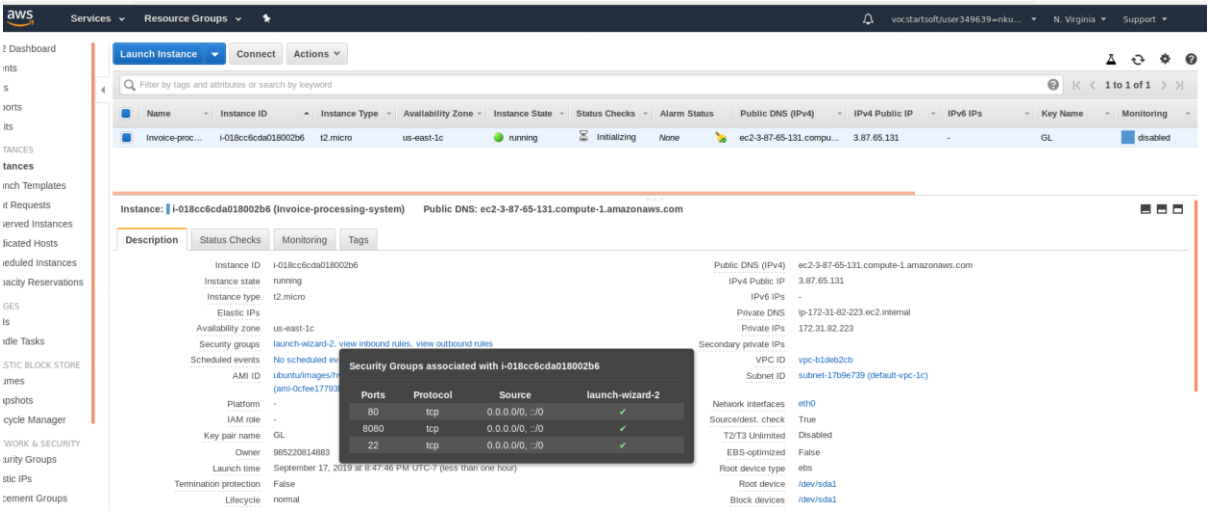
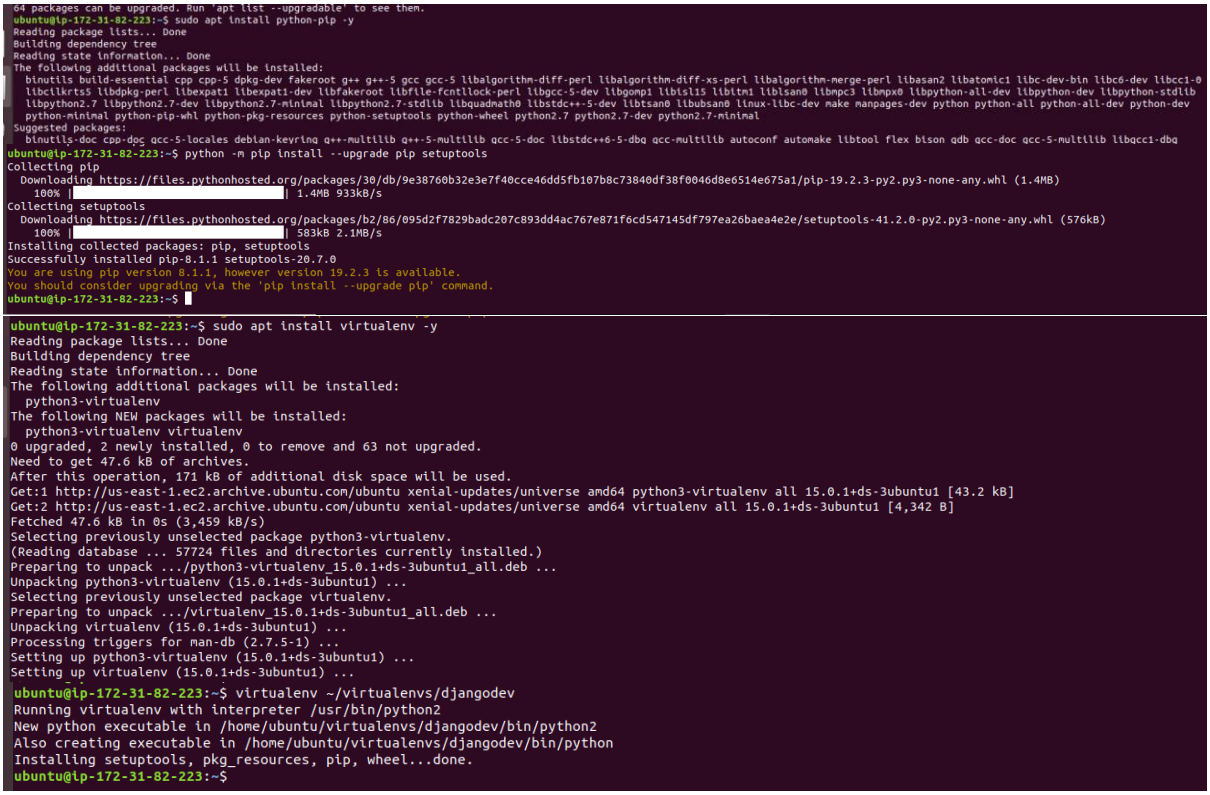
Creating an event triggered business process leveraging multiple managed services from AWS

