JENKINS automatic Android deployer

JENKINS ->

    -> create aws ec2 **node** via terraform

        -> create docker via **ansible**

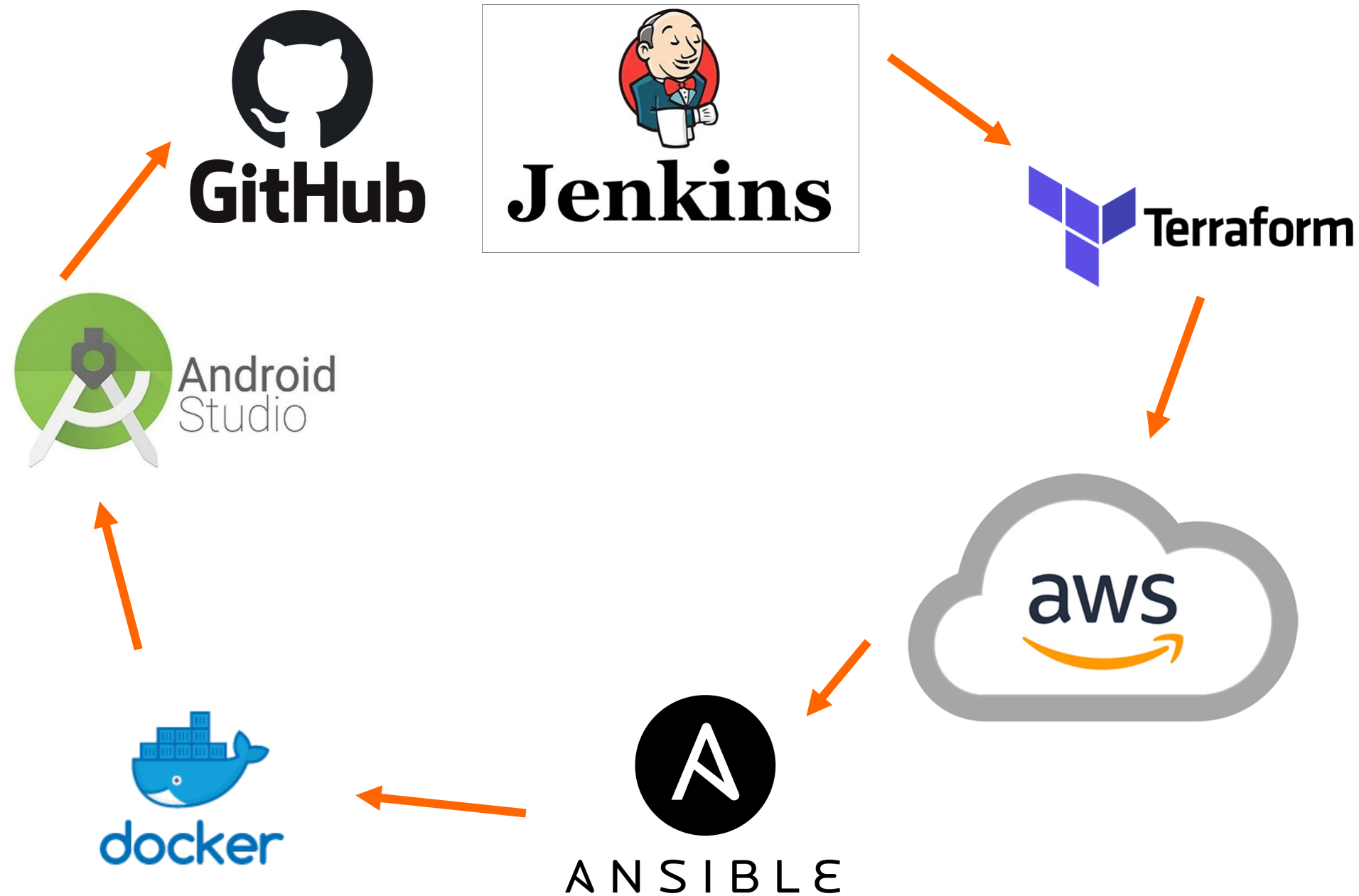   **->** placing docker file

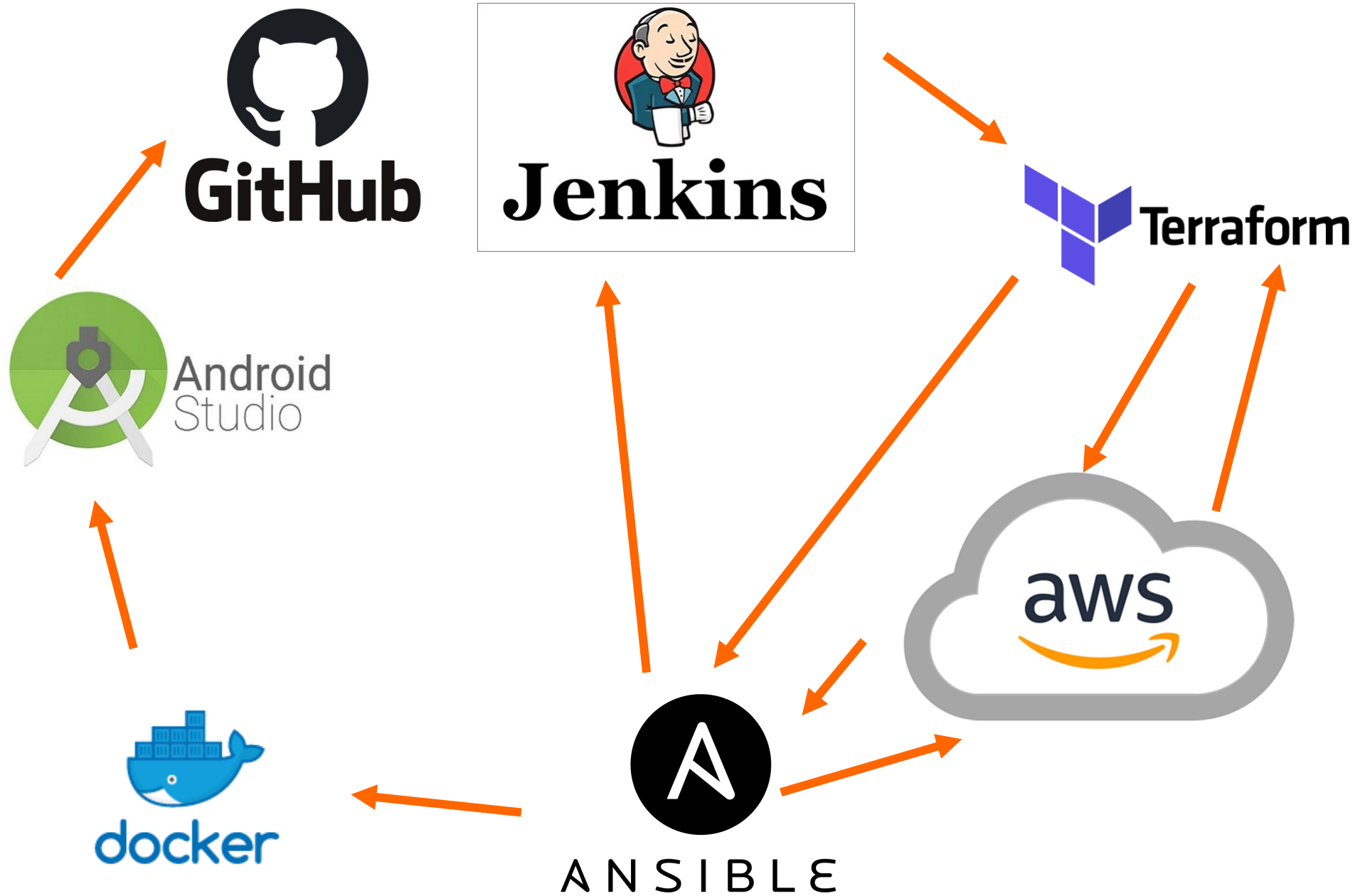   -> deploy docker environment for Android

