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CIS 4010: Assignment Two Part One

Describe their good points and bad points with respect to easy of programming, features, and cost:

AWS

Pros:

- VM access through SSH
- Ability to add ports
- Customize storage size
- Scalability
- A lot of information about the VM instance is available such as IP address of the instance
- Use Boto3 to create VMs
- Create key pairs to access the VM through ssh
- Typically cheaper than Azure and GCP
- Offers a free tier account and startup credits to eligible customers
- Has a large partner network to reach more customers
- Offer a wide range of security services

Cons:

- Can be charged for associated resources even if you are not actively using the resource
- Can be complex for new users
- Pay-as-you-go can lead to unexpected costs
- Limits availability of resources based on region

Azure

Pros:

- Large list of image options
- --no-wait option to create a VM in the background
- A lot of optional customization options during setup such as specifying a size
- Ability to resize an existing VM
- VM access through SSH
- Offers eligible customers $200 Azure credits to use in the first 30 days and 1 year of select free services
- Built-in security services

Cons:

- Some images are only available in certain locations
- The available size options change based on the region in which the VM is created
- Stopping the VM will still continue to bill the account – it also needs to be deallocated
- Typically more expensive than both Azure and GCP
- Can be complex for new users

GCP

Pros:

- Ability to SSH in different ways (browser shell, gcloud command, running cloud shell)
- Scalability
- GCP Firewall that can allow traffic
- Integration with other Google services and products
- $300 in free credits for new customers
- Free limited usage on select products

Cons:

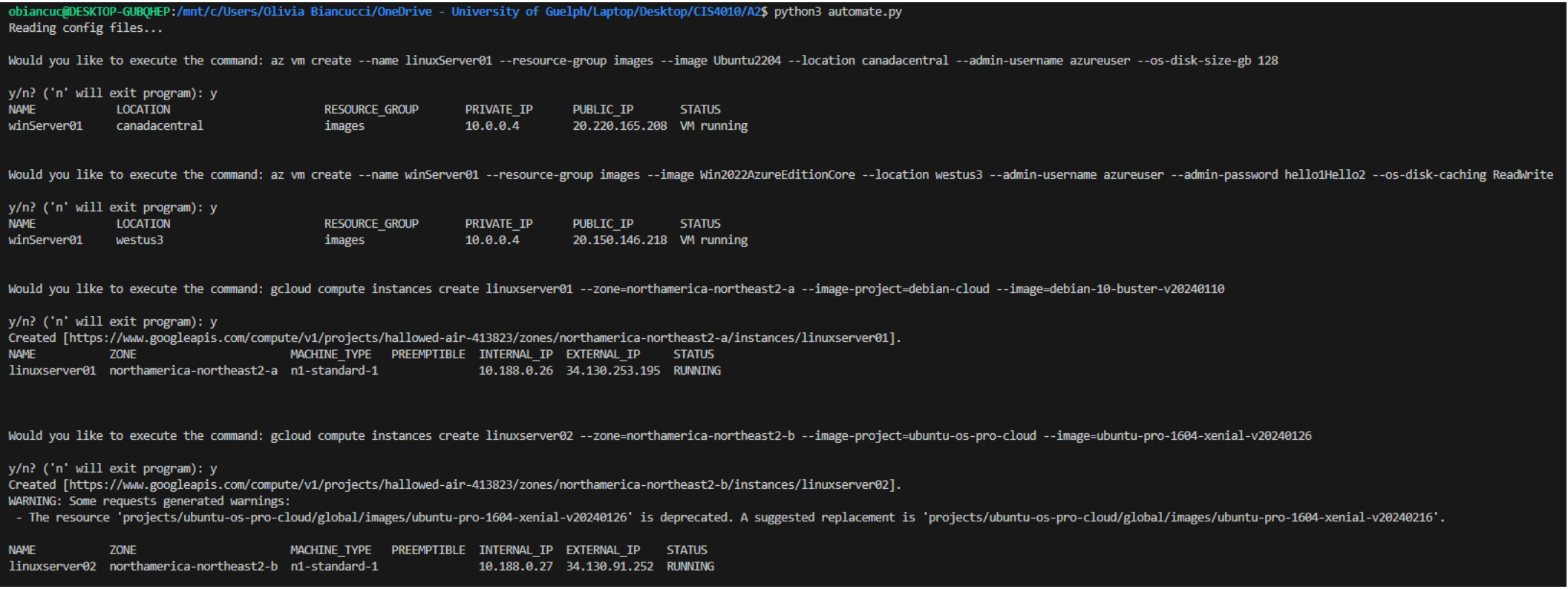
- Can be complex
- Difficult to estimate pricing before usage
- Limits the availability of services based on region
- Sub-optimal support for integration with legacy systems

Which platform would you select for a major deployment and why?

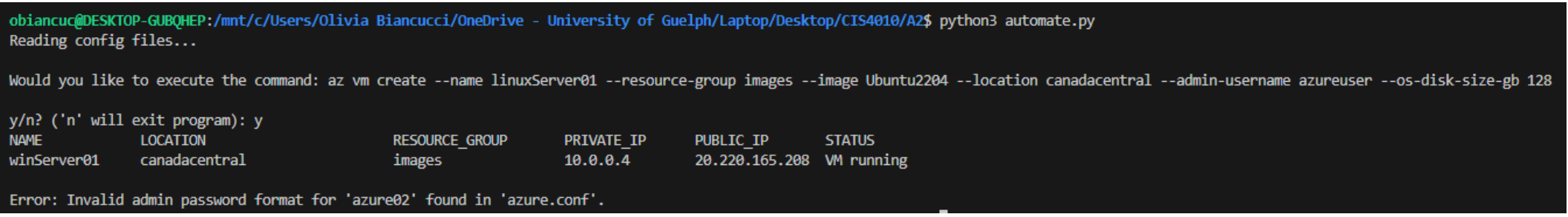
For a major deployment, I would use Amazon Web Services (AWS). AWS is one of the largest providers of infrastructure-as-a-service (IaaS) solutions and is the most popular cloud computing platform. It has the most services, features, and offers the widest variety of databases. Additionally, AWS is typically the cheapest cloud computing platform and offers a free tier of services alongside credits to use when starting up. They also offer an AWS Partner Network that one can join to grow their business and reach more customers. In addition to its extensive range of services and cost-effectiveness, AWS provides data centers in numerous regions worldwide. This global footprint ensures low-latency access to resources for users across different geographic locations, making it ideal for scaling applications globally. For these reasons, I would select Amazon Web Services for a major deployment.

Part Two Screenshots:

Demonstration of running the program to create 4 virtual machines – 2 Azure and 2 GCP machines.



Demonstration of an error handling case. Admin password for Azure did not meet the password criteria.



Demonstration of an error handling case. The file “azure.conf” not existing.