



**TASK**

# Next.js III: Deployment

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# Introduction

## WELCOME TO THE NEXT.JS DEPLOYMENT TASK!

In this task, you will learn to deploy your Next.js application. When deploying your app, it is possible to build serverless lambdas. You will learn more about lambdas in this task.



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**Connect for support**

Remember that with our courses, you're not alone! You can contact an expert code reviewer to get support on any aspect of your course.

The best way to get help is to login to Discord at <https://discord.com/invite/hyperdev> where our specialist team is ready to support you.

Our team is happy to offer you support that is tailored to your individual career or education needs. Do not hesitate to ask a question or for additional support!






There are two key terms you should know before you start going through the steps to deploy your app: Lambdas and Vercel.

## LAMBIDAS

An important trend in web development is *serverless architecture*. Obviously, every web application needs to be hosted on a server! Therefore, the term serverless doesn't mean that there is no server. Rather it has to do with the fact that with a serverless architecture, services that are typically provided by a server are accessed using cloud computing. In this way, serverless is related to platform as a service (PaaS).

Let's briefly recap what we mean by PaaS. In order for your application to work, it needs to be supported by appropriate infrastructure and platform. IT infrastructure refers to the physical and virtual resources that form the basis of Information and Communications Technology (ICT). Examples of IT infrastructure include web servers, database servers, hard drives and other forms of storage. Platform sits on top of infrastructure and refers to the software that interfaces directly with the infrastructure to make it work. It provides a layer between the application software (e.g. MS word, Gmail and the applications you have built) and the infrastructure. Examples of platform include your operating system (OS) and development tools like Node.js.

<p>Application software</p> 	<p>End users use these applications. The programmes you have learned to build are examples of application software.</p>
<p>Platform</p> 	<p>Platform sits on top of infrastructure. Platform is the software that interfaces directly with the infrastructure to make it work as you would like. It provides a layer between the application software (e.g. MS word, Gmail and the applications you have built) and the infrastructure.</p>
<p>Infrastructure</p> 	<p>IT infrastructure is a term used to describe the physical and virtual resources that form the basis of ICT. Examples of IT infrastructure include web servers, database servers, hard drives and other forms of storage.</p>

Cloud computing has allowed us to use infrastructure and platform provided by cloud service providers across the internet as opposed to having to rely on our own physical servers that we have to set up and configure with the necessary platform. Heroku is an example of a cloud solution that provides a platform as a service (PaaS). Heroku allows us to use virtual platform and infrastructure resources that are maintained by the owners of Heroku to host our web applications.

Basically, serverless architecture takes PaaS a step further. With a serverless architecture, you don't even need to worry about configuring virtual PaaS resources. Serverless computing services run units of code that carry out a single task. This is often referred to as a *function as a service (FaaS)*. Therefore, serverless deployment splits your application into *lambdas*: smaller units of code. These lambdas have no dependencies on any other code and as such can be deployed and executed wherever and whenever they are needed. The Lambda function runs on relevant infrastructure as a service (IaaS) and PaaS every time a relevant event is fired.

Two important benefits of serverless deployment are that it improves the reliability and scalability of your app. Lambdas allow your code to be executed on-demand, and scale automatically.



### Extra resource

Listen to this [very interesting Podcast](#) in which Guillermo Rauch, the founder of Vercel, discusses serverless architecture and other important trends in web development.

AWS is one of the companies that has made serverless computing and the term lambda popular. Watch [this short \(3 min\) video](#) that gives an overview of AWS lambdas.

## VERCEL

Vercel (previously known as Zeit) is the company that developed and maintains Next.js. [They describe](#) Vercel as “a cloud platform for static sites and Serverless Functions that fits perfectly with your workflow. It enables developers to host Jamstack websites and web services that deploy instantly, scale automatically, and require no supervision, all with no configuration.”

You can deploy Next.js apps to any environment that supports Node but to give you some exposure to serverless computing and a different deployment platform, we will focus mainly on deploying Next.js apps to Vercel in this task.

### SPOT CHECK 1

Let's see what you can remember from this section.

1. What are lambdas?
2. What is Vercel?

## DEPLOYING A NEXT.JS APP WITH VERCEL

To deploy the app, simply follow these steps:

1. Build your app. To do this:
  - a. Specify a build script in your **package.json** file.

```
"scripts": {  
  "build": "next build"  
}
```

- b. Build the app by typing **npm run build** into the command line interface.
2. Start your app to do server side rendering and serve pages with the app that you have just built. To do this:
  - a. Make sure that you have a start script specified in package.json.

```
"scripts": {  
  "start": "next start"  
}
```

- b. Start the app: **npm run start**
3. To build the app with Vercel:
  - a. Add the "now-build" script shown below to package.json.

```
"scripts": {
```

```
"build": "next build",  
"now-build": "next build"  
}
```

- b. Create a file called **next.config.js** that contains the code below in the root of the project.

```
module.exports = {  
  target: 'serverless'  
}
```

- c. Create a file called **now.json** in the root of your project with the following contents:

```
{  
  "version": 2,  
  "builds": [{ "src": "package.json", "use": "@now/next" }]  
}
```

4. Install Vercel by following the instructions [here](#). Don't worry — [it's free](#) for limited use.
5. Deploy the app by typing: **now**
6. Once the app is deployed, you will receive a deployment URL similar to the following: <https://nextjs-8fnzfb1ci.now.sh>



### Take note:

Having problems with deployment using these steps? As you know, in web development things change very quickly. Check to see whether the instructions have been recently updated [here](#).

## DEPLOYING YOUR APP WITH HEROKU

The steps for deploying your Next.js app to Heroku are similar to the steps for deploying other apps to Heroku. There is a difference between how you deploy a Next.js app with or without a custom Express server. For detailed guidelines for deployment to Heroku, see the resources below:

- Deploy a Next.js app:  
<https://github.com/mars/heroku-nextjs#production-deployment>
- Deploy a Next.js app with a custom Express server:  
<https://github.com/mars/heroku-nextjs-custom-server-express>

## Compulsory Task

Follow these steps:

- Deploy the developer portfolio you created using Next.js in a previous task to Vercel.

If you are having any difficulties, please feel free to contact our specialist team [on Discord](#) for support.

## Optional Bonus Task

Follow these steps:

- Deploy any other applications that you have created and would like to add to your developer portfolio to any platform you wish. Update your developer portfolio with any projects that you would like to showcase.

## Completed the task(s)?

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### SPOT CHECK 1 ANSWERS

1. *Lambdas* are smaller units of code that have no dependencies on any other code and as such can be deployed and executed wherever and whenever they are needed. Lambdas allow your code to be executed on-demand and scale automatically.
2. Vercel is “a cloud platform for static sites and Serverless Functions that fits perfectly with your workflow. It enables developers to host Jamstack websites and web services that deploy instantly, scale automatically, and require no supervision, all with no configuration.”