

# Final Demo

ChCC-06-DevOps

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**softserve**



Leaders Business Need						
	2014	2015	2016	2017	2018	5 Years Total
Delivery Requirement	324M	481M	595M	794M	72M	3161M
Managers Requirement						
Initial	52	62	70	70	70	344
Total	287	346	56	276	299	1108
Delta	235	284	47	206	229	1064
Total	376	497	471	512	519	2494
Avg M per Year	75	99	100	100	100	100
Avg D per Year	58	62	37	55	59	54
Avg T per Year	93	101	50	101	101	101

# Bash

**1 task: folder tree**

**2 task: files copying**



Vladyslav Boreiko

```
wlados@DELL-G7-7588:~/Documents$ tree Boreiko/
Boreiko/
├── KKK
│   ├── GR1
│   │   └── Boreiko.txt
│   └── GR2
│       └── Vladyslav.txt
└── LLL
    └── MM

5 directories, 2 files
wlados@DELL-G7-7588:~/Documents$
```

```
23 scheme 5.
24
25 tree_patern=" \
26 Boreiko/{\
27 KKK/{GR1,GR2},\
28 LLL,\
29 MM\
30 }"
31
32 mkdir -p Boreiko/{KKK/{GR1,GR2},LLL,MM}
```

**task 1**

```
wlados@DELL-G7-7588:~/Documents$ tree Boreiko/
Boreiko/
├── Boreiko.txt
├── KKK
│   ├── GR1
│   │   └── Boreiko.txt
│   └── GR2
│       └── Vladyslav.txt
└── LLL
    └── MM
        └── Vladyslav.txt

5 directories, 4 files
wlados@DELL-G7-7588:~/Documents$
```

```
23 scheme 5.
24
25 tree_patern=" \
26 Boreiko/{\
27 KKK/{GR1,GR2},\
28 LLL,\
29 MM\
30 }"
31
32 mkdir -p Boreiko/{KKK/{GR1,GR2},LLL,MM}
```

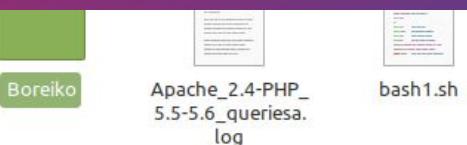
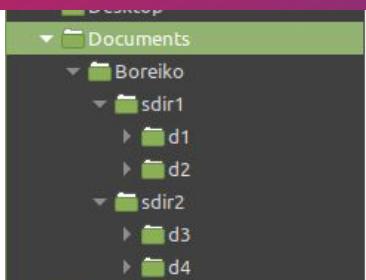
**task 2**

**softserve**

# Bash (my version)

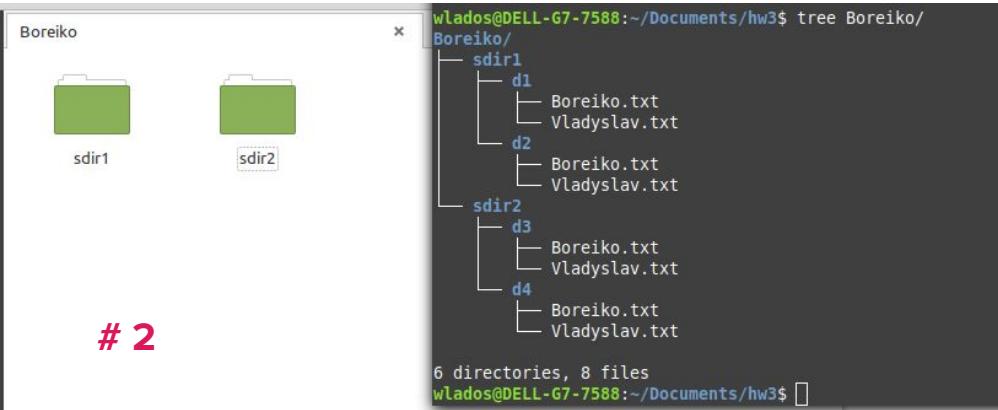
1 task: folder tree

2 task: files copying (multiple files with same name)

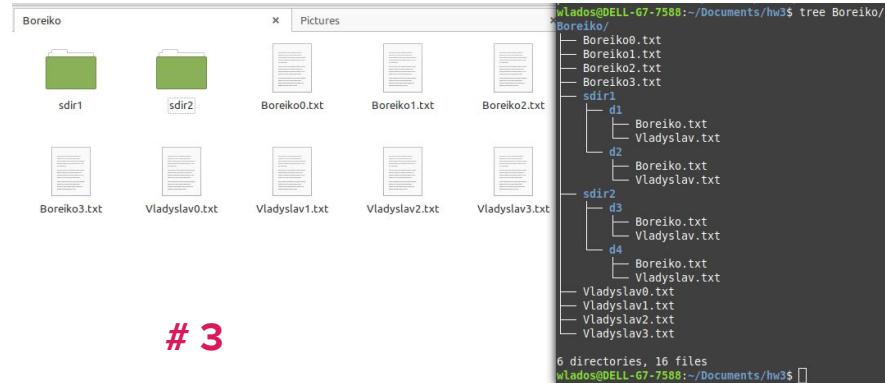


# 1

```
wlados@DELL-G7-7588:~/Documents$ ./bash1.sh
Tree ./Boreiko is here
Recreate existing tree ? (Y/N)
y
Creating tree...
path to leaf folder: ./Boreiko/sdir1/d1 - with files: Vladyslav and Boreiko
path to leaf folder: ./Boreiko/sdir1/d2 - with files: Vladyslav and Boreiko
path to leaf folder: ./Boreiko/sdir2/d3 - with files: Vladyslav and Boreiko
path to leaf folder: ./Boreiko/sdir2/d4 - with files: Vladyslav and Boreiko
wlados@DELL-G7-7588:~/Documents$
```



