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Capgemini Immediate

Deploying Temenos-Release-B application in AWS Environment – Packer & Terraform

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# Introduction

This document outlines the steps involved in setting up below Temenos application in AWS environment server using packer image & Terraform scripts.

* Temenos - Release B

# Pre-Requisite

* GoCD Agent which has connectivity with the AWS-POC environment
* Access to AWS Jumpserver – 52.214.120.0
* Access to AWS console
* Access to bootstrap server – 172.31.30.250
* Acccess to GoCD, Nexus and Gogs in the AWS Environment

URL::

Gogs 🡪 <http://172.31.30.250:3000/>

Nexus🡪 <http://172.31.30.250:8081/nexus>

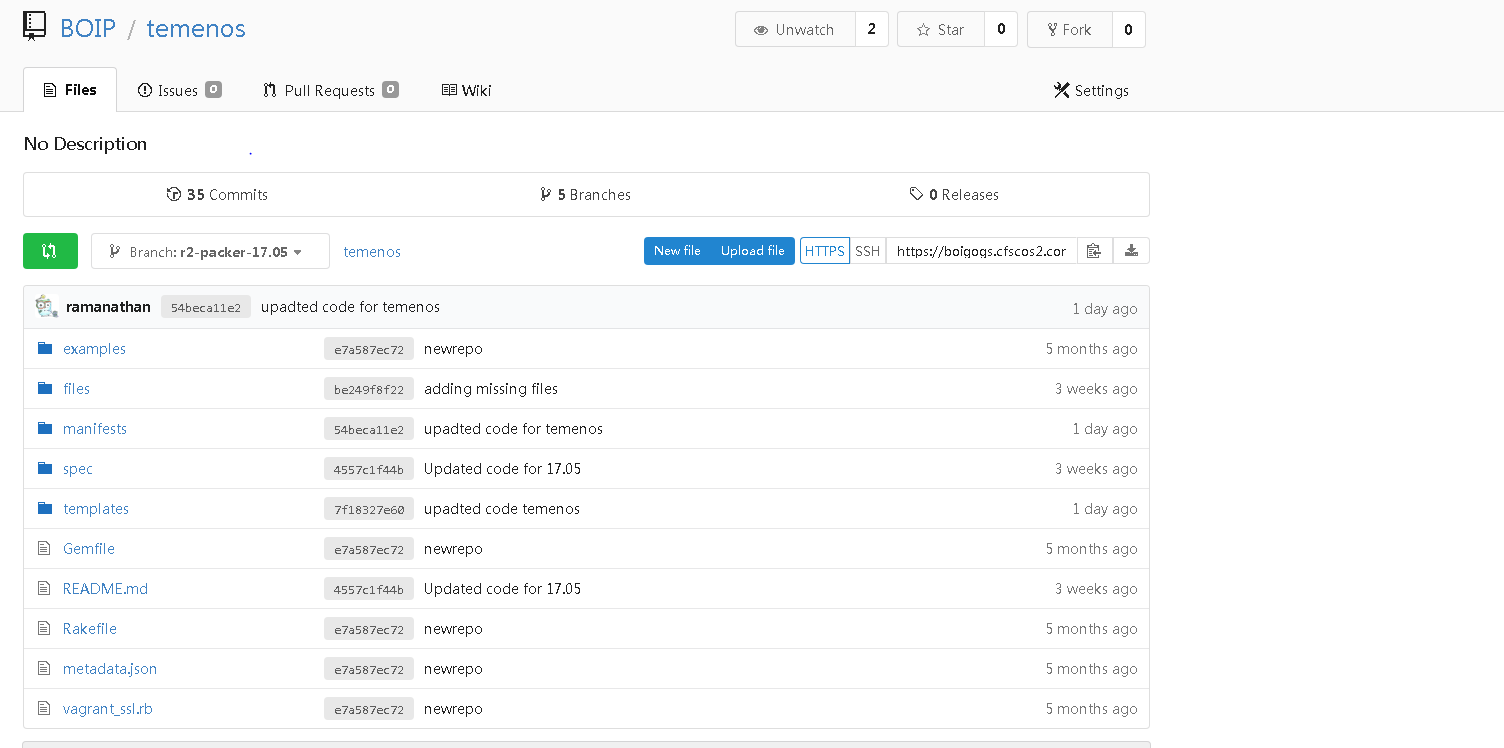
GoCD🡪 <http://172.31.30.250:8153/go/>

Consul🡪 <http://172.31.30.250:8500/ui/>