1. Create EC2 instance which receives the notification when an invoice is placed in S3 with Python



2. Python-pip installation



```
ubuntu@ip-172-31-82-223:~$ source ~/virtualenvs/djangodev/bin/activate
(djangodev) ubuntu@ip-172-31-82-223:~$ pip install django
DEPRECATION: Python 2.7 will reach the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 won't be maintained after that date. A future version of pip will drop support for Pyt
hon 2.7. More details about Python 2 support in pip, can be found at https://pip.pypa.io/en/latest/development/release-process/#python-2-support
Collecting django
  Downloading https://files.pythonhosted.org/packages/3a/c1/dbd77256695f4b4e12b5d2c917a35963db11ce5df19c8ea6cd136b2ed54d/Django-1.11.24-py2.py3-none-any.whl (6.9MB)
    |████████████████████████████████| 7.0MB 26.4MB/s
Collecting pytz (from django)
  Downloading https://files.pythonhosted.org/packages/87/76/46d697698a143e05f77bec5a526bf4e56a0be61d63425b68f4ba553b51f2/pytz-2019.2-py2.py3-none-any.whl (508kB)
    |████████████████████████████████| 512kB 47.4MB/s
Installing collected packages: pytz, django
Successfully installed django-1.11.24 pytz-2019.2
(djangodev) ubuntu@ip-172-31-82-223:~$
(djangodev) ubuntu@ip-172-31-82-223:~$ pip install boto3
DEPRECATION: Python 2.7 will reach the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 won't be maintained after that date. A future version of pip will drop support for Pyt
hon 2.7. More details about Python 2 support in pip, can be found at https://pip.pypa.io/en/latest/development/release-process/#python-2-support
Collecting boto3
  Downloading https://files.pythonhosted.org/packages/54/47/779a4f24ccf1ea8ca0deba580b2ae3e1e804b12eca6f4d6eafbd620f60c6/boto3-1.9.230-py2.py3-none-any.whl (128kB)
    |████████████████████████████████| 133kB 32.3MB/s
Collecting s3transfer<0.3.0,>=0.2.0 (from boto3)
  Downloading https://files.pythonhosted.org/packages/16/8a/1fc3dba0c4923c2a76e1ff0d52b305c44606da63f718d14d3231e21c51b0/s3transfer-0.2.1-py2.py3-none-any.whl (70kB)
    |████████████████████████████████| 71kB 29.7MB/s
Collecting jmespath<1.0.0,>=0.7.1 (from boto3)
  Downloading https://files.pythonhosted.org/packages/83/94/7179c3832a6d45b266ddb2aac329e101367fbdb11f425f13771d27f225bb/jmespath-0.9.4-py2.py3-none-any.whl
Collecting botocore<1.13.0,>=1.12.230 (from boto3)
  Downloading https://files.pythonhosted.org/packages/13/73/8cb67ed4e5526f070a9fc79cc6b224d8fcc6cf3be8363ce50b4b951c63df/botocore-1.12.230-py2.py3-none-any.whl (5.7MB)
    |████████████████████████████████| 5.7MB 41.8MB/s
Collecting futures<4.0.0,>=2.2.0; python_version == "2.6" or python_version == "2.7" (from s3transfer<0.3.0,>=0.2.0->boto3)
  Downloading https://files.pythonhosted.org/packages/d8/a6/f46ae3f1da0cd4361c344888f59ec2f5785e69c872e175a748ef6071cdb5/futures-3.3.0-py2-none-any.whl
Collecting docutils<0.16,>=0.10 (from botocore<1.13.0,>=1.12.230->boto3)
  Downloading https://files.pythonhosted.org/packages/3a/dc/bf2b15d1fa15a6f7a9e77a61b74ecbbae7258558fcda8ffc9a6638a6b327/docutils-0.15.2-py2-none-any.whl (548kB)
    |████████████████████████████████| 552kB 51.0MB/s
Collecting python-dateutil<3.0.0,>=2.1; python_version >= "2.7" (from botocore<1.13.0,>=1.12.230->boto3)
  Downloading https://files.pythonhosted.org/packages/41/17/c62faccbfbd163c7f57f3844689e3a78bae1f403648a6afb1d0866d87fbb/python_dateutil-2.8.0-py2.py3-none-any.whl (226kB)
    |████████████████████████████████| 235kB 45.5MB/s
Collecting urllib3<1.26,>=1.20; python_version == "2.7" (from botocore<1.13.0,>=1.12.230->boto3)
  Downloading https://files.pythonhosted.org/packages/e6/60/247f23a7121ae632d62811ba7f273d0e58972d75e58a94d329d51550a47d/urllib3-1.25.3-py2.py3-none-any.whl (150kB)
    |████████████████████████████████| 153kB 49.0MB/s
Collecting six>=1.5 (from python-dateutil<3.0.0,>=2.1; python_version >= "2.7"->botocore<1.13.0,>=1.12.230->boto3)
  Downloading https://files.pythonhosted.org/packages/73/fb/00a976f728d0d1fecfe898238ce23f502a721c0ac0ecfedb80e0d88c64e9/six-1.12.0-py2.py3-none-any.whl
Installing collected packages: futures, docutils, jmespath, six, python-dateutil, urllib3, botocore, s3transfer, boto3
```

