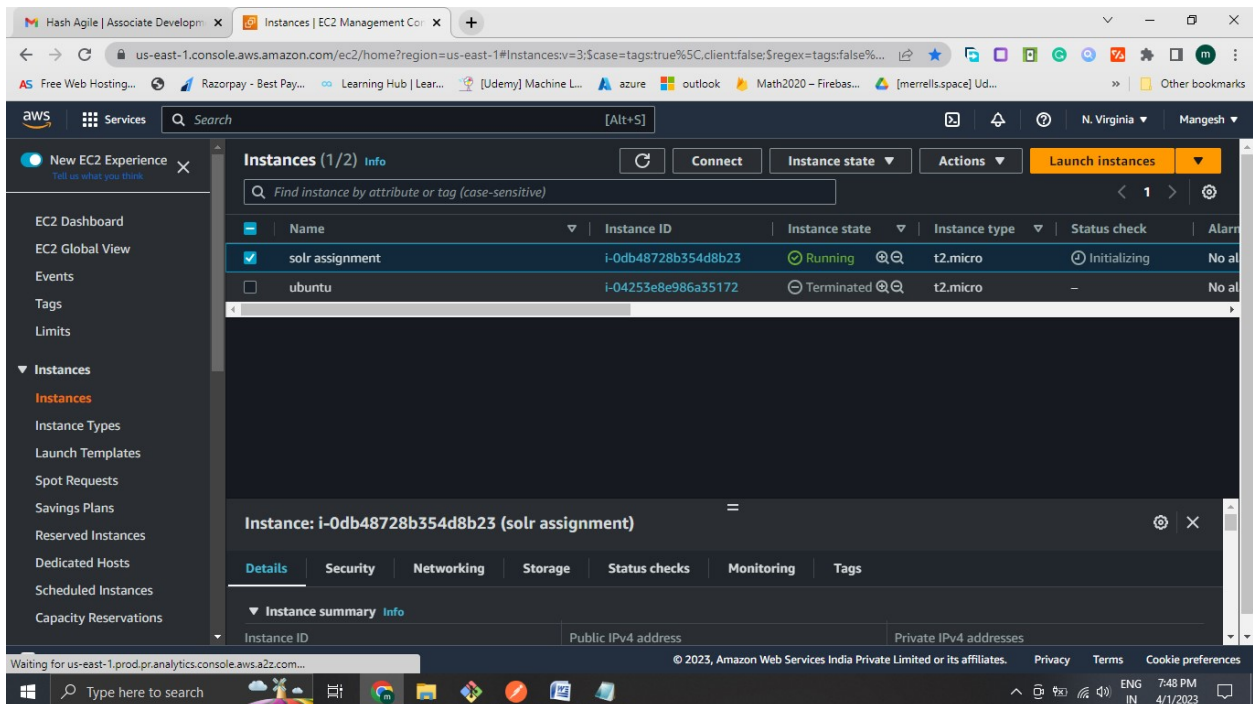
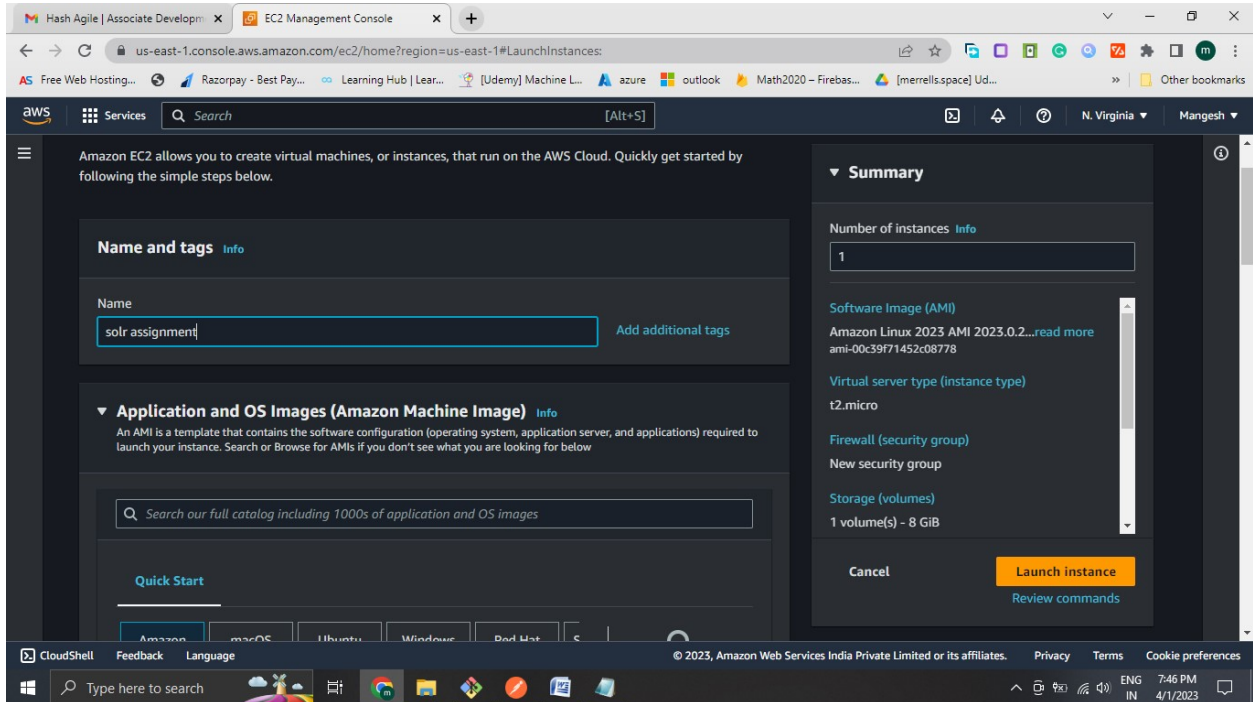