# Setting up the environment in AWS

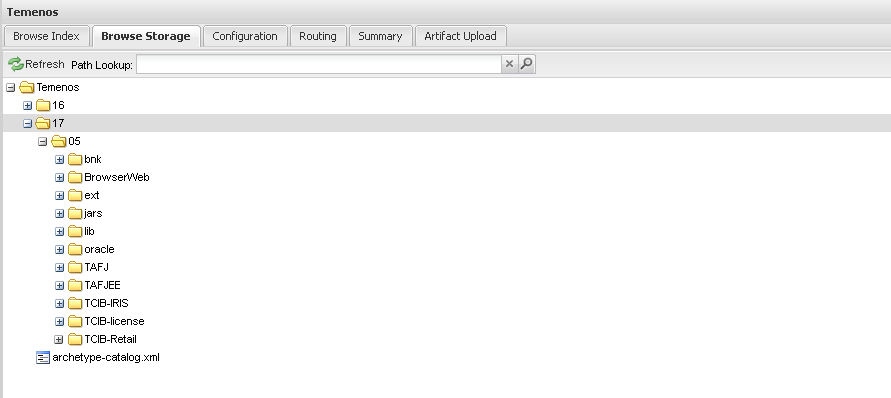
We need to move all the binaries & modules related to Temenos from Bitbucket/Nexus to AWS Gogs & AWS Nexus.

* Clone the Temenos module from the bitbucket and move the folders to AWS Jumphost.



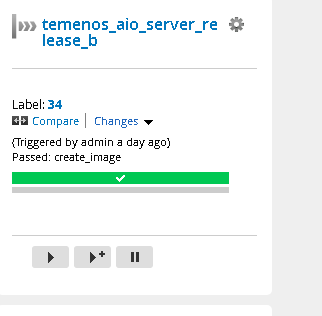
* Create the empty repositories for Temenos in AWS Gogs (172.31.30.250:3000) and commit the copied folders to the respective repositories.
* Download the binaries for Temenos from infra nexus and upload to AWS S3 bucket through UI console. Now login to the AWS Jumpserver & login to s3 console and download the binaries locally.
* Now upload the binaries to AWS Nexus(172.31.30.250:8081) with proper folder structure similar to infra nexus.

Now we have the similar setup as of infra tooling.

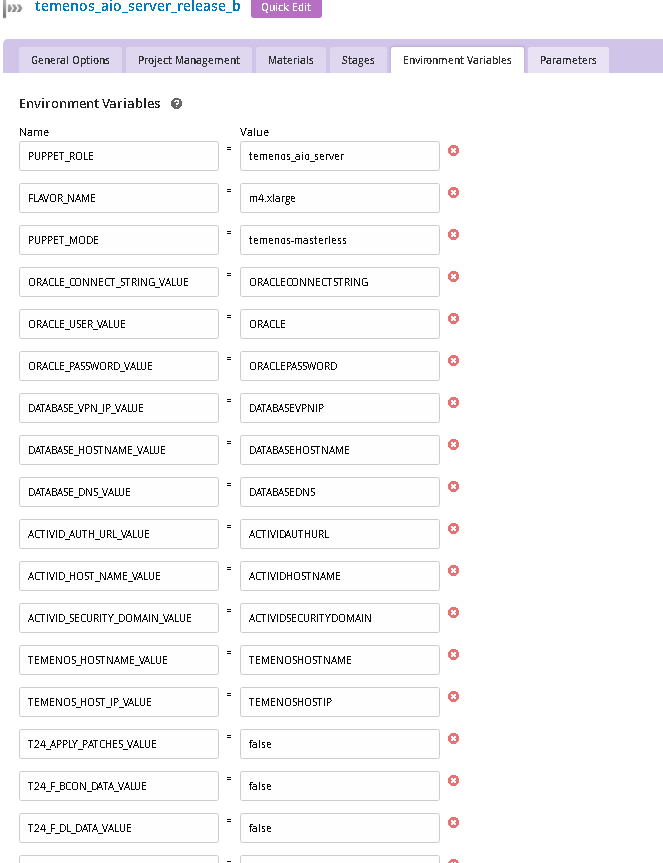
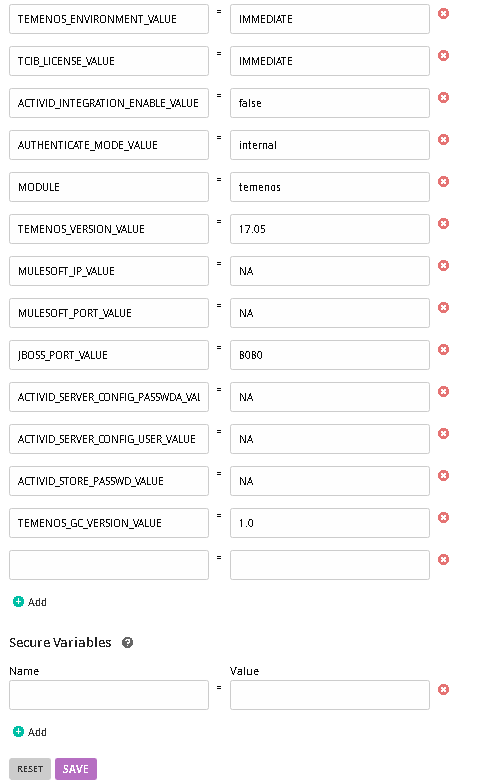