                    -> compile Android program

                        ->deploy app to GIThub

                            -> destroy (or stop) EC2 instance on aws

                            -> return to 1st step

On local machine:

scp -r -i ~/.ssh/keypair_jenkins.pem ~/.ssh/keypair_jenkins.pem ubuntu@<jenkinsIP>:/home/ubuntu/.ssh/

On jenkins machine:

sudo cp ~/.ssh/keypair_jenkins.pem /var/lib/jenkins/.ssh/

GITHUB (for uploading)

ssh-keygen -t ed25519 -C "*spspider95@gmail.com*"

eval "$(ssh-agent -s)"

ssh-add ~/.ssh/id_ed25519

ONLY ONE machine is running

	jenkins	i-0ea9dace213d61f47	t2.micro	eu-west-2c	🟢 running	✅ 2/2 checks …	*None*	🔧	ec2-3-8-96-141.eu-west-2.compute.amazonaws.com
	docker_terraform	i-067ea04959f0d63d9	t2.medium	eu-west-2c	🔴 stopped		*None*	🔧	

VARIANT of Deployment

Jenkins commit docker_terraform at 2021-09-27 13:00:55   `a16ccb0` 3 minutes ago   🕑 **1 commit**

📁	ADV/debug	commit docker_terraform at 2021-09-27 13:00:55	3 minutes ago
📁	MKK/debug	commit docker_terraform at 2021-09-27 13:00:55	3 minutes ago
📁	RSP/debug	commit docker_terraform at 2021-09-27 13:00:55	3 minutes ago
📁	TEST/debug	commit docker_terraform at 2021-09-27 13:00:55	3 minutes ago
📄	README.md	commit docker_terraform at 2021-09-27 13:00:55	3 minutes ago

README.md   ✏️

✈️ tTesterUKDD from machine:docker_terraform at 2021-09-27 13:00:55

HOW IT WORKS

http://devopspaukov.space:8080/

Login:serhii

Password:admin

https://github.com/spspider/AndroidQUIZtTester

When it receives "push"

Or

H 1 */3 * *(every 3 days at 01.00.00 UTC time)

CREATES SERVER USING TERRAFORM AND (or not)
receives his pulic ip

□[32m+□[0m □[0mroot_block_device {
    □[32m+□[0m □[0m□[1m□[0mdelete_on_termination□[0m□[0m = (known after apply)
    □[32m+□[0m □[0m□[1m□[0mdevice_name□[0m□[0m   = (known after apply)
    □[32m+□[0m □[0m□[1m□[0mencrypted□[0m□[0m   = (known after apply)
    □[32m+□[0m □[0m□[1m□[0miops□[0m□[0m   = (known after apply)
    □[32m+□[0m □[0m□[1m□[0mkms_key_id□[0m□[0m   = (known after apply)
    □[32m+□[0m □[0m□[1m□[0mtags□[0m□[0m   = (known after apply)
    □[32m+□[0m □[0m□[1m□[0mthroughput□[0m□[0m   = (known after apply)
    □[32m+□[0m □[0m□[1m□[0mvolume_id□[0m□[0m   = (known after apply)
    □[32m+□[0m □[0m□[1m□[0mvolume_size□[0m□[0m   = (known after apply)
    □[32m+□[0m □[0m□[1m□[0mvolume_type□[0m□[0m   = (known after apply)
  }

    □[32m+□[0m □[0mtimeouts {
    □[32m+□[0m □[0m□[1m□[0mcreate□[0m□[0m = "60m"
    □[32m+□[0m □[0m□[1m□[0mdelete□[0m□[0m = "1h"
  }
}

□[0m□[1mPlan:□[0m 1 to add, 0 to change, 0 to destroy.
□[0m□[0m
□[1mChanges to Outputs:□[0m□[0m
  □[33m~□[0m □[0m□[1m□[0mserver_public_ip□[0m□[0m = [
      □[31m-□[0m □[0m"3.8.95.23",
      □[32m+□[0m □[0m(known after apply),
    ]
□[0m□[1maws_instance.app_server: Creating...□[0m□[0m
□[0m□[1maws_instance.app_server: Still creating... [10s elapsed]□[0m□[0m
□[0m□[1maws_instance.app_server: Still creating... [20s elapsed]□[0m□[0m
□[0m□[1maws_instance.app_server: Still creating... [30s elapsed]□[0m□[0m
□[0m□[1maws_instance.app_server: Creation complete after 31s [id=i-0e7792587d1fa88a8]□[0m
□[0m□[1m□[32m
Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
□[0m□[0m□[1m□[32m
Outputs:

