**Lab 4 Notes**

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### **[Step 1] Apply policy to restrict permissions on bucket**

1. Download the cloudstorage.py from github and add some key functions, such as create\_bucket, upload\_file

2. Run the python code. It can create bucket, parse directory and upload files.

3. Confirm the result on S3 console. It has a right folder-file hierarchy.

### **[Step 2] AES Encryption using KMS**

1. Create a new program called restorefromcloud.py

2. Define a function download\_dir to parse directory and download files. It will download the files from my bucket and put it in the ‘/tmp’ directory.

3. The ‘/tmp’ directory before run the program

4. Run the program

5. The ‘/tmp’ directory after run the program

6. It has a right folder-file hierarchy.

### **[Step 3] AES Encryption using local python library pycryptodome**

1. Install jre and check the version

2. Get the file dynamodb\_local\_latest.tar.gz and unzip it.

3. Run the DynamoDB

4. Run the create\_table.py, which is used to create the table.

5. Here is the key code. It can get some information about every file that is stored in S3 by reading the object’s variable cur and acl, then write it to the DynamoDB table.

6. Finally, scan the table to check the result.