4 Packer Activity – Image Builder (Create Pipeline)

* Clone the existing pipeline of Temenos-aio-server – Release A and name it as “temenos-aio-server-release\_b”



* The cloned pipeline will have the exports w.r to AWS such as (access key, secretkey, flavour etc). So we need to import the app related env variables.
* Import all the environmental variables w.r toTemenos, below are the variables which we have imported w.r to RelB

* Create a new template for RelB and add stages & jobs similar to RelA template , the order of the task execution should be similar to the RelA template .
* Alter the Materials & Artifacts of the Temenos RelB application pointing to 172.31.30.250 – AWS environment.
* Create a JSON file config-puppet-temenos-masterless.json which will be passed as an input to the packer pipeline. (take RelA HID/temenos JSON file as reference).

The JSON file will contain the environment variables & user variables declared and also the sell commands for copying the puppet modules, and executing the puppet run etc.

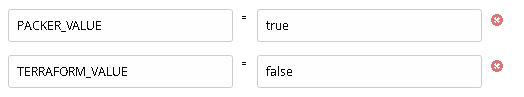
Below is a sample JSON file for reference.

config-puppet-temenos-masterless.json 

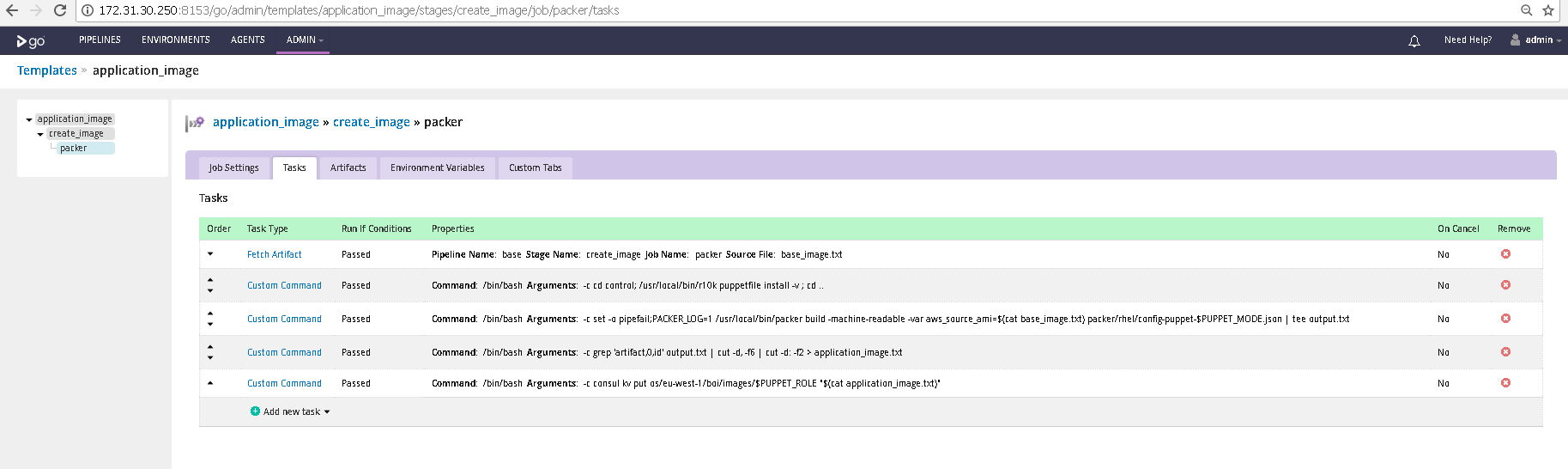
# 5 Packer Activity – Image Builder

* Now as per the requirement we have to make the changes in the puppet code as well.
* The code customization includes which part of the puppet code should be executed as a part of packer image build & which part should be included in the terraform run (user-data).
* In packer image build, we have included the all the static values resource configuration and dynamic values resources will be executing in terraform.