# 2



# 3

softserve

# Bash

## 3 task: validating email address

valid address

A screenshot of a terminal window titled "Bash". The window has three tabs: "others\_schemes.txt", "info.txt", and "Boreiko0.txt". The "Boreiko0.txt" tab is active. The command entered is "wlados@DELL-G7-7588:~/Documents/hw3\$ ./bash3.sh Boreiko/Boreiko0.txt". The output shows the address "1 wlad1324@gmail.com" and a message indicating it is a valid e-mail address.

```
wlados@DELL-G7-7588:~/Documents/hw3$ ./bash3.sh Boreiko/Boreiko0.txt
e-mail address wlad1324@gmail.com is valid.
wlados@DELL-G7-7588:~/Documents/hw3$
```

invalid address

A screenshot of a terminal window titled "Bash". The window has three tabs: "others\_schemes.txt", "info.txt", and "Boreiko0.txt". The "Boreiko0.txt" tab is active. The command entered is "wlados@DELL-G7-7588:~/Documents/hw3\$ ./bash3.sh Boreiko/Boreiko0.txt". The output shows the address "1 wlad1324@gmailcom" and a message indicating it is an invalid e-mail address.

```
wlados@DELL-G7-7588:~/Documents/hw3$ ./bash3.sh Boreiko/Boreiko0.txt
e-mail address wlad1324@gmailcom is invalid.
wlados@DELL-G7-7588:~/Documents/hw3$
```

# Bash

## 4 task: count+output “404” message from .log

count of '404 error': 44

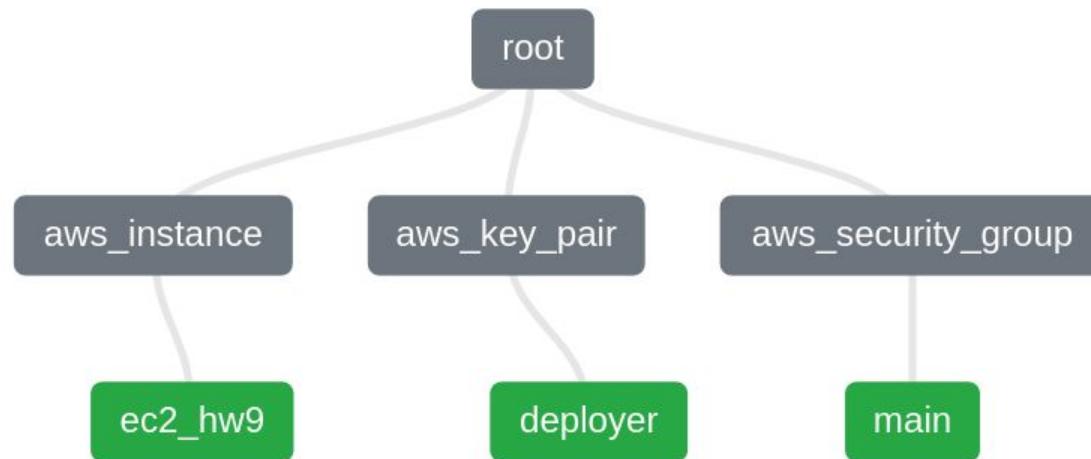
wlados@DELL-G7-7588:~/Documents\$



softserve

# Ansible

Terraform + Ansible + AWS + Bash



# Ansible

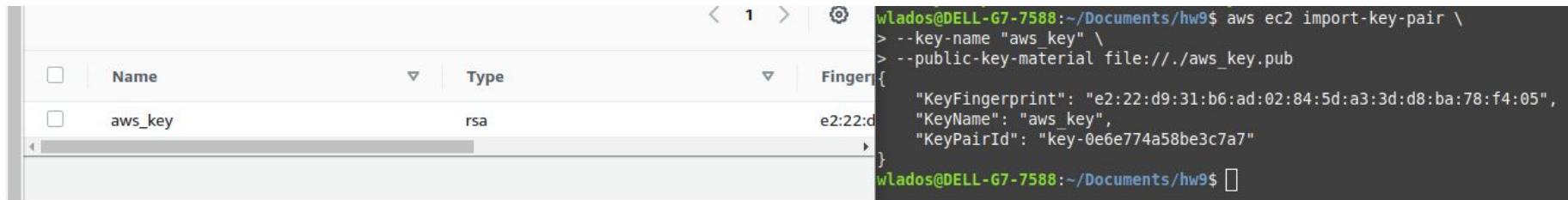
## Ansible

```
wlados@DELL-G7-7588:~$ ansible --version
ansible 2.9.6
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/home/wlados/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  executable location = /usr/bin/ansible
  python version = 3.8.10 (default, Sep 28 2021, 16:10:42) [GCC 9.3.0]
wlados@DELL-G7-7588:~$ 
```