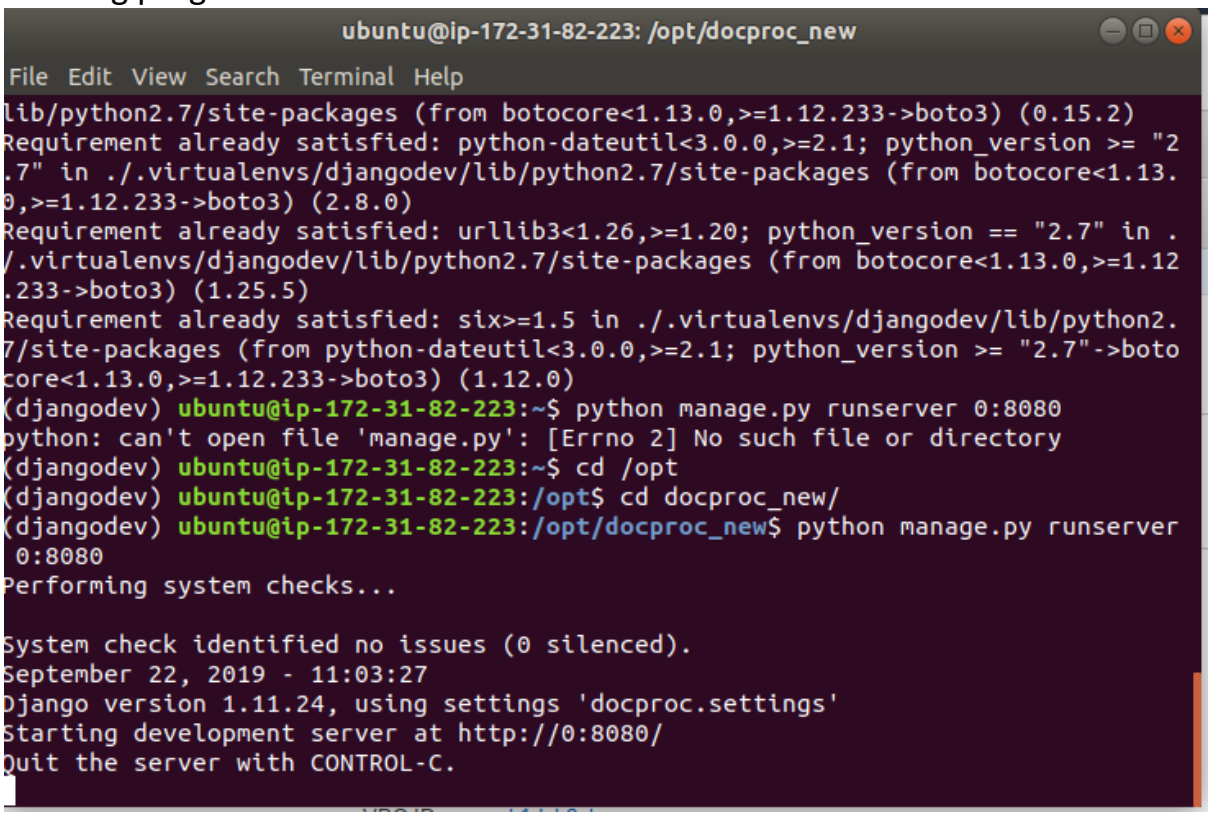
3. Copy .pem file to /opt

```
  (djangodev) ubuntu@ip-172-31-82-223:~$ sudo chown ubunt:ubuntu -R /opt
  chown: invalid user: ‘ubunt:ubuntu’
  (djangodev) ubuntu@ip-172-31-82-223:~$ sudo chown ubuntu:ubuntu -R /opt
  (djangodev) ubuntu@ip-172-31-82-223:~$ cd /opt/
  (djangodev) ubuntu@ip-172-31-82-223:/opt$
```