Now the puppet code is modified with a 2 new variables $packer & $terraform.



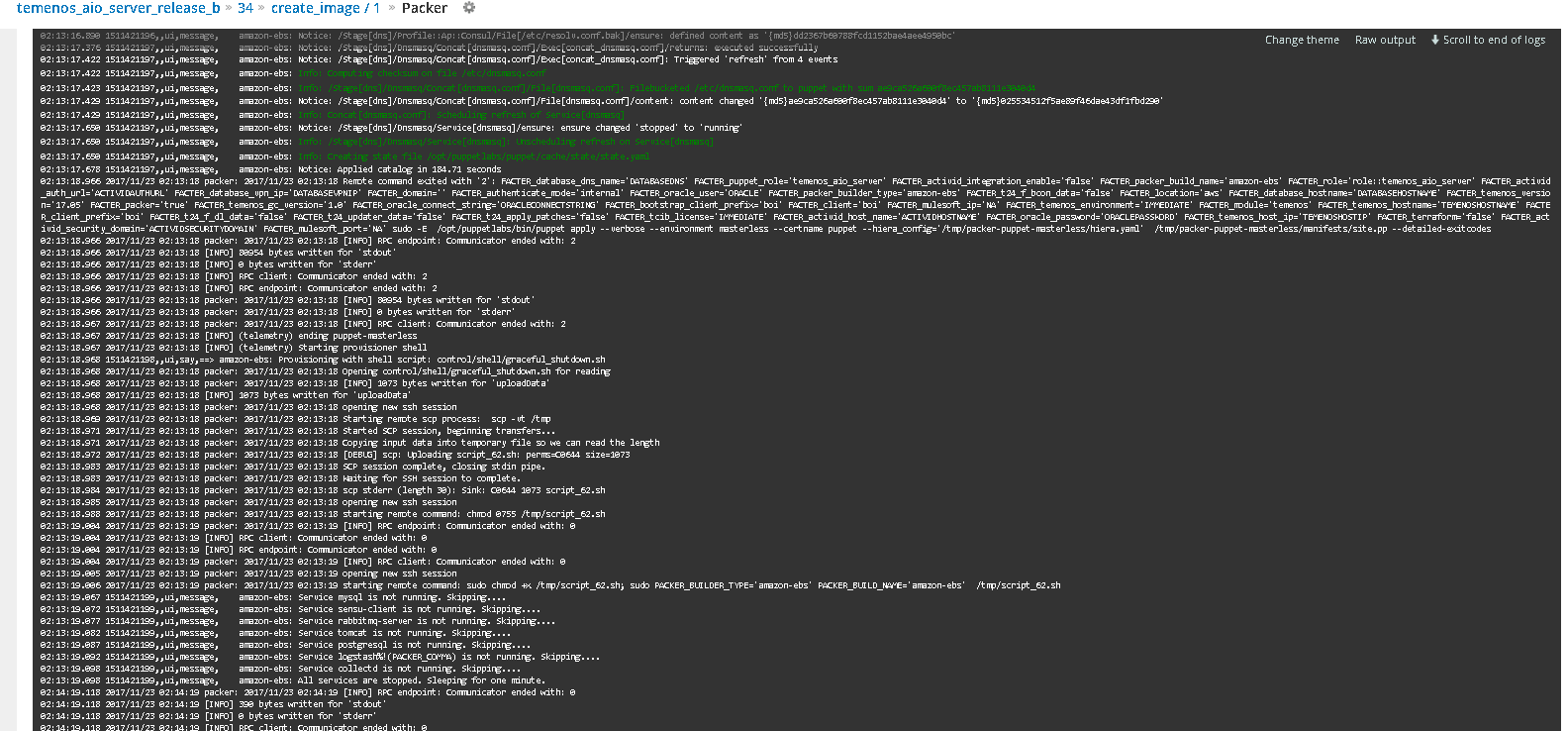
* + If $packer=true, then it will execute the parts which don’t have run-time / environment dependencies.
  + If $terraform=true, then it will execute the remaining part which was excluded in packer activity.
  + If we give both $packer & $terraform variable as true, then it will run the entire puppet code in a single run.
* Now, we have the pipeline created & the environmental variables declared in the pipeline. Next, we have to create the template & add the stages,jobs & tasks and attach the template to the pipeline.
* Here, we have created a template “banking-apllication-Temenos” & added the tasks for this as below.



