

# Deploying Estuary on a cloud virtual machine

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This wiki page shows the basic steps to build Estuary on a cloud virtual machine. For this wiki tutorial, I will be using Digital Ocean (<https://www.digitalocean.com/>) and Ubuntu 18.04.

## Why building Estuary on a cloud virtual machine?

Estuary is always available at [estuary.mcmaster.ca](http://estuary.mcmaster.ca), but there could be some circumstances where having Estuary deployed on a cloud server could be useful. For example:

1. If you are making last-minute tweaks to your forked version of Estuary and you're unable to wait for your pull request to be integrated into the Estuary's main repository. This has happened to me, especially when teaching workshops where people were developing their own languages.
2. If you are developing an installation with Estuary and want to have full control over the aesthetics of the interface and its resources.

## Why use a paid cloud service?

Digital Ocean is a cloud service provider that allows you to use a virtual computer with a Linux-based OS. Although using a private service might not go with the Free/Libre Open Source "spirit" of Estuary, I found it useful when you're unsure about setting up a free home server. Cloud servers also allow you to increase/decrease the virtual computer memory, thus supporting more people - than a home server - to get connected. I usually pay around between \$10-15 per month (also, Digital Ocean charges you by the hour so you can use it for a day or less without being charged for all the month).

## Setting up the virtual computer

1. Make an account in Digital Ocean and log in.

- Once you're logged in go to the left menu and click Projects -> New Project.
- You'll be taken to a "Create project" screen where you have to fill the name, description, and the purpose of your project.

Search by resource name or IP (Ctrl+B) Create USAGE \$0.00

1 Create Project 2 Move Resources

### Create new project

Name your project

Enter name  
my-estuary ✓

Add a description  
Helpful for teams or differentiating between projects with similar names.

Enter description  
my own version of Estuary

Tell us what it's for  
This will help us to provide a more relevant experience.

Web Application

Create Project

- After clicking "Create project", you'll be taken to the "Move sources" screen, just click "skip for now".
- Now you'll be asked to build a "droplet", that is a Linux-based virtual computer. Click "Get started with a Droplet".
- Here you have to select the virtual computer's characteristics. Select Ubuntu for the OS and the \$10 "standard" plan (Selecting a lower cost plan will allow you to increase the memory anytime and decrease it back to the one provided by the \$10 plan).

Search by resource name or IP (Ctrl+B) Create USAGE \$0.00

Distributions Container distributions Marketplace Custom images

Ubuntu 18.04.3 (LTS) x64

FreeBSD Select version

Fedora Select version

Debian Select version

CentOS Select version

### Choose a plan

Help me choose

STARTER PERFORMANCE

Standard General Purpose CPU-Optimized Memory-Optimized NEW

Standard virtual machines with a mix of memory and compute resources. Best for small projects that can handle variable levels of CPU performance, like blogs, web apps and dev/test environments.

\$5/mo \$0.007/hour	\$10/mo \$0.015/hour	\$15/mo \$0.022/hour	\$15/mo \$0.022/hour	\$15/mo \$0.022/hour	\$20/mo \$0.030/hour
1 GB / 1 CPU 25 GB SSD disk 1000 GB transfer	2 GB / 1 CPU 50 GB SSD disk 2 TB transfer	1 GB / 3 CPUs 60 GB SSD disk 3 TB transfer	2 GB / 2 CPUs 60 GB SSD disk 3 TB transfer	3 GB / 1 CPU 60 GB SSD disk 3 TB transfer	4 GB / 2 CPUs 80 GB SSD disk 4 TB transfer

- If you scroll down you'll see more customization options but for now, just go to the bottom of the page and click "Create droplet". Here is a link that describes the droplet customization in detail:

<https://www.digitalocean.com/docs/droplets/how-to/create/>

Q Search by resource name or IP (Ctrl+B) Create v USAGE \$0.00

### Finalize and create

**How many Droplets?**  
Deploy multiple Droplets with the same [configuration](#).

1 Droplet

**Choose a hostname**  
Give your Droplets an identifying name you will remember them by. Your Droplet name can only contain alphanumeric characters, dashes, and periods.

Estuary

**Add tags**  
Use tags to organize and relate resources. Tags may contain letters, numbers, colons, dashes, and underscores.