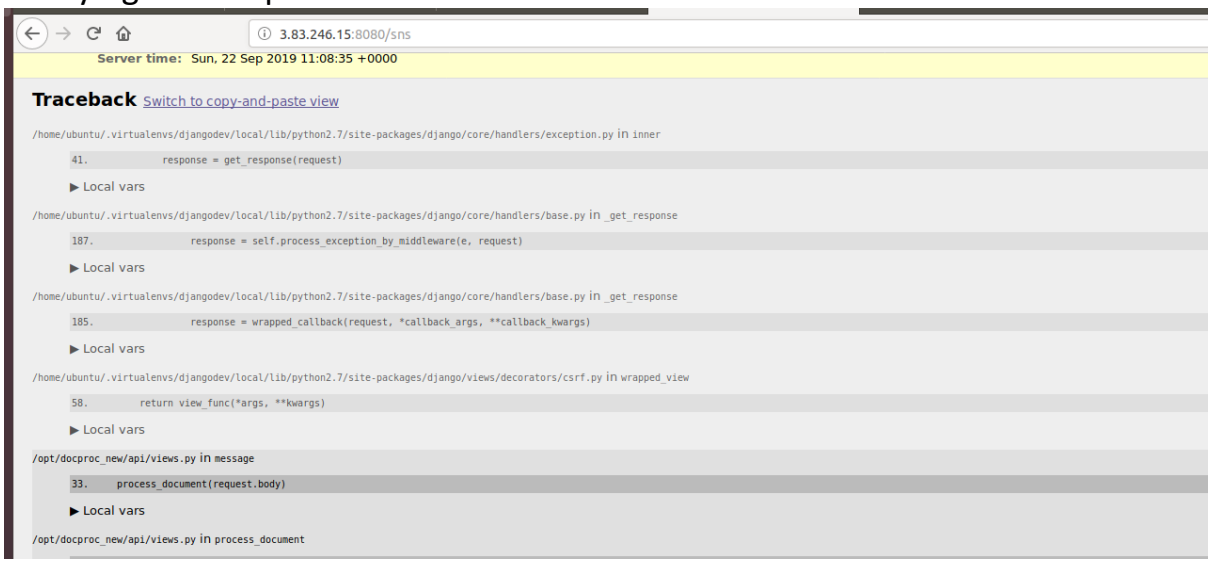
```
nkumar@ubuntu:~/Downloads$ scp -i GL.pem -r /home/nkumar/Downloads/docproc_new ubuntu@3.83.246.15:/opt/
admin.py                                      100%  128     0.5KB/s   00:00
views.py                                      100% 7865    15.0KB/s   00:00
__init__.py                                   100%    0     0.0KB/s   00:00
apps.py                                       100%  146     0.6KB/s   00:00
__init__.py                                   100%    0     0.0KB/s   00:00
tests.py                                      100%  125     0.5KB/s   00:00
models.py                                     100%  122     0.5KB/s   00:00
db.sqlite3                                    100%   37KB  72.2KB/s   00:00
settings.py                                   100% 3129     6.0KB/s   00:00
wsgi.py                                       100%  392     1.5KB/s   00:00
urls.py                                       100%  798     3.1KB/s   00:00
__init__.py                                   100%    0     0.0KB/s   00:00
manage.py                                     100%  805     3.1KB/s   00:00
nkumar@ubuntu:~/Downloads$
```

```
(djangodev) ubuntu@ip-172-31-82-223:/opt$ ls
docproc  docproc_new
(djangodev) ubuntu@ip-172-31-82-223:/opt$ cd docproc_new/
(djangodev) ubuntu@ip-172-31-82-223:/opt/docproc_new$ ls
api  db.sqlite3  docproc  manage.py
(djangodev) ubuntu@ip-172-31-82-223:/opt/docproc_new$
```