Bluetooth 🔍 🌐 🖨️ 📁 🇺🇸 (Sat 18.12.21) - 02:12

# Ansible

## AWS: first steps

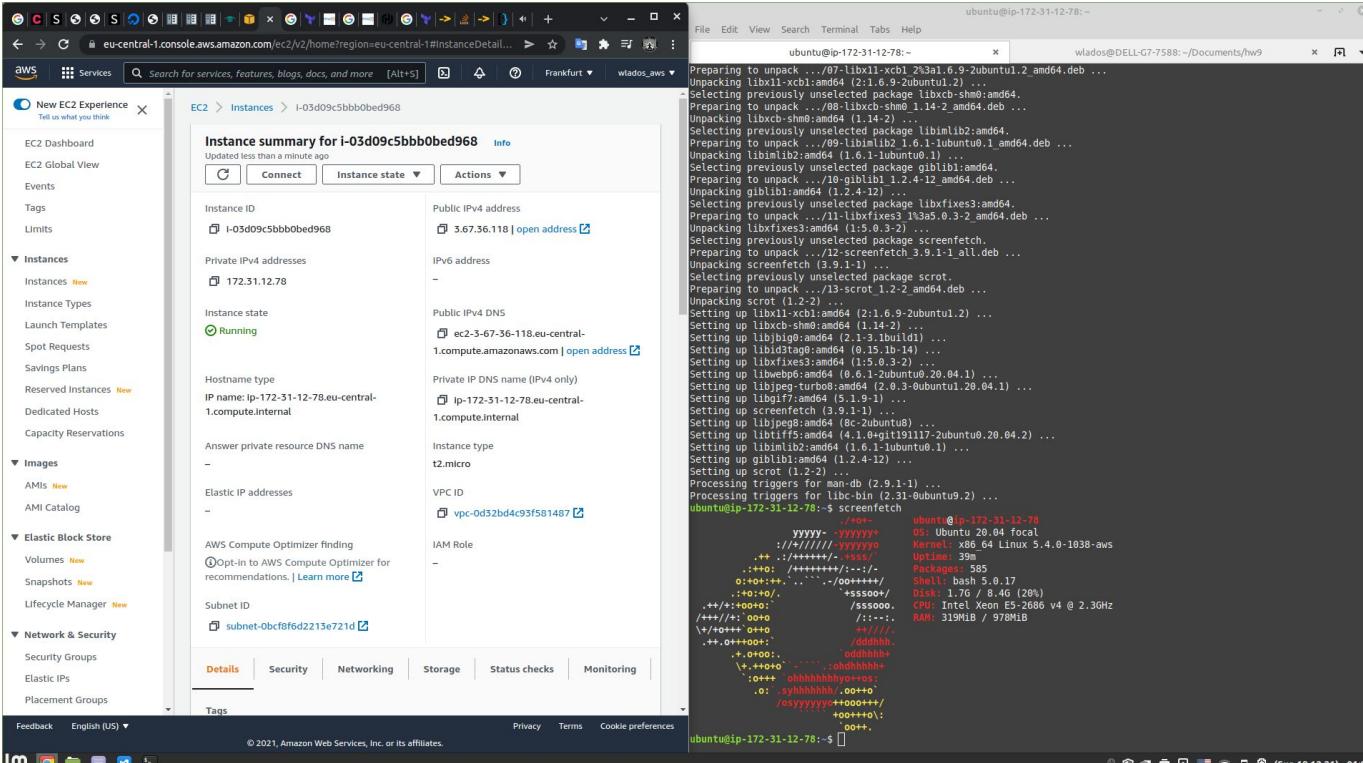


The screenshot shows a terminal window with the following command and its output:

```
wlados@DELL-G7-7588:~/Documents/hw9$ aws ec2 import-key-pair \
> --key-name "aws_key" \
> --public-key-material file:///aws_key.pub
{
    "KeyFingerprint": "e2:22:d9:31:b6:ad:02:84:5d:a3:3d:d8:ba:78:f4:05",
    "KeyName": "aws_key",
    "KeyPairId": "key-0e6e774a58be3c7a7"
}
wlados@DELL-G7-7588:~/Documents/hw9$
```

# Ansible

# Manually: accessing via SSH



# Ansible

## Manually: nginx

The screenshot shows a terminal window titled "ubuntu@ip-172-31-12-78:/etc/nginx/conf.d". The terminal displays the following steps:

- Creation of a default configuration file: touch default.conf
- Execution of sudo command: sudo touch default.conf
- Listing of files in /etc/nginx/conf.d: ls
- Nano editor used to edit default.conf: nano default.conf
- Execution of sudo command: sudo nano default.conf
- Listing of files in /var/www/html: ls /var/www/html/
- Index.nginx-debian file created: index.nginx-debian
- sudo command to restart nginx: sudo nano default.conf
- sudo command to restart nginx: sudo service nginx restart
- nginx status checked: service nginx status
- nginx.service details:● nginx.service - A high performance web server and a reverse proxy server  
Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor preset: enabled)  
Active: active (running) since Sat 2021-12-18 23:52:41 UTC; 8s ago  
Docs: man:nginx(8)  
Process: 14917 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master\_process on; (code=exited, status=0/SUCCESS)  
Process: 14916 ExecStart=/usr/sbin/nginx -g daemon on; master\_process on; (code=exited, status=0/SUCCESS)  
Main PID: 14917 (nginx)  
Tasks: 2 (limit: 1160)  
Memory: 2.7M  
CGroup: /system.slice/nginx.service  
└─14917 nginx master process /usr/sbin/nginx -g daemon on; master\_process on;  
 ├─14918 nginx: worker process
- Systemctl logs: Dec 18 23:52:41 ip-172-31-12-78 systemd[1]: Starting A high performance web server and a reverse proxy server...  
Dec 18 23:52:41 ip-172-31-12-78 systemd[1]: Started A high performance web server and a reverse proxy server.
- cat command to view index.nginx-debian.html content:  
<!DOCTYPE html>  
<html>  
<head>  
<title>Welcome to nginx!</title>  
<style>  
 body {  
 width: 35em;  
 margin: 0 auto;  
 font-family: Tahoma, Verdana, Arial, sans-serif;  
 }  
</style>  
</head>  
<body>  
<h1>Welcome to nginx!</h1>  
<p>If you see this page, the nginx web server is successfully installed and working. Further configuration is required.</p>  
<p>For online documentation and support please refer to  
<a href="http://nginx.org">nginx.org</a>.<br/>  
Commercial support is available at  
<a href="http://nginx.com">nginx.com</a>.</p>  
<p><em>Thank you for using nginx.</em></p>  
</body>  
</html>

