month** | KDS:  - 4 shard hours – $0.015 per hour - 527.04 million PUT Payload Units – $0.014 per 1,000,000 units - **$50.58 per month** |
| **Support** | Heroku offers three [support options](https://www.heroku.com/support):  - Standard - **Free** - Premium - **Starts from $1,000** - Enterprise - **Starts from $1,000** | AWS offers four [support plans](https://aws.amazon.com/premiumsupport/pricing/): Basic, Developer, Business, and Enterprise.  - The Basic plan is provided to all customers - For the other plans, the price is calculated according to AWS usage for a particular amount of costs (For example, if you spend $5,000 on Amazon products, the price for support will be $500) |

Heroku gives you more time to focus on building applications but quickly gets expensive, especially when you plan to scale. AWS offers a variety of options and solutions to manage your hosting infrastructure and save the budget.

**3. Heroku vs. AWS: scaling**

|  | **Heroku** | **AWS** |
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| **Scaling capabilities** | - Allows manual horizontal and vertical scaling using the Heroku dashboard or using a command-line interface.  - It also offers autoscaling for [Private Space dynos](https://www.heroku.com/dynos/private-spaces) | - Supports the AutoScale feature and has dedicated services for scaling and reserving computational capacities automatically. |
| **Technical knowledge required** | - Beginner | - Advanced |
| **Cost** | - Low cost when starting a project, very expensive on while scaling. | - High cost when starting a project, cost-effective while scaling. |

Both Heroku and AWS allow for scalability; the main difference is in the degree of technical knowledge required to scale up or down. In addition, deciding whether to scale with AWS or Heroku will include a significant cost difference.

**4. Heroku vs. AWS: Developer Experience**

|  | **Heroku** | **AWS** |
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| **Documentation** | - Comprehensive documentation with step-by-step guides for every first-class language support and all Heroku essentials | - Every service of AWS is documented and comes with tutorials for various cases. Can become tedious to digest and time consuming |
| **Deployment speed** | - Quick deployment. To deploy an app on Heroku often need less than 30 minutes.  - Offers a ready-to-use environment that allows deploying the code fast | - The deployment process with AWS is quite complex, and launching multiple app instances for an app with the average workload can take a serious amount of time and requires skills. |
| **Deployment Flexibility** | - A self-regulating framework leads to less flexibility compared to IaaS platform opportunities. | - AWS provides developers with tools that give them full control over resources. |
| **Technical knowledge required** | - Beginner | - Advanced |

**https://railsware.com/blog/heroku-vs-aws-which-paas-hosting-to-choose/**

Cloud computing

At Mailtrap, we use a set of the on-demand Linux instances including m4.large, c5.xlarge, r4.2xlarge, and others. They differ in memory and CPU characteristics as well as prices. For example, c5.xlarge provides 8GiB of memory and 4 vCPU for $0.17 per hour. As for Heroku, there are only six dyno types with the most powerful one offering 14GB of memory. Therefore, we decided to pick the more or less identical instances and calculate their costs per month.

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|  | **AWS** | **Heroku** |
| Cloud computing | [EC2](https://aws.amazon.com/ec2/pricing/on-demand/) On-Demand Linux instances:   * t3.micro (1GiB) – $0.0104 per hour $7.48 per month * t3.small (2GiB) – $0.0208 per hour $14.98 per month * c5.2xlarge (16GiB) – $0.34 per hour $244.8 per month | [Dyno](https://www.heroku.com/pricing):   * standard-2x (1024MB) $50.00 per month * performance-m (2.5GB) $250.00 per month * performance-l (14GB) $500.00 per month |
| The computing cloud costs for Mailtrap per month are almost $2,000 based on eight different AWS instances with the memory characteristics from 4GiB to 122 GiB, the costs for [Elastic Load Balancing](https://aws.amazon.com/elasticloadbalancing/), and [Data Transfer](https://aws.amazon.com/govcloud-us/pricing/data-transfer/). Even if we chose the largest Heroku dyno, Performance-l, the costs would amount to $4,000 per month! It is important also to mention that Heroku cannot satisfy the need for heavy-computing capacity because the largest dyno is limited to 14GB of RAM. | | |

Database

For the database-related purposes, both hosting providers offer powerful suite of tools – [Relational Database Service](https://aws.amazon.com/rds/postgresql/pricing/) (RDS) for PostgreSQL and [Heroku Postgres](https://www.heroku.com/pricing#postgres-pricing) correspondingly. We picked two almost equal instances to show you the price difference.