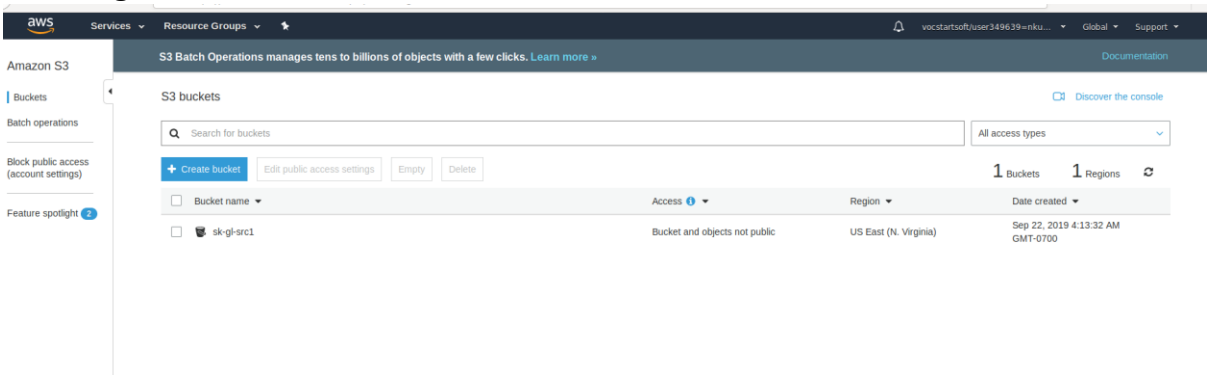
4. Running program on 8080



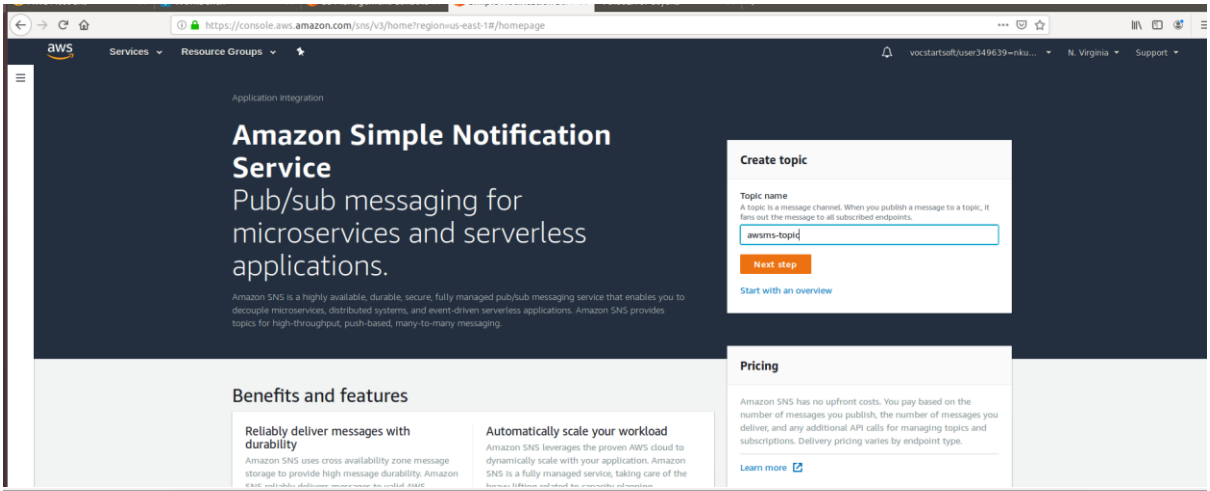
5. Verifying the endpoint access

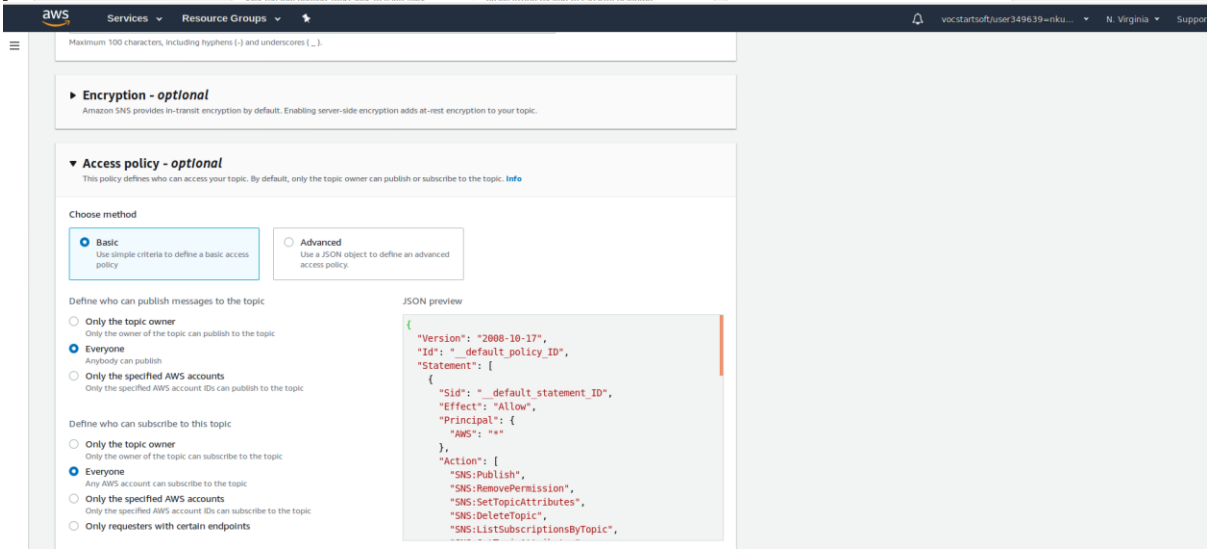


6. Creating Source bucket in S3