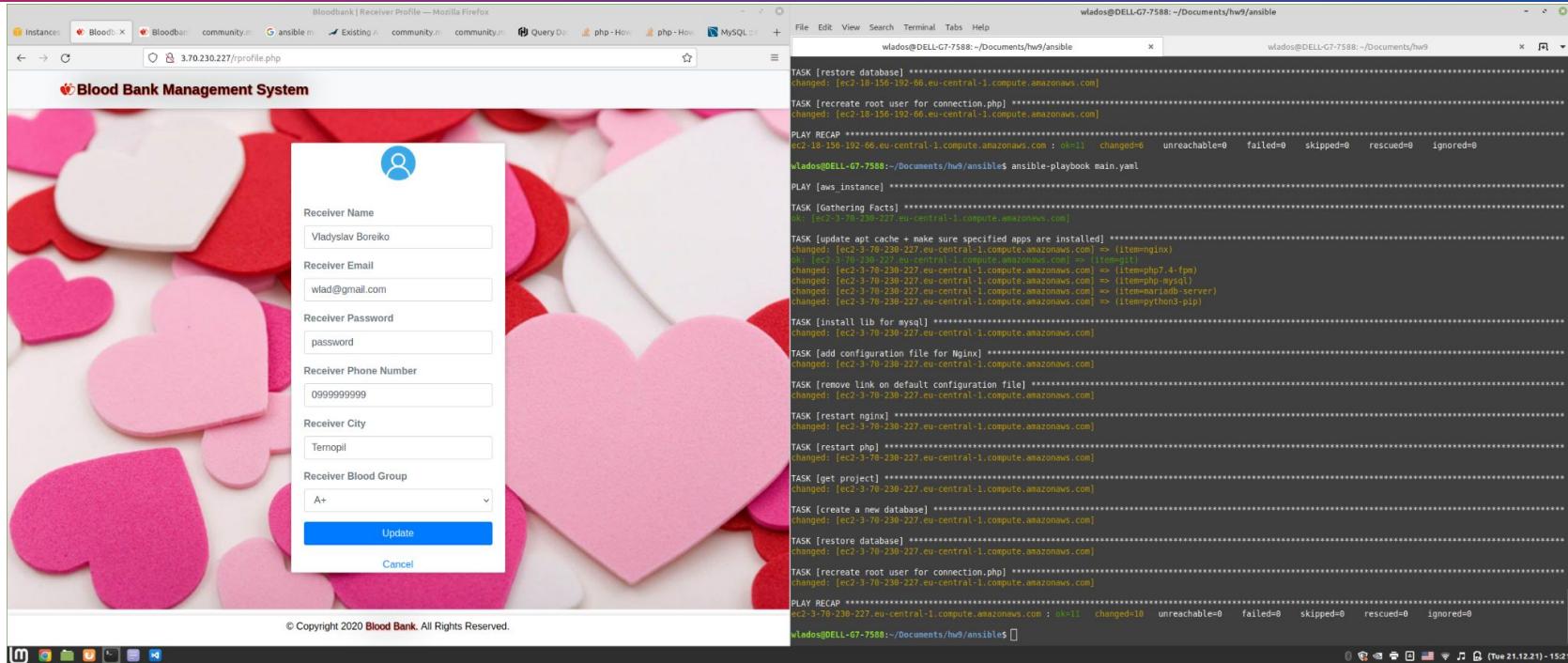
The terminal prompt is "ubuntu@ip-172-31-12-78:/etc/nginx/conf.d\$".

# Ansible

# Manually Ansible: nginx + tree + screenfetch

# Ansible

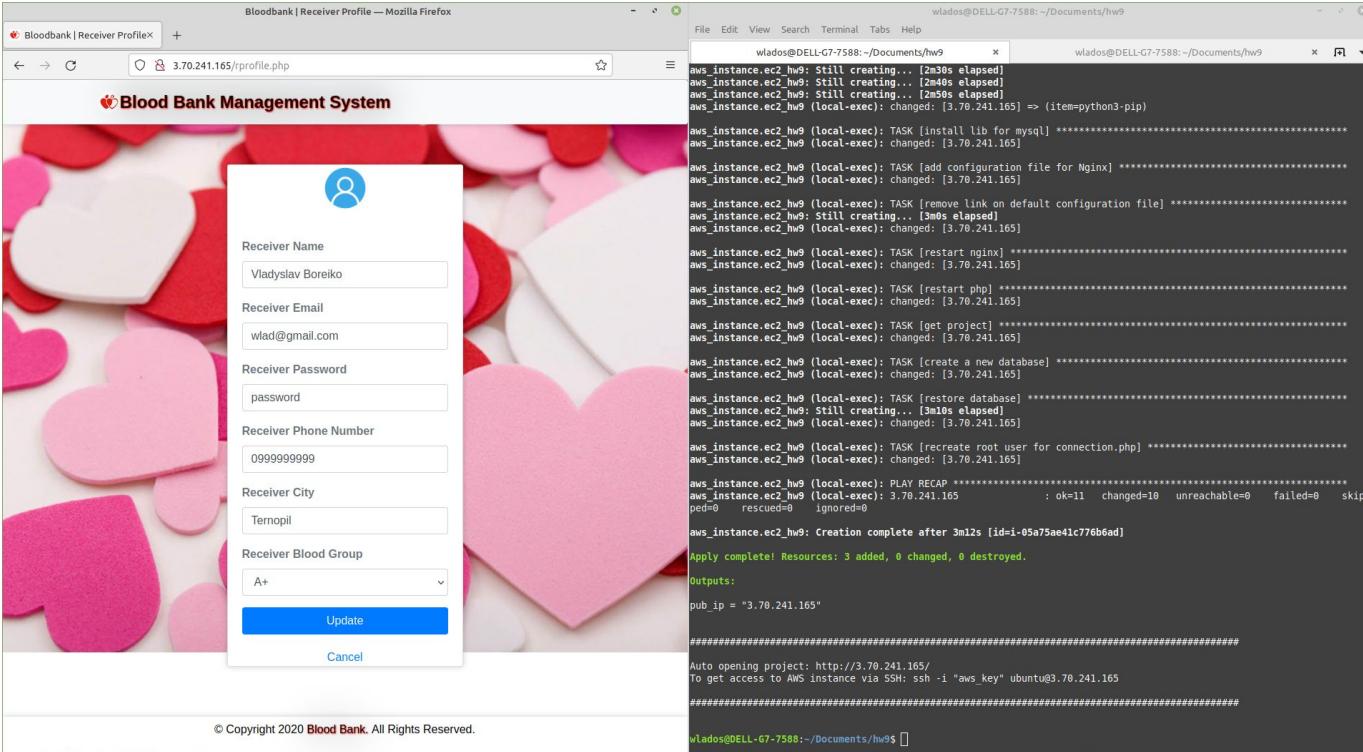
# Manually Terraform + Ansible: LEMP stack + setup + project



softserve

# Ansible

## Auto Terraform + Ansible: LEMP stack + setup + project



# Ansible

## Full-auto Terraform + Ansible with ./deploy.sh

```
1  #!/bin/bash
2
3  ###
4  ### precheck + IaaS
5  ###
6  eval \
7  ansible-playbook main.yaml --check && \
8  terraform init && \
9  terraform validate -json && \
10 terraform plan -out=plan && \
11 terraform apply plan
12
13 ###
14 ### to visit deployed project
15 ###
16 public_ip_of_aws_instance=`cat /tmp/file-ip`
17 eval xdg-open "http://\${public\_ip\_of\_aws\_instance}/"
18
19 ###
20 ### a final message
21 ###
22 echo -e "\n"
23 #####
24
25 Auto opening project: http://\${public\_ip\_of\_aws\_instance}/
26 To get access to AWS instance via SSH: ssh -i \"aws_key\" ubuntu@${public_ip_of_aws_instance}
27
28 #####\n\n"
```