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|  | **AWS** | **Heroku** |
| Database | RDS for PostgreSQL: db.r4.xlarge (30.5 GiB) – $0.48 per hour $345.6 per month + EBS Provisioned IOPS SSD (io1) volumes – $0.125 per GB $439.35 per month (at the rate of 750GB storage) | Heroku Postgres: Standard 4 (30 GB RAM, 750 GB storage) $750.00 per month |
| In addition to RDS instance, you will have to choose an [Elastic Block Store](https://aws.amazon.com/ebs/?nc=sn&loc=1) (EBS) option, which refers to HDD or SSD volume. At Mailtrap, the EBS costs are almost $600 per month. | | |

In-memory data store

Both providers offer managed solutions to seamlessly deploy, run, and scale in-memory data stores. Everything is simple to compare. We took an [ElastiCache](https://aws.amazon.com/elasticache/pricing/" \t "_blank) instance used at Mailtrap and set it against the most relevant solution by [Heroku Redis](https://elements.heroku.com/addons/heroku-redis). Here is what we’ve got.

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|  | **AWS** | **Heroku** |
| In-memory storage (i.e., cache) | ElastiCache: cache.r4.large (12.3 GiB) – $0.228 per hour $164.16 per month | Heroku Redis: Premium-9 (10GB) $1,450.00 per month |

Main storage

As the main storage for files, backups, etc., Heroku has nothing to offer, and they recommend using Amazon [S3](https://aws.amazon.com/s3/). You can make the integration between S3 and Heroku seamless thanks to using an add-on like [Bucketeer](https://elements.heroku.com/addons/bucketeer" \t "_blank). In this case, the main storage costs will be equal for both PaaS (except for the fact that you’ll have to pay for the chosen add-on on Heroku). At Mailtrap, we use a Standard Storage instance “First 50 TB / Month – $0.023 per GB”, as well as instances “PUT, COPY, POST, or LIST Requests – $0.005 per 1,000” and “GET, SELECT and all other Requests – $0.0004 per 1,000”. All in all, the costs are a bit more than $800 per month.

Data streaming

Though this point has no relation to Mailtrap hosting, we decided to show the options provided by AWS and Heroku in terms of real-time data streaming. Amazon can boast of [Kinesis Data Streams](https://aws.amazon.com/kinesis/data-streams/) (KDS), and Heroku has [Apache Kafka](https://elements.heroku.com/addons/heroku-kafka). The latter is simple to calculate since you need to choose one of the options available (basic, standard or extended) depending on the required capacity. With KDS, you’ll have to either rack your brains or leverage [Simple Monthly Calculator](https://calculator.s3.amazonaws.com/index.html). That’s what we’ve got for 4MB/sec data input.

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|  | **AWS** | **Heroku** |
| Data streaming services | KDS: 4 shard hours – $0.015 per hour 527.04 million PUT Payload Units – $0.014 per 1,000,000 units $50.58 per month | Apache Kafka: Basic-2 $175 per month |

Support

Heroku offers three [support options](https://www.heroku.com/support) – Standard, Premium, and Enterprise. The former is free, while the price for the latter two starts from $1,000. As for AWS, there are four [support plans](https://aws.amazon.com/premiumsupport/pricing/) – Basic, Developer, Business, and Enterprise. The Basic one is provided to all customers, while the price for the others is calculated according to AWS usage for a particular amount of costs. For example, if you spend $5,000 on Amazon products, the price for support will be $500.