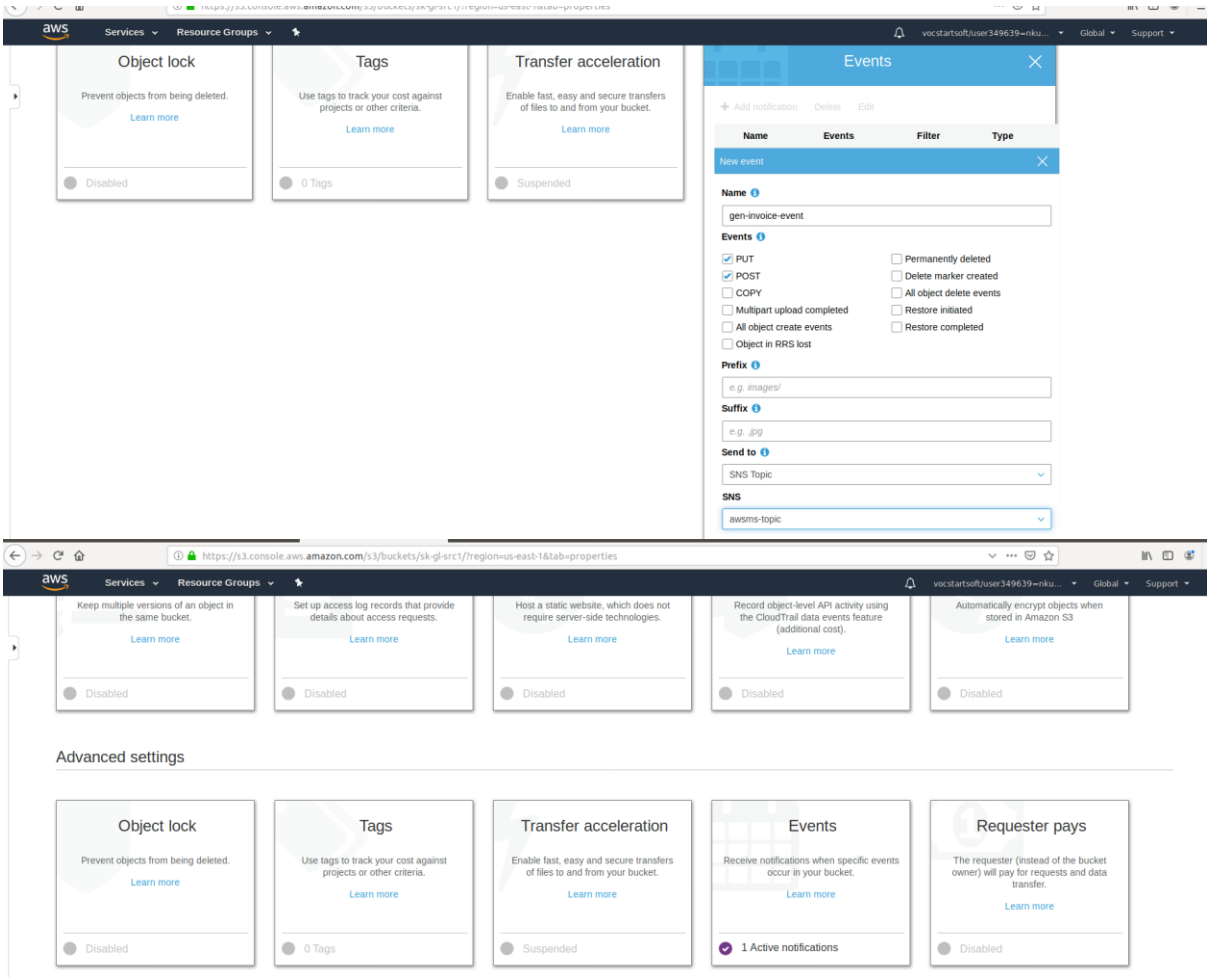


7. Create SNS

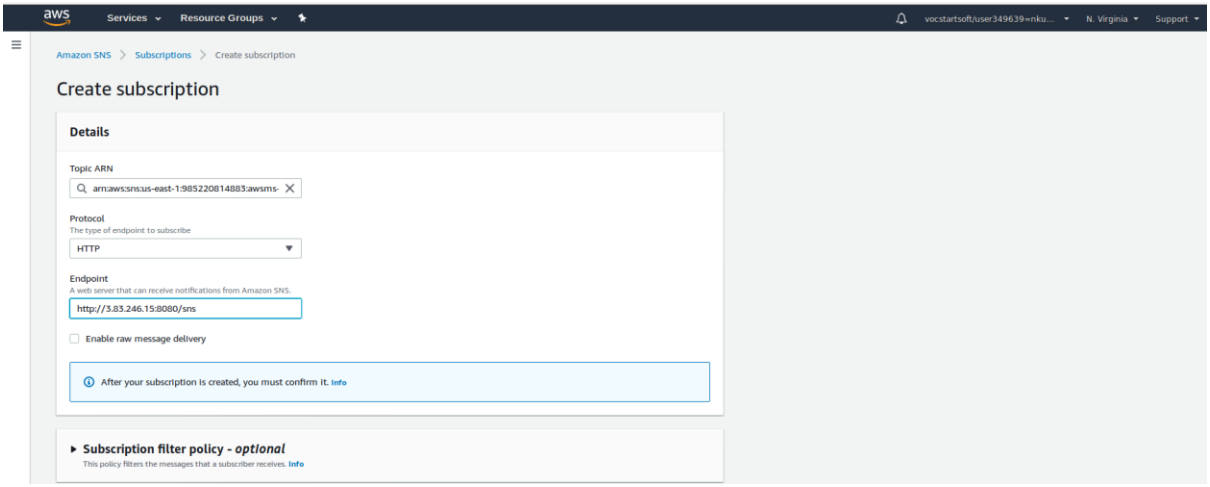




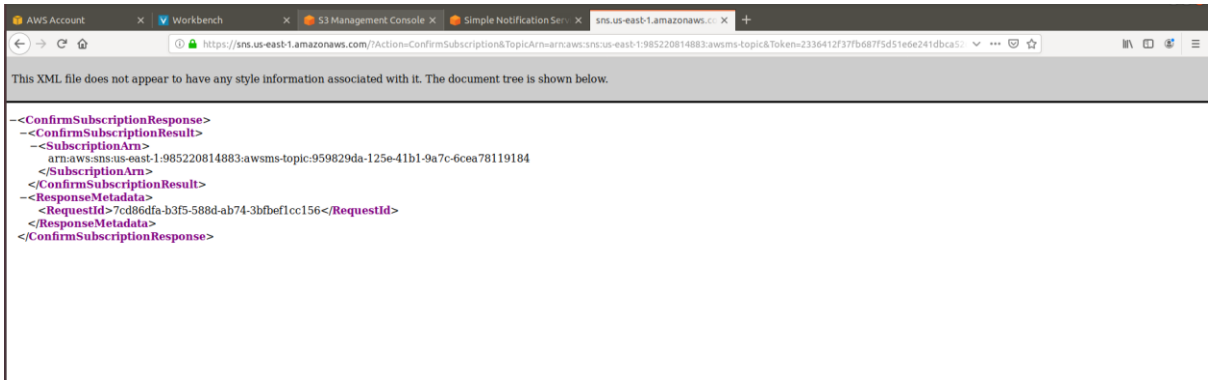
8. Generate the events in S3 bucket



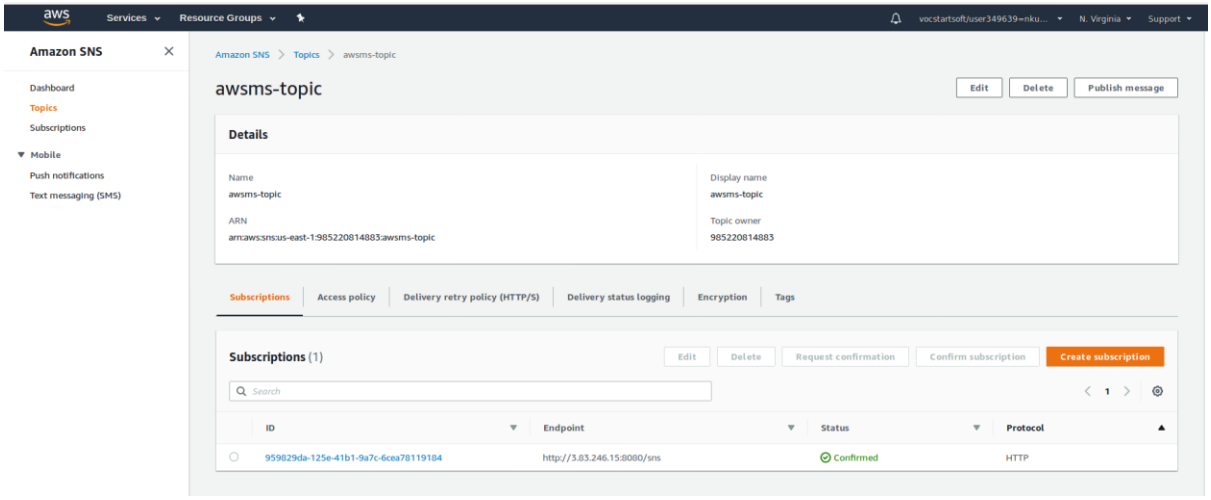