# 6 Packer Activity – Image Builder (Run Pipeline)

* Once the pipeline has been created & configured and the customized code has been committed into Gogs, then we can proceed to trigger the pipeline run.
* Upon successful run, this will create a packer image (ami-xxxxxxx) in the AWS environment.
* This is the image we have to use in the terraform activity and pass the run time variables in terraform pipeline.

Below is the output of a successful packer-builder run.

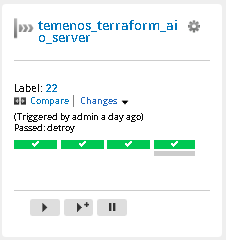


Here the ami-xxxxx got created & it has been updated in the consul as well. This image will be fetched and the changes will be applied during the terraform activity.

# 7 Terraform Activity – Provisioner

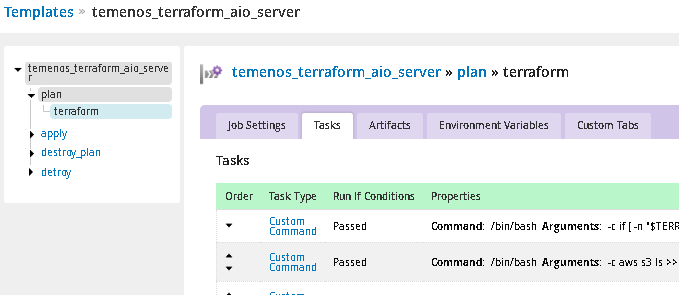
* + Note down the image ID (ami-xxxxxx) and proceed with the terraform activity.
  + Clone the terraform pipeline of Temenos RelA and name it as Temenos\_terraform\_aio\_server.

Below is the pipeline we are using for terraform activity of RelB.



Create a new template for RelB and configure the stages & jobs similar to RelA.

* + - * Note:- Don’t change the order of the task execution.
    - Here we have created a template “Temenos\_terraform\_aio\_server” and have added the 4 stages (plan, apply, plan-destroy & destroy).