□[0mserver_public_ip = [
  "18.132.3.223",
]
i-0e7792587d1fa88a8 is:running
i-0e7792587d1fa88a8 is:initializing 08:51:44
#i-0e7792587d1fa88a8 is:initializing 08:51:50

```
delete node docker_aws_node
create node docker_aws_node
[server]
docker_terraform ansible_host=ec2-18-132-3-223.eu-west-2.compute.amazonaws.com

[same_cred:children]
server
{
    "_meta": {
        "hostvars": {
            "docker_terraform": {
                "ansible_host": "ec2-18-132-3-223.eu-west-2.compute.amazonaws.com",
                "ansible_ssh_private_key_file": "~/.ssh/keypair_jenkins.pem",
                "ansible_user": "ubuntu"
            }
        }
    },
    "all": {
        "children": [
            "same_cred",
            "ungrouped"
        ]
    },
    "same_cred": {
        "children": [
            "server"
        ]
    },
    "server": {
        "hosts": [
            "docker_terraform"
        ]
    }
}
Using /etc/ansible/ansible.cfg as config file
PLAY [connection] ***********************************************************

TASK [Gathering Facts] ******************************************************
ok: [docker_terraform]

TASK [Updateapt-get repo and cache] *****************************************
```

Configurates Docker
server by ANSIBLE

DOCKER PULL PROJECT FROM GITHUB

COMPILE ARUINO PROJECT USNG 'gradle assembleDebug'

sh 'echo \'admin\' | sudo -S docker run --rm -v "$PWD":/home/gradle/ -w /home/
gradle android-build:6.0.1-30-29 gradle assembleDebug'

-w = workdir of this container

-v = mount directory of project to inside volume (for example ls shows all project)

```
9 files changed, 5 insertions(+)
create mode 100755 ADV/debug/app-ADV-debug.apk
create mode 100755 ADV/debug/output.json
create mode 100755 MKK/debug/app-MKK-debug.apk
create mode 100755 MKK/debug/output.json
create mode 100644 README.md
create mode 100755 RSP/debug/app-RSP-debug.apk
create mode 100755 RSP/debug/output.json
create mode 100755 TEST/debug/app-TEST-debug.apk
create mode 100755 TEST/debug/output.json
```

UPLOADING TO GITHUB

```
Reinitialized existing Git repository in /var/lib/jenkins/workspace/ProjectAndroidPipeline/
[master fea39cc] commit docker_terraform at 2021-09-29 08:59:06
 Committer: Jenkins <jenkins@ip-172-31-14-26.eu-west-2.compute.internal>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 5 files changed, 1 insertion(+)
 mode change 100644 => 100755 README.md
To github.com:spspider/tTesterUKDD.git
   a16ccb0..fea39cc  master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
```

	jenkins	i-0ea9dace213d61f47	t2.micro	eu-west-2c	🟢 running	✅ 2/2 checks …	None	✏️	ec2-3-8-96-141.eu-west-2.compute.amazonaws.com
	docker_terraform	i-067ea04959f0d63d9	t2.medium	eu-west-2c	🔴 stopped		None	✏️	

```
Commit message: "first commit"
[Pipeline] withEnv
[Pipeline] {
[Pipeline] dir
Running in /var/lib/jenkins/workspace/ProjectAndroidPipeline/run/terraform
[Pipeline] {
[Pipeline] sh
+ chmod +x -R /var/lib/jenkins/workspace/ProjectAndroidPipeline
[Pipeline] sh
+ echo /var/lib/jenkins/workspace/ProjectAndroidPipeline/run/terraform
/var/lib/jenkins/workspace/ProjectAndroidPipeline/run/terraform
[Pipeline] sh
+ echo jenkins
jenkins
[Pipeline] sh
+ ./terraform_destroy.sh stop
##########################################
{
    "StoppingInstances": [
        {
            "CurrentState": {
                "Code": 64,
                "Name": "stopping"
            },
            "InstanceId": "i-067ea04959f0d63d9",
            "PreviousState": {
                "Code": 16,
                "Name": "running"
            }
        }
    ]
}
[Pipeline] }
[Pipeline] // dir
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] }
[Pipeline] // stage
[Pipeline] End of Pipeline
Finished: SUCCESS
```

```
+ ./terraform_destroy.sh stop
##########################################
{
    "StoppingInstances": [
        {
            "CurrentState": {
                "Code": 64,
                "Name": "stopping"
            },
            "InstanceId": "i-0e7792587d1fa88a8",
            "PreviousState": {
                "Code": 16,
                "Name": "running"
            }
        }
    ]
}
[Pipeline] }
[Pipeline] // dir
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] }
[Pipeline] // stage
[Pipeline] End of Pipeline
Finished: SUCCESS
```