# Heroku

## rvm + ruby

```
wlados@DELL-G7-7588:~$ rvm list rubies
=* ruby-2.5.0 [ x86_64 ]
```

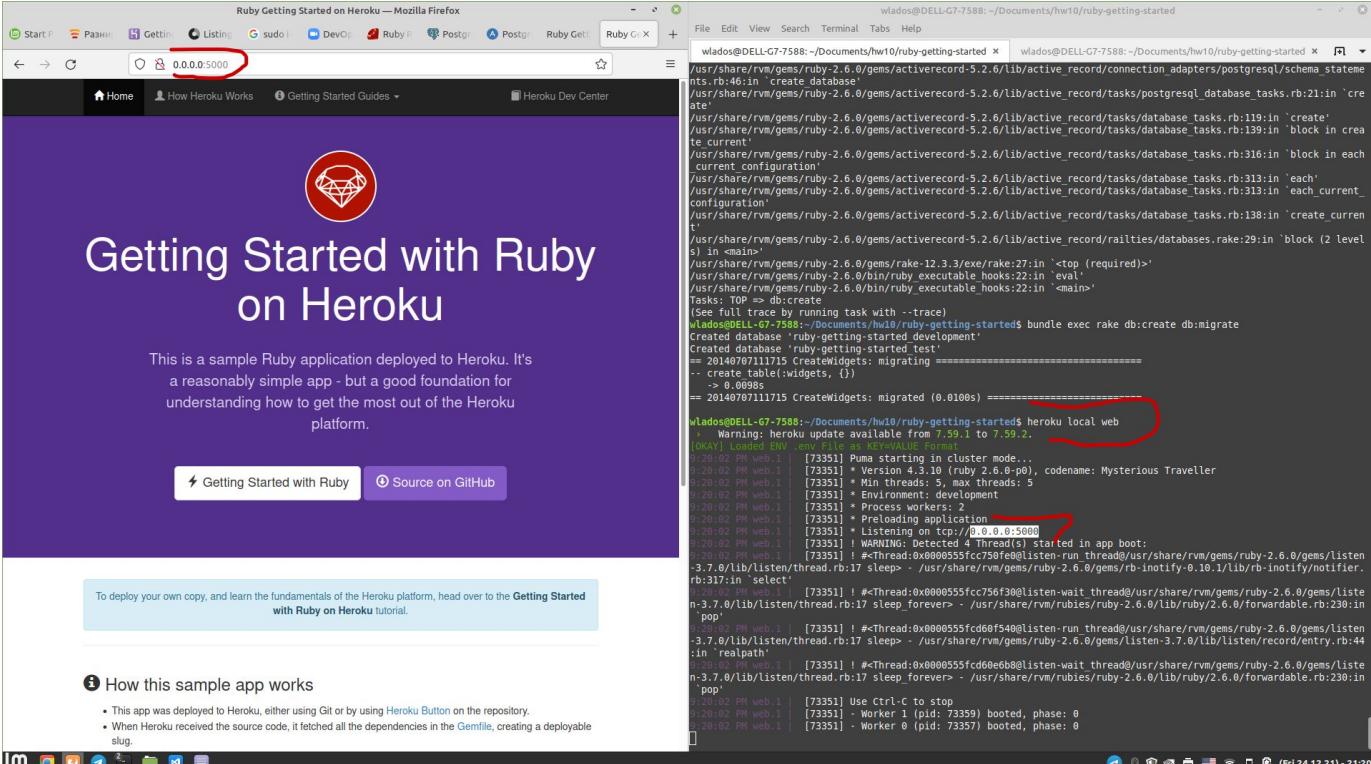
```
# => - current
# *= - current && default
# * - default
```

```
wlados@DELL-G7-7588:~$ █
```