Type tags here

**Select Project**  
Assign Droplets to a project

my-estuary

**Add backups**

☐ **Enable backups** RECOMMENDED \$2.00/mo (per Droplet)  
A [system-level backup](#) is taken once a week, and each backup is retained for 4 weeks. 20% of the Droplet price

Create Droplet

## Setting up the root user

1. Click on the three dots to the right of your newly created droplet.
2. Click "Access console" from the dropdown menu.

Q Search by resource name or IP (Ctrl+B) Create v USAGE \$0.00

**my-estuary**  
Web Application / my own version of Estuary

→ Move Resources

**Resources** Activity Settings

**DROPLETS (1)**

Estuary	159.203.3.64
<div> <span>⋮</span> <ul style="list-style-type: none"> <li>Add a domain</li> <li>Access console</li> <li>Resize droplet</li> <li>View usage</li> <li>Enable backups</li> <li>Add tags</li> <li>Move to...</li> <li>Destroy</li> </ul> </div>	

**Create something new**

- Create a Managed Database**  
Worry-free database management
- Start using Spaces**  
Deliver data with scalable object storage
- Spin up a Load Balancer**  
Distribute traffic between multiple Droplets

**Build on what you have**

- Add a disk to your Droplet**  
Create a block storage volume
- Take a snapshot**  
Make on-demand copies of Droplets
- Start using Floating IPs**  
Redirect Droplet traffic quickly
- Manage DNS on DigitalOcean**  
Manage DNS and resources in one place
- Secure your Droplets**  
Create a cloud firewall
- Track more Droplet metrics**  
Enable the DigitalOcean agent

**Learn more**

- Product Docs**  
Technical overviews, how-tos, support material
- Tutorials**  
DevOps and development guides
- API Docs**  
Run your resources programmatically
- Ask a question**  
Connect, share and learn

3. Once in the console, type "root" to log in, then copy the default password sent to your email by Digital Ocean and paste it onto the terminal. Customize your password when you're prompted to change the password.

## Setting up a sudo user

Estuary requires you to install Nix (<https://nixos.org/nix/>). You'll need to create a sudo user to install Nix as installing it as "root" is not supported by the Nix's default script. Do the following:

1. In the console type `adduser` and a username right after. Like this:

```
root@Estuary:~# adduser luis
Adding user `luis' ...
Adding new group `luis' (1000) ...
Adding new user `luis' (1000) with group `luis' ...
Creating home directory `/home/luis' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for luis
Enter the new value, or press ENTER for the default
  Full Name []: 
```

2. Set up your new user's password and follow the prompts to set the user's information.
3. Type `usermod -aG sudo` and the new username to add the user to the sudo group (this will give you administrator access to install Nix and Estuary).

```
root@Estuary:~# usermod -aG sudo luis
root@Estuary:~# 
```

## Installing Nix

---

Still in the droplet's console do the following:

1. Switch from root to your user by typing `su -` and your username.

```
Last login: Fri Feb 21 22:25:16 2020 from 149.248.115.227
root@Estuary:~# su - luis
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

luis@Estuary:~$ 
```

2. Install Nix by typing `curl -L https://nixos.org/nix/install | sh`
3. Reboot the virtual computer by typing `sudo reboot` to update the path to Nix.
4. Once it is rebooted switch back to your user and type `which nix` to confirm that Nix is in the virtual computer's path. If the console returns a path to Nix, you're good to go!

```
luis@estuary:~$ which nix
/home/luis/.nix-profile/bin/nix
```

## Building Estuary

---

1. Clone your forked version of Estuary into your virtual machine.

```
luis@estuary:~$ git clone https://github.com/luisnavarrodelangel/estuary.git
Cloning into 'estuary'...
remote: Enumerating objects: 226, done.
remote: Counting objects: 100% (226/226), done.
remote: Compressing objects: 100% (116/116), done.
remote: Total 12695 (delta 132), reused 161 (delta 83), pack-reused 12469
Receiving objects: 100% (12695/12695), 17.06 MiB | 16.33 MiB/s, done.
Resolving deltas: 100% (8408/8408), done.
```

2. Install make by typing `sudo apt install make`.

3. There are different ways of building Estuary

(<https://github.com/dktr0/estuary/blob/master/BUILDING.md>), but I usually do it the following way (type them once at a time):

```
cd estuary
```

```
make fullBuild
```

```
make selfCertificates
```

```
make runServer
```

hello



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Why use a paid cloud service?

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Building Estuary

+ Add a custom sidebar

## Clone this wiki locally

<https://github.com/dktr0/estuary.wiki.git>

