



Module Checklist

Automation with Python

By TechWorld with Nana

Video Overview



- ★ Introduction to Boto3 (AWS SDK for Python)
- ★ Install Boto3 & Connect to AWS
- ★ Getting familiar with Boto API
- ★ Python vs. Terraform
- ★ Project: EC2 Server Status Checks
- ★ Project: Writing a Scheduled Task
- ★ Project: Add Tags to EC2 Server Instances
- ★ Project: Print EKS Cluster Information

Backup & Restore:

- ★ Project: Data Backup - Backup EC2 Volumes
- ★ Project: Cleanup - Delete old EC2 Volume Snapshots
- ★ Project: Restore EC2 Volume from a Backup
- ★ Handling Errors

Website Monitoring and Recovery

- ★ Project: Website Monitoring
- ★ Project: Send Email Notification
- ★ Project: Restart Application & Server

Demo Projects	
Git Project	https://gitlab.com/twn-devops-bootcamp/latest/14-automation-with-python

Check your progress... 1/5



Introduction to Boto3 (AWS SDK for Python)

- ☒ Watched video

Install Boto3 & Connect to AWS

- ☒ Watched video
- ☒ Demo executed

Useful Links:

- boto3: <https://pypi.org/project/boto3/>
- Boto3 documentation: <https://boto3.amazonaws.com/v1/documentation/api/latest/index.html>

Getting familiar with Boto API

- ☒ Watched video
- ☒ Python Script written
 - ☒ Listed VPCs
 - ☒ Created VPC and Subnets

Python vs. Terraform

- ☒ Watched video

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Project: EC2 Server Status Checks

- ☐ Watched video
- ☒ **Python Script written**
 - ☐ Preparation: Created 3 EC2 Instances with Terraform

Reference:

<https://gitlab.com/twn-devops-bootcamp/latest/14-automation-with-python/terraform>

- ☐ Print EC2 Instance State of all EC2 Instances
- ☐ Print Status Check of all EC2 Instances

Project: Scheduling the Status Checks

- ☐ Watched video
- ☒ **Python Script written**

Project: Add Environment Tags to EC2 Servers

- ☐ Watched video
- ☒ **Python Script written**
 - ☐ Get all EC2 instances from a region
 - ☐ Add the right tags to the EC2 instances

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Project: EKS Cluster Information

- ☐ Watched video
- ☒ **Python Script written**
 - ☐ Preparation: Create EKS cluster with Terraform

Reference:

<https://gitlab.com/twn-devops-bootcamp/latest/14-automation-with-python/terraform/-/tree/feature/eks>

- ☐ Get all EKS clusters
- ☐ Print cluster information: status, endpoint and K8s version

Project: Data Backup for EC2 Instances

- ☐ Watched video
- ☒ **Python Script written**
 - ☐ Preparation: Create 2 EC2 Servers with Environment Tags
 - ☐ Get Volume Ids
 - ☐ Create Snapshots from those Volumes
 - ☐ Write Scheduled Task for this Backup task
 - ☐ Create Snapshots only for Production Servers

Project: Cleanup EC2 Snapshots

- ☐ Watched video
- ☒ **Python Script written**
 - ☐ Preparation: Create 2 EC2 Servers with Environment Tags
 - ☐ Get all EC2 Snapshots
 - ☐ Delete all Snapshots, except the latest 2 created
 - ☐ Write Scheduled Task for this Cleanup task
 - ☐ Delete all Snapshots, except the latest 2 - **for each Volume**



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Project: Restore EC2 Instance Data

- ☐ Watched video
- ☒ **Python Script written**
 - ☐ Preparation: Create 2 EC2 Servers with Environment Tags
 - ☐ Create a new Volume from a Snapshot
 - ☐ Attach newly created Volume to EC2 Instance

Note: Handling Errors

- ☐ Watched video

Project: Website Monitoring - Part 1

- ☐ Watched video
- ☒ **Python Scripts written**
 - ☐ Preparation:
 - ☐ Create Server on Linode
 - ☐ Install Docker
 - ☐ Run nginx container
 - ☐ Validate Requests to nginx website

Useful Links:

- Python Library used to send requests: <https://pypi.org/project/requests/>
- HTTP Response Codes:
<https://developer.mozilla.org/en-US/docs/Web/HTTP/Status>

Check your progress... 5/5

Project: Website Monitoring - Part 2

- ☐ Watched video
- ☐ **Python Scripts written**
 - ☐ Send email when Website is down (not HTTP Status 200 - OK)
 - ☐ Write Python code
 - ☐ Configuration for your email provider (e.g. Gmail)
 - ☐ Configure Environment Variables for Credentials)
 - ☐ Send email when connection error (exception) occurs

Useful Links:

- SMTP built-in module used to send emails:
<https://docs.python.org/3/library/smtplib.html>
- Less Secure Apps Configuration: <https://myaccount.google.com/lesssecureapps>
- Google App Passwords Configuration (when Two-Step Verification):
<https://myaccount.google.com/apppasswords>
- Built-In module OS: <https://docs.python.org/3/library/os.html>

Project: Website Monitoring - Part 3

- ☐ Watched video
- ☐ **Python Scripts written**
 - ☐ Connect to server via ssh
 - ☐ Restart Docker container
 - ☐ Reboot server
 - ☐ Create Access Token in Linode
 - ☐ Connect to Linode via Linode API4 module
 - ☐ Reboot the server and restart the container
 - ☐ Write a scheduled task for this website monitoring program

Useful Links:

- External module for SSH Connection: <https://pypi.org/project/paramiko/>
- Linode API: <https://pypi.org/project/linode-api4/>
- Built-In module "time": <https://docs.python.org/3/library/time.html>