9. Create the subscription in SNS



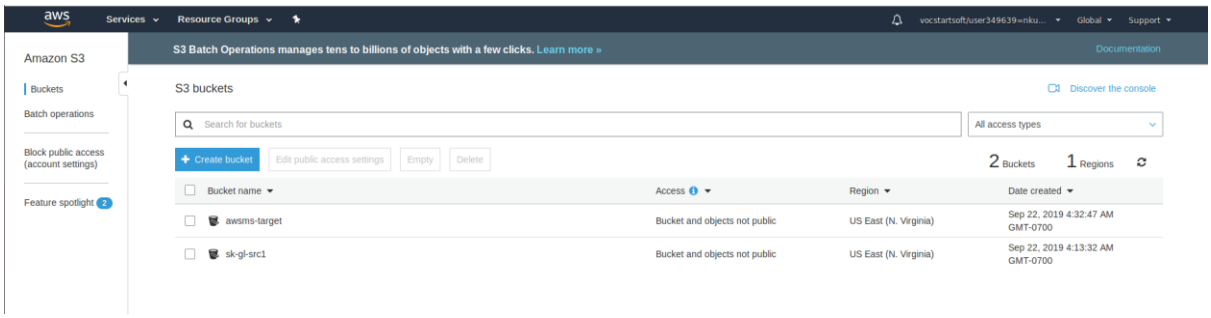
10. SNS Subscribe confirmation



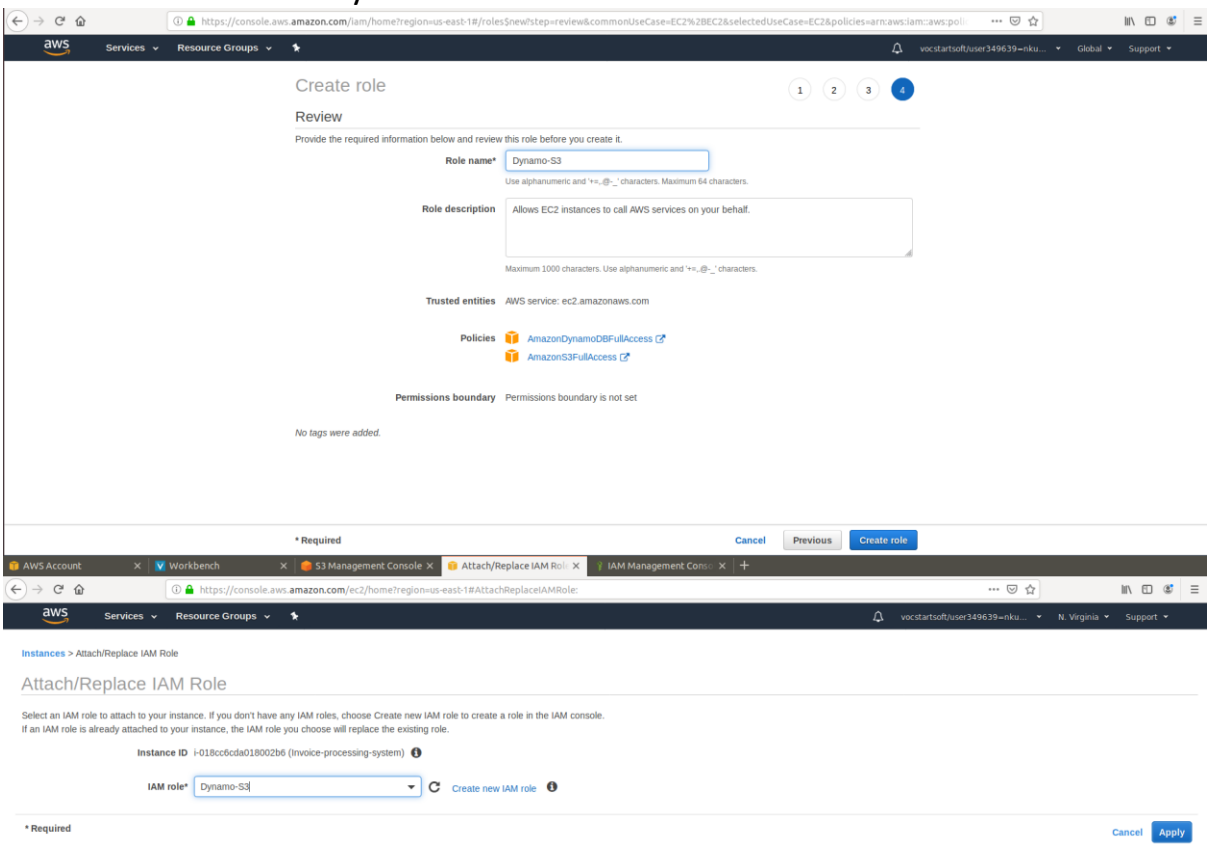
11. Verifying subscription under SNS topic