# Heroku

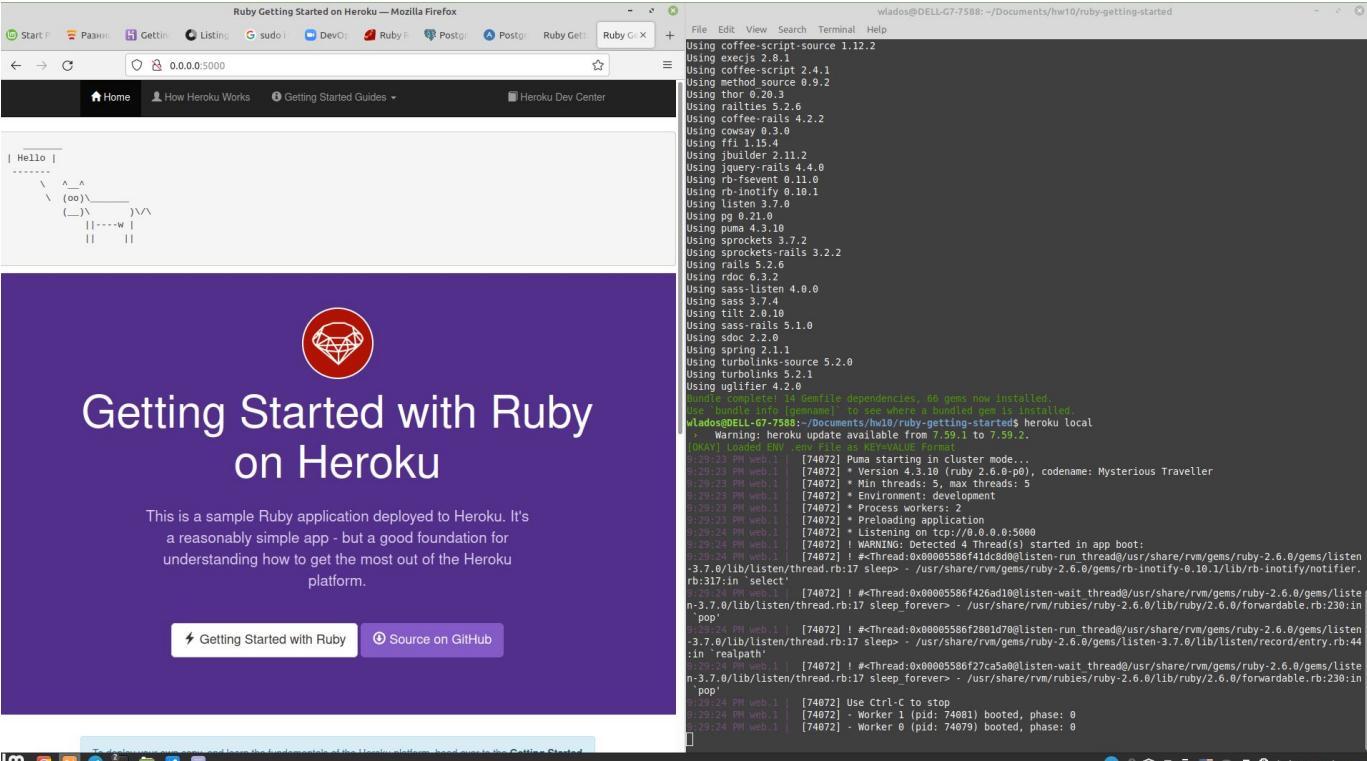
# LOCAL demo project



softserve

# Heroku

## LOCAL demo project with new gem



The screenshot shows a Mozilla Firefox browser window titled "Ruby Getting Started on Heroku". The address bar displays "0.0.0.0:5000". The page content includes a small ASCII art drawing of a face, followed by the heading "Getting Started with Ruby on Heroku". Below the heading, there is a paragraph of text about the sample application. At the bottom, there are two buttons: "Getting Started with Ruby" and "Source on GitHub". On the right side of the screen, a terminal window is open with the command "heroku local". The terminal output shows the deployment process, including the installation of dependencies from the Gemfile, the starting of a Puma server in cluster mode, and the creation of multiple workers. It also shows the application listening on port 0.0.0.0:5000 and the detection of four threads in the app boot.

```
Using coffee-script-source 1.12.2
Using execjs 2.8.1
Using coffee-script 2.4.1
Using memoize-source 0.9.2
Using thor 0.9.3
Using railties 5.2.6
Using coffee-rails 4.2.2
Using cowsay 0.3.0
Using ffi 1.15.4
Using jbuilder 2.11.2
Using jquery-rails 4.4.0
Using rb-fsevent 0.11.0
Using rb-inotify 0.10.1
Using listen 3.7.0
Using pg 0.21.0
Using puma 4.3.10
Using sprockets 3.7.2
Using sprockets-rails 3.2.2
Using rails 5.2.6
Using rdoc 6.3.0
Using rack-test 0.1.0
Using sass 3.7.4
Using tilt 2.0.10
Using sass-rails 5.1.0
Using sdoc 2.2.0
Using spring 2.1.1
Using turbolinks-source 5.2.0
Using turbolinks 5.2.1
Using uglifier 4.2.0
bundle install --path ./Gemfile dependencies, 66 gems now installed.
Use `bundle info` to see where a bundled gem is installed.
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$ heroku local
-> Warning: heroku update available from 7.59.1 to 7.59.2.
[OKAY] Loaded ENV .env File as KEY=VALUE Format
9:29:23 PM web.1 | [74072] Puma starting in cluster mode...
9:29:23 PM web.1 | [74072] Version 4.3.10 (ruby 2.6.6-p0), codename: Mysterious Traveller
9:29:23 PM web.1 | [74072] Min threads: 5, max threads: 5
9:29:23 PM web.1 | [74072] Environment: development
9:29:23 PM web.1 | [74072] * Process workers: 2
9:29:23 PM web.1 | [74072] * Preloading application
9:29:24 PM web.1 | [74072] * Listening on tcp://0.0.0.0:5000
9:29:24 PM web.1 | [74072] ! WARNING: Detected 4 thread(s) started in app boot:
9:29:24 PM web.1 | [74072] ! #<Thread:0x00005586f41d8d0@listen-run_thread@usr/share/rvm/gems/ruby-2.6.0/gems/listen-3.7.0/lib/listen/thread.rb:17 sleep - /usr/share/rvm/gems/ruby-2.6.0/gems/rb-inotify-0.10.1/lib/rb-inotify/notifier.rb:317:in <select>
9:29:24 PM web.1 | [74072] ! #<Thread:0x00005586f280d10@listen-wait_thread@usr/share/rvm/gems/ruby-2.6.0/gems/listen-3.7.0/lib/listen/thread.rb:17 sleep_forever - /usr/share/rvm/gems/ruby-2.6.0/gems/listen-3.7.0/lib/listen/thread.rb:17 sleep_forever - /usr/share/rvm/gems/ruby-2.6.0/gems/rb-inotify-0.10.1/lib/rb-inotify/notifier.rb:317:in <select>
9:29:24 PM web.1 | [74072] ! #<Thread:0x00005586f280d10@listen-wait_thread@usr/share/rvm/gems/ruby-2.6.0/gems/listen-3.7.0/lib/listen/thread.rb:17 sleep - /usr/share/rvm/gems/ruby-2.6.0/gems/listen-3.7.0/lib/listen/listen.rb:44:in `realpath'
9:29:24 PM web.1 | [74072] ! #<Thread:0x00005586f27ca5@0@listen-wait_thread@usr/share/rvm/gems/ruby-2.6.0/gems/listen-3.7.0/lib/listen/thread.rb:17 sleep_forever - /usr/share/rvm/gems/ruby-2.6.0/gems/listen-3.7.0/lib/listen/thread.rb:17 sleep_forever - /usr/share/rvm/gems/ruby-2.6.0/gems/listen-3.7.0/lib/listen/listen.rb:44:in `realpath'
9:29:24 PM web.1 | [74072] Use Ctrl-C to stop
9:29:24 PM web.1 | [74072] - Worker 1 (pid: 74081) booted, phase: 0
9:29:24 PM web.1 | [74072] - Worker 0 (pid: 74079) booted, phase: 0
```