LOW COST Project

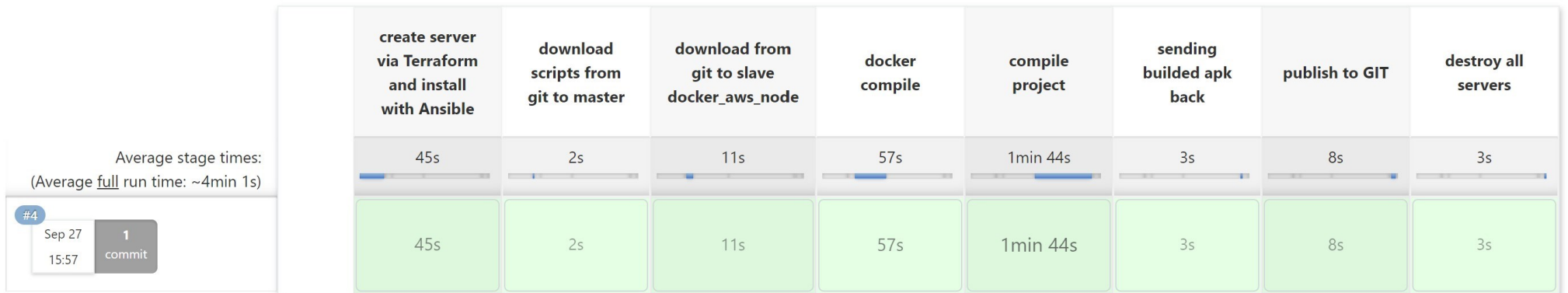T2.medium used

$0.16
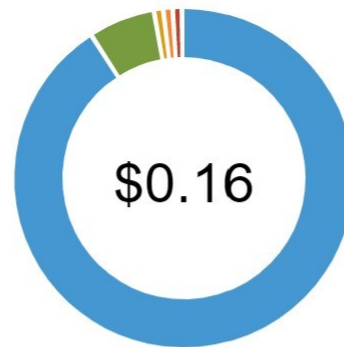
■	Elastic Compute Cloud	$0.15
■	Data Transfer	$0.01
■	CloudWatch	$0.00
■	Elastic File System	$0.00
■	Other Services	$0.00
	Tax	$0.00
	Total	**$0.16**

STEPS with stopped machine

	create server via Terraform and install with Ansible	download scripts from git to master	download from git to slave docker_aws_node	docker compile	compile project	sending builded apk back	publish to GIT	destroy all servers
Average stage times: (Average full run time: ~4min 1s)	45s	2s	11s	57s	1min 44s	3s	8s	3s
#4 Sep 27 15:57 — 1 commit	45s	2s	11s	57s	1min 44s	3s	8s	3s

STEPS with destroyed machine

	create server via Terraform and install with Ansible	download scripts from git to master	download from git to slave docker_aws_node	docker compile	compile project	sending builded apk back	publish to GIT	destroy all servers
Average stage times: Average full run time: ~8min 22s)	5min 4s	3s	13s	59s	1min 36s	4s	7s	3s
8 Oct 03 15:05 — 1 commit	5min 4s	3s	13s	59s	1min 36s	4s	7s	3s