Total

Now, let’s sum up all the expenses and see how much we would have paid if Mailtrap was hosted on Heroku.

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|  | **AWS** | **Heroku** |
| Cloud computing Database In-memory data store Main storage \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Total | $2,000.00 $600.00 $164.16 $800 \_\_\_\_\_\_\_\_\_\_\_\_\_ $3,564.16 | $4,000.00 $750.00 $1,450.00 $800 \_\_\_\_\_\_\_\_\_\_\_\_\_ $7,000.00 |

These figures are rough, but they fairly present the idea that less haste with infrastructure management is rather pricey. Heroku gives you more time to focus on app creation but drains purse. AWS offers a variety of options and solutions to manage your hosting infrastructure and definitely saves the budget.

Comparison table

Below we compared the most relevant points of the two cloud hosting providers.

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| **PaaS** | **AWS Elastic Beanstalk** | **Heroku** |
| **Service-owner** | Amazon | Salesforce |
| **Servers** | Proprietary | AWS servers |
| **Programming language support** | Ruby Java PHP Python Node.js .NET Go Docker | Ruby Java PHP Python Node.js Go Scala Clojure |
| **Key features** | AWS Service Integration Customization Capacity Provisioning Load Balancing Auto-scaling App Health Dashboard Automatic update App metrics | Heroku runtime Heroku PostgreSQL Add-ons Data clips Heroku Redis App metrics Code and data rollback Extensibility Smart containers (dynos) Continuous delivery Auto-scaling Full GitHub Integration |
| **Management & monitoring tools** | Management Console Command Line Interface (AWS CLI) Visual Studio Eclipse CloudWatch X-Ray | Command Line Application Metrics Connect Status |
| **Featured customers** | BMW, Samsung Business, GeoNet | Toyota, Thinking Capital, Zenrez |

Why use Heroku web hosting

In practice, this hosting provider offers a lot of benefits like a lightning fast server set up (using the command line, you can make it within 10 sec), easy deployment with Git Push, a plethora of add-ons to optimize the work, and versatile auxiliary tools like Redis and Docker. A free tier is also a good option for those who want to try or experiment with cloud computing. Moreover, since January 2017, auto-scaling has been available for web dynos.

It’s undisputed that Heroku cloud is great for beginners. Moreover, it may be good for low-budget projects due to the lack of DevOps costs needed to set up the infrastructure (and potentially hire someone to do this). However, many startups choose this provider as a launching pad due to its supreme simplicity in operation.

Why choose Amazon Web Services

This solution is more attractive in terms of cost-efficiency. At the same time, it loses out as for usability. Users can enjoy a tremendous amount of features and products for web hosting provided by Amazon. It’s easy to set up and deploy, and definitely provides everything that Heroku does but for less money. However, Elastic Beanstalk is not as easy-to-use as its direct competitor.

Numerous supplementary products like AWS Lightsail, which was described in our blog post dedicated to [Ruby on Rails hosting providers](https://railsware.com/blog/ruby-on-rails-hosting-providers-for-your-application/), Lambda, EC2, and others let you enhance your app hosting options and control your cloud infrastructure. At the same time, they usually require DevOps skills to use them.

The Verdict

So, which provider is worth your while – Heroku servers that are attractive in terms of usability and beginner-friendliness or AWS products that are cheaper but more intricate in use?

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| **Heroku is the option for:** | **AWS is the option for:** |
| * startups; * those who prioritize time over money; * those who prefer dealing with creating an app rather than devoting yourself to infrastructure mundane tasks; * those whose goal is to deploy and test an MVP; * products needed to be constantly updated; * those who do not plan to spend money on hiring DevOps engineers. | * those who have already worked with Amazon web products; * those who want to avoid numerous tasks related to app deployment; * those whose goal is to build a flexible infrastructure; * those who have strong DevOps skills or ready to hire the corresponding professionals; * projects requiring huge computing power. |