

# Terraform Class Preparation

## IMB Cloud Account

The class does require an IBM Cloud account. My understanding is that all students will have one for the start of the class.

In addition to console access (the GUI), students will also have to have command line (CLI) access to run Terraform.

CLI access requires a CLI plugin to be installed and configured on the student's computer.

The instructions for downloading and installing the plugin are located here:

<https://cloud.ibm.com/docs/cli?topic=cli-getting-started>

Some of the cloud commands may not work initially because the CLI plugin may need additional plugins that are resource specific, like object storage resources. Generally, if you need a plugin, the command line reply will tell you what you need and how to install it.

## Problems Logging in

You may find that your login credentials are rejected at the CLI. If the credentials you are using are correct, this is probably because your account may disable CLI logins by default.

In the IBM Cloud Console, select Manage --> Access (IAM) --> Settings --> Authentication

Or this link copied from my own account

<https://cloud.ibm.com/iam/settings?tab=authentication>

Under the MFA settings, the checkbox under the "none" radio button may be checked. Uncheck it to enable CLI logins with password. This is supposed to not be necessary if using an API key but I found for my account it was.

See next page for screenshot

The screenshot shows the IBM Cloud account management interface. On the left is a dark sidebar with a menu. The top of the sidebar has a hamburger menu icon, the text 'IBM Cloud', and a search icon. Below this, the 'IAM' section is expanded, showing options like 'Manage identities', 'Users', 'Trusted profiles', 'Service IDs', 'API keys', and 'Identity providers'. Further down are 'Manage access', 'Access groups', 'Authorizations', 'Roles', 'Gain insight', 'Inactive identities', 'Inactive policies', 'MFA status', and 'Settings' (which is highlighted with a blue bar). The main content area is titled 'Settings' and has four tabs: 'Account', 'Authentication' (which is selected and underlined), 'Public access', and 'Login session'. Under the 'Authentication' tab, the section is 'Multifactor authentication (MFA)'. It contains a paragraph explaining MFA and a link 'Learn more'. Below this are three radio button options: 'MFA for a user with an IBMid', 'MFA for a user with or without an IBMid', and 'None' (which is selected). Each option has a descriptive paragraph. Under the 'None' option, there is a checkbox labeled 'Disable CLI logins with only a password. This offers a higher level of security.' At the bottom of the main content area is a section titled 'User-specific MFA' with a paragraph explaining it and a link 'Learn more'.

IBM Cloud

Settings

Account Authentication Public access Login session

**Multifactor authentication (MFA)**

Enhance your organization's security by requiring your users to identify themselves by logging in with more than a username and password. [Learn more.](#)

☐ **MFA for a user with an IBMid**

Require this user authenticate by using an IBMid, password, and time-based one-time passcode (TOTP). You can enable this option for a federated or non-federated user.

☐ **MFA for a user with or without an IBMid**

Require this user to authenticate by using a security passcode that is sent by email, or for a higher level of security, use the TOTP or U2F factors. This applies if the user has an IBMid and if they are managed by an external identity provider (IdP).

☒ **None**

This user logs in by using only a standard ID and password.

☐ Disable CLI logins with only a password. This offers a higher level of security.

**User-specific MFA**

The users in this list authenticate with a different level of MFA than the account default. To update only an individual user's MFA requirement, go to their User details page. [Learn more.](#)

## Setting up the API key

You will also need to create an API key for command line access without having to log in.

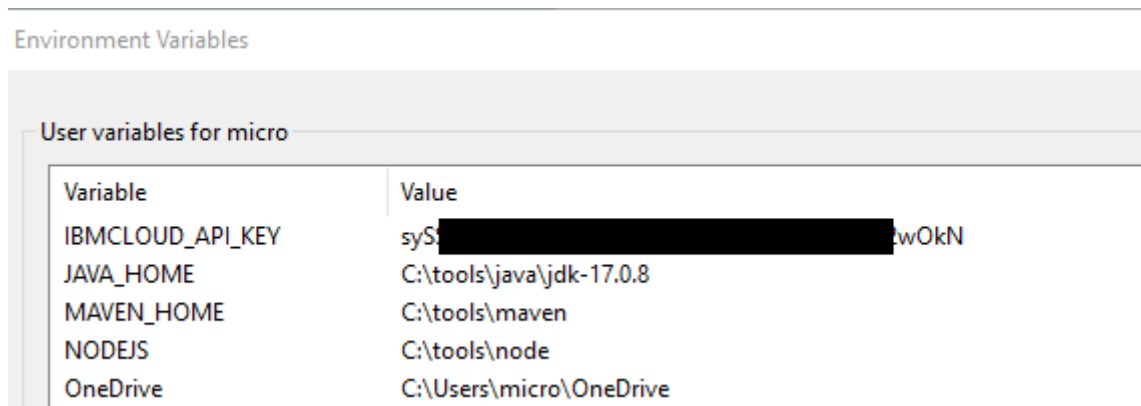
The instructions for creating it and downloading are located here

<https://www.ibm.com/docs/en/app-connect/container?topic=servers-creating-cloud-api-key>

## Installing the API key

To use the key, install it as an environment variable named IBMCLLOUD\_API\_KEY

This is a screen shot of my Windows environment variable



And of my Linux .bashrc definition

```
export IBMCLLOUD_API_KEY=syS [redacted] wOkN
```

Since I don't have a MacOS system, I'm not sure how env vars are set there by I assume it is similar to Linux

Open a new shell and check to see it is installed by doing a CLI login, you should not be prompted for a password but should see something like this.

```
(base) rod@exgnosis:~$ ibmcloud login
API endpoint: https://cloud.ibm.com
Region: us-south
Logging in with API key from environment variable...
Authenticating...
OK
```

Once that is done, download and install the Terraform binary according to the instructions here:

<https://developer.hashicorp.com/terraform/install>

And then ensure that the executable is your system path by running it and seeing this

```
(base) rod@exgnosis:~$ terraform
Usage: terraform [global options] <subcommand> [args]

The available commands for execution are listed below.
The primary workflow commands are given first, followed by
less common or more advanced commands.
```

## In Class

The setup will be reviewed at the start of the class to resolve any issues you may have