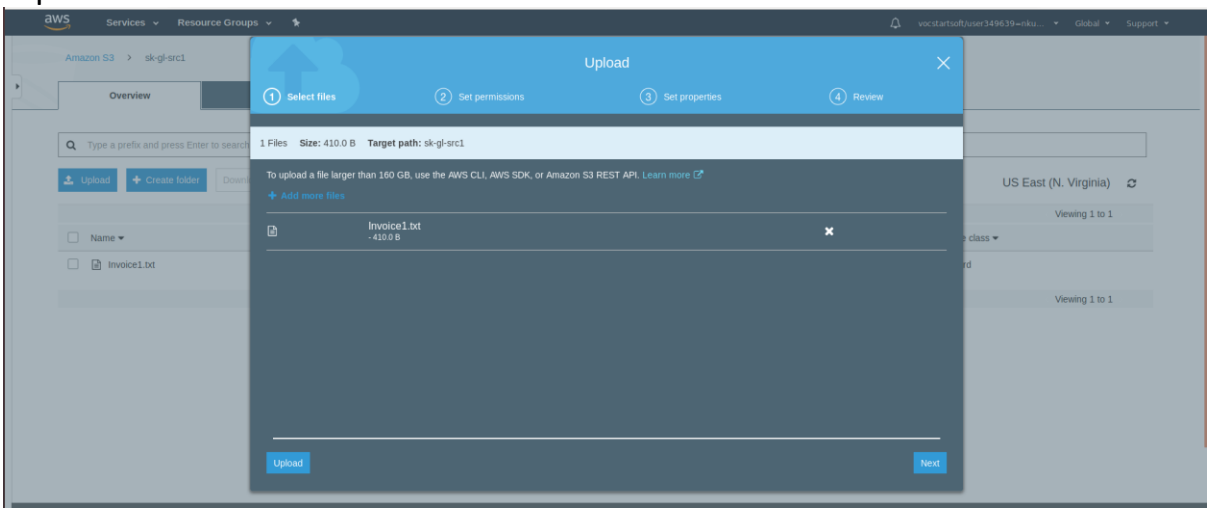
12. Create the destination confirmation



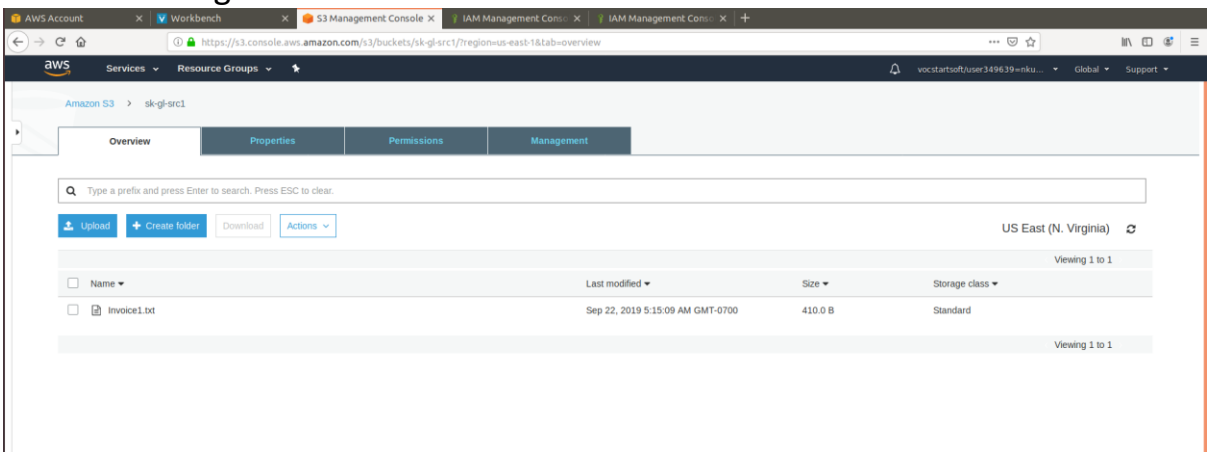
13. Create role to access Dynamo-DB and S3



14. Upload invoice to Source bucket



15. Invoice in Target Bucket



16. Invoice table inserted in Dynamo-DB Table