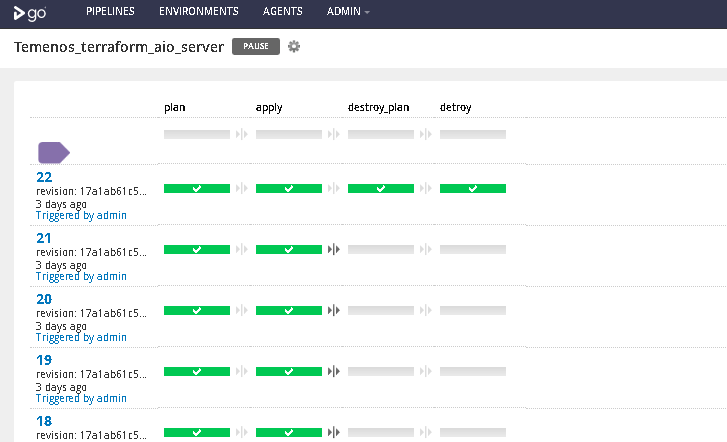


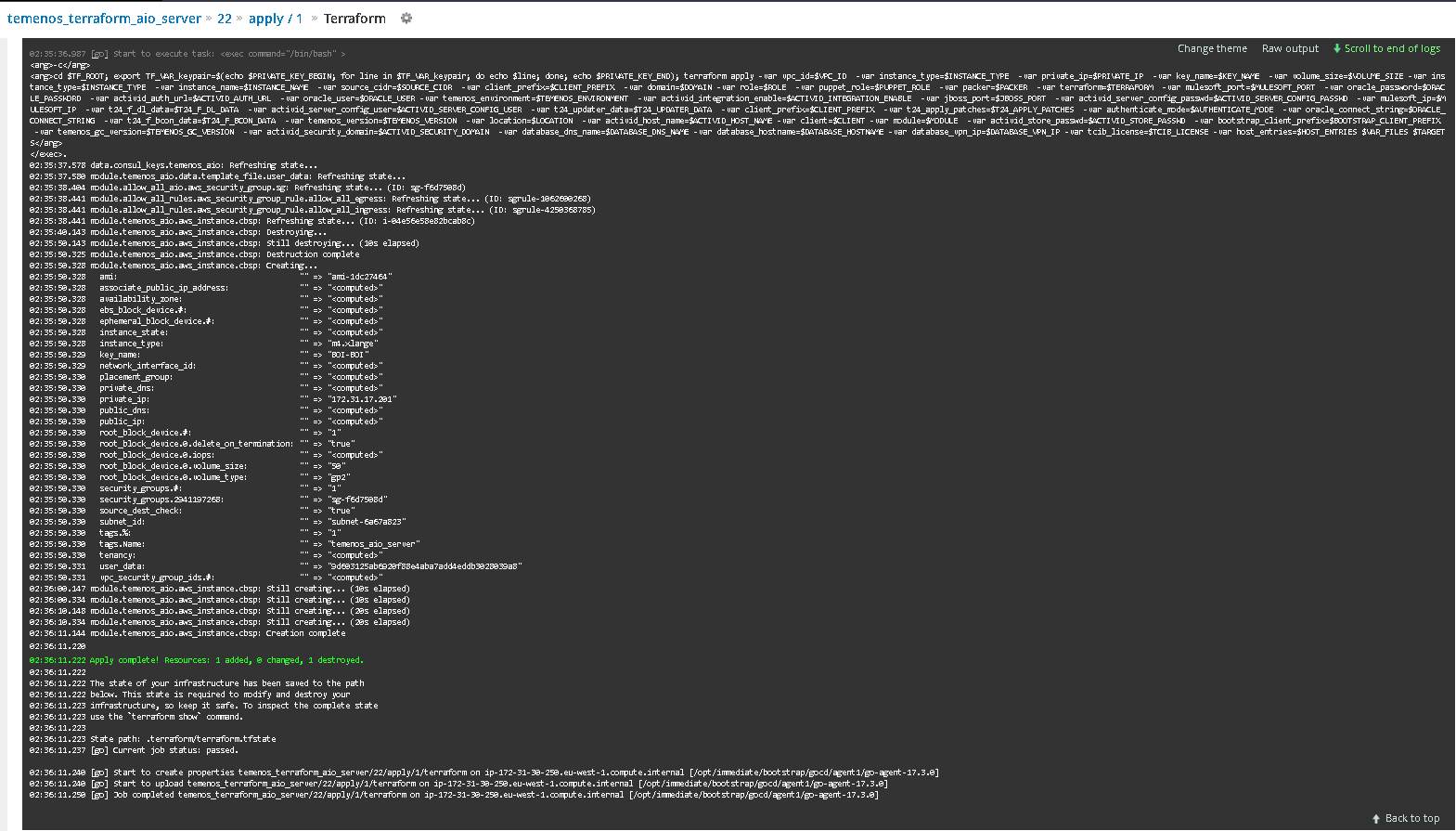
* + Customize the artifacts & materials in the RelB pipeline w.r to 172.31.30.250 environment where AWS Gogs, GoCD and Nexus are running.
* Create the user data scripts which has to be executed as a part of terraform activity, here in RelB we have used 4 userdata script files:
  + - 1. Temenos-puppet-exports-init.tpl
      2. Banking-apps-puppet-run-init.tpl
* Place these scripts in the respective branch (r2-banking\_apps) and declare the variables in the terraform codes compute.tf & variables.tf.

# 8 Terraform Activity – Provisioner (Run Pipeline)

* Once the above configuration has been completed, trigger the pipeline and wait for PLAN & APPLY stage completion. Once done with task with servers we can trigger the destroy plan and destroy stage for destroy servers.

Below is the output of a successful run.





* Once it is completed successfully, login to the IP address which is listed in the output and do the post validation checks.

**For Temenos**

https://<ip-address>:8085/IMMEDIATE 🡪 Browserweb console

https://<ip-address>:8085/TAFJEE 🡪 TAFJEE Console

# Document Version

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| --- | --- | --- | --- | --- | --- |
| **Version** | **Date** | **Changes** | **Documented By** | **Reviewed By** | **Approved By** |
| 0.2 | 27.11.2017 | Updated Version | Ramanathan Vijayan |  |  |
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