# Heroku

## REMOTE demo project with new gem

The screenshot shows a dual-monitor setup. The left monitor displays a Mozilla Firefox browser window titled "Ruby Getting Started on Heroku". The page URL is <https://boiling-coast-69333.herokuapp.com>. The content of the page is a "Getting Started with Ruby on Heroku" guide, featuring a cartoon character and a "Hello" message. A red circle highlights the browser's address bar. The right monitor displays a terminal window with the command `heroku open` and its output, which includes deployment logs and a warning about an outdated Ruby version.

```
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$ heroku open
remote: Using actionpack 5.2.6
remote: Using activejob 5.2.6
remote: Using actioncable 5.2.6
remote: Using activestorage 5.2.6
remote: Using activemodel 5.2.6
remote: Using sprockets-rails 3.2.2
remote: Using actionmailer 5.2.6
remote: Using coffee-rails 4.2.2
remote: Using jquery-rails 4.4.0
remote: Using sass-rails 5.1.0
remote: Using rails 5.2.6
remote: Bundled selector is Gemfile dependencies, 65 gems now installed.
remote: Gems in the groups 'development' and 'test' were not installed.
remote: Bundled gems are installed into './vendor/bundle'
remote: Bundle completed (2.01s)
remote: Cleaning up the bundler cache,
remote: ----> Installing node-v16.13.1-linux-x64
remote: ----> Detecting rake tasks
remote: ----> Preparing app for Rails asset pipeline
remote: ----> Cleaning rake assets:precompile
remote: Yarn detection was not detected in the system.
remote: Download Yarn at https://yarnpkg.com/en/docs/install
remote: Asset precompilation completed (1.08s)
remote: Cleaning assets
remote: Running: rake assets:clean
remote: ----> Detecting rails configuration
remote: ###### WARNING:
remote: There is a more recent Ruby version available for you to use:
remote: 2.7.5
remote: The latest version will include security and bug fixes. We always recommend
remote: running the latest version of your minor release.
remote: Please upgrade your Ruby version.
remote: For all available Ruby versions see:
remote: https://devcenter.heroku.com/articles/ruby-support#supported-runtimes
remote: ----> Discovering process types
remote: Procfile declares types > web
remote: Default types for buildpack -> console, rake
remote: ----> Compressing...
remote: Done: 61.7M
remote: ----> Launching...
remote: Released v7
remote: https://boiling-coast-69333.herokuapp.com/ deployed to Heroku
remote: Verifying deploy... done
To https://git.heroku.com/boiling-coast-69333.git
 ! [remote rejected] main -> main
error: failed to push some refs to 'https://git.heroku.com/boiling-coast-69333.git'
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$ heroku open
  Warning: heroku update available from 7.59.1 to 7.59.2.
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$
```

# Heroku

# REMOTE demo project with new add-on Papertrail

softserve

# Heroku

## Using “Ruby on Rails”

```
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$ heroku run rails console
  > Warning: heroku update available from 7.59.1 to 7.59.2.
Running rails console on • boiling-coast-69333... up, run.8513 (Free)
Loading production environment (Rails 5.2.6)
irb(main):001:0> puts Cowsay.say("hi","cow")

| hi |
-----
 \  ^ ^
  \  (oo)\_____
   (__)\       )\/\
        ||----w |
        ||     |

=> nil
irb(main):002:0> exit
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$ heroku run bash
  > Warning: heroku update available from 7.59.1 to 7.59.2.
Running bash on • boiling-coast-69333... up, run.6069 (Free)
~ $ ls
app      bin      config.ru  Gemfile      lib  package.json  public    README.md  tmp
app.json  config  db        Gemfile.lock  log  Procfile      Rakefile  test     vendor
~ $ exit
exit
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$
```



# Heroku

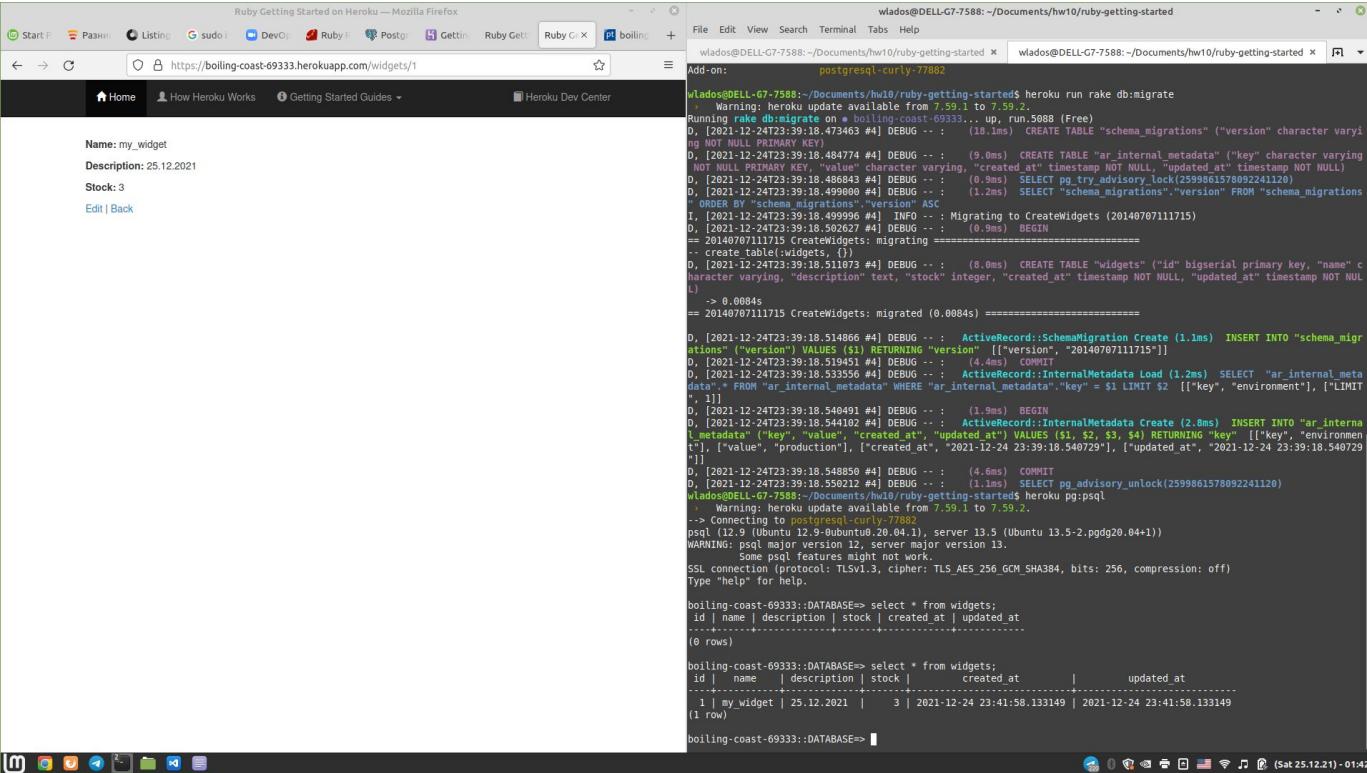
## **LOCAL using config var**

A screenshot of a dual-monitor setup. The left monitor displays a Ruby application titled 'Getting Started with Ruby on Heroku' with a diamond icon. The right monitor shows a terminal window with a Rails application running on Heroku, displaying logs and command-line interactions.

softserve

# Heroku

## REMOTE using a database



The screenshot shows a Linux desktop environment with a browser window and two terminal windows.

**Browser Window:** The URL is <https://boiling-coast-69333.herokuapp.com/widgets/1>. The page displays a single widget entry:

Name:	my_widget
Description:	25.12.2021
Stock:	3

[Edit](#) | [Back](#)

**Terminal Window 1:** The title is "Ruby Getting Started on Heroku". It shows the command `heroku run rake db:migrate` being run, outputting migration logs:

```
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$ heroku run rake db:migrate
Warning: heroku update available from 7.59.1 to 7.59.2.
Running rake db:migrate on ⬢ boiling-coast-69333... up, run.5088 (Free)
D, [2021-12-24T23:39:18.473463 #4] DEBUG -- :   (18.1ms) CREATE TABLE "schema_migrations" ("version" character varying NOT NULL PRIMARY KEY)
D, [2021-12-24T23:39:18.484774 #4] DEBUG -- :   (9.0ms) CREATE TABLE "ar_internal_metadata" ("key" character varying NOT NULL PRIMARY KEY, "value" character varying, "created_at" timestamp NOT NULL, "updated_at" timestamp NOT NULL)
D, [2021-12-24T23:39:18.490843 #4] DEBUG -- :   (0.9ms) SELECT pg_try_advisory_lock(2599861578092241120)
D, [2021-12-24T23:39:18.490900 #4] DEBUG -- :   (0.9ms) SELECT "schema_migrations"."version" FROM "schema_migrations" ORDER BY "schema_migrations"."version" ASC
I, [2021-12-24T23:39:18.499996 #4] INFO -- : Migrating to CreateWidgets (20140707111715)
D, [2021-12-24T23:39:18.502627 #4] DEBUG -- :   (0.9ms) BEGIN
== 20140707111715 CreateWidgets: migrating =====
-- create_table(:widgets, ())
D, [2021-12-24T23:39:18.511073 #4] DEBUG -- :   (8.0ms) CREATE TABLE "widgets" ("id" bigserial primary key, "name" character varying, "description" text, "stock" integer, "created_at" timestamp NOT NULL, "updated_at" timestamp NOT NULL)
--> 0.0084s
== 20140707111715 CreateWidgets: migrated (0.0084s) =====
```

**Terminal Window 2:** The title is "boiling-coast-69333:DATABASE=>". It shows a PostgreSQL session with commands like `CREATE TABLE`, `INSERT INTO`, and `SELECT` statements, along with a warning about SSL connection:

```
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$ psql -c "CREATE TABLE widgets(id integer, name character varying, description text, stock integer, created_at timestamp without time zone, updated_at timestamp without time zone);"
CREATE TABLE
wlados@DELL-G7-7588:~/Documents/hw10/ruby-getting-started$ heroku pg:psql
Warning: heroku update available from 7.59.1 to 7.59.2.
--> Connecting to postgresql-curly-7788/20140707111715...
psql (12.9 (Ubuntu 12.9-0ubuntu10.20.04.1), server 13.5 (Ubuntu 13.5-2.pgdg20.04+1))
WARNING: psql major version 12, server major version 13.
Some psql features might not work.
SSL connection (protocol: TLSv1.3, cipher: TLS_AES_256_GCM_SHA384, bits: 256, compression: off)
Type "help" for help.

boiling-coast-69333::DATABASE=> select * from widgets;
 id | name | description | stock | created_at | updated_at
----+-----+-----+-----+-----+-----+
(0 rows)

boiling-coast-69333::DATABASE=> select * from widgets;
 id | name | description | stock | created_at | updated_at
----+-----+-----+-----+-----+-----+
 1 | my_widget | 25.12.2021 | 3 | 2021-12-24 23:41:58.133149 | 2021-12-24 23:41:58.133149
(1 row)
```

# Heroku

# REMOTE final version

A screenshot of a web browser displaying a Heroku application at the URL "boiling-coast-69333.herokuapp.com". The page has a dark header with navigation links for "Home", "How Heroku Works", "Getting Started Guides", and "Heroku Dev Center". The main content area shows a list of log entries from a Ruby application, each starting with "Hello Vladyslav Boreiko #". Below the logs is an ASCII art logo of a diamond with a crown on top, enclosed in a red circle. The background of the page is purple.

A black and white photograph showing a close-up of a person's hands typing on a laptop keyboard. The hands are positioned as if in the middle of a sentence, with fingers on the keys. The background is a solid, bright orange color.

Any questions?