Apache solr

I used aws ec2 ubuntu for this assignment

Step1:created ec2 instance and allowed 8983 port



Step1:Update system

sudo apt-get update

```
root@ip-172-31-81-175: ~  
root@ip-172-31-81-175:~# Sudo apt-get updat  
Command 'Sudo' not found, did you mean:  
  command 'ludo' from snap ludo (0.16.20)  
  command 'sudo' from deb sudo (1.9.9-1ubuntu2.3)  
  command 'sudo' from deb sudo-ldap (1.9.9-1ubuntu2.3)  
  command 'udo' from deb udo (6.4.1-6)  
See 'snap info <snapname>' for additional versions.  
root@ip-172-31-81-175:~# sudo apt-get updat  
E: Invalid operation update  
root@ip-172-31-81-175:~# sudo apt-get update  
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease  
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]  
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [108 kB]  
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]  
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]  
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]  
Get:7 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [728 kB]  
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]  
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]  
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]  
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]  
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [989 kB]  
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [210 kB]  
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [13.9 kB]  
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [743 kB]  
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [115 kB]  
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [588 B]  
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [898 kB]  
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [180 kB]  
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [18.5 kB]  
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [24.1 kB]  
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [6312 B]  
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [444 B]  
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [40.6 kB]  
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [9800 B]  
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]  
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]  
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [20.3 kB]  
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [14.4 kB]  
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [480 B]  
Get:31 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
```

Step2 install java

sudo apt-get install python-software-properties -y

sudo add-apt-repository ppa:webupd8team/java -y

sudo apt-get update -y

sudo apt-get install default-jre default-jdk -y

```
root@ip-172-31-81-175: ~
root@ip-172-31-81-175:~# sudo apt-get install python-software-properties -y
sudo add-apt-repository ppa:webupd8team/java -y
sudo apt-get update -y
sudo apt-get install default-jre default-jdk -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package python-software-properties is not available, but is referred to by another package.
This may mean that the package is missing, has been obsoleted, or
is only available from another source
However the following packages replace it:
  software-properties-common

E: Package 'python-software-properties' has no installation candidate
Repository: 'deb https://ppa.launchpadcontent.net/webupd8team/java/ubuntu/ jammy main'
Description:
The Oracle JDK License has changed for releases starting April 16, 2019.

The new Oracle Technology Network License Agreement for Oracle Java SE is substantially different from prior Oracle JDK licenses. The new license per
mits certain uses, such as personal use and development use, at no cost -- but other uses authorized under prior Oracle JDK licenses may no longer be
available. Please review the terms carefully before downloading and using this product. An FAQ is available here: https://www.oracle.com/technetwork
/java/javase/overview/oracle-jdk-faqs.html

Oracle Java downloads now require logging in to an Oracle account to download Java updates, like the latest Oracle Java 8u211 / Java SE 8u212. Becaus
e of this I cannot update the PPA with the latest Java (and the old links were broken by Oracle).

For this reason, THIS PPA IS DISCONTINUED.

UPDATE:

For Oracle Java 17, see a different PPA -> https://www.linuxuprising.com/2021/09/how-to-install-oracle-java-17-lts-on.html

Old description:

Oracle Java (JDK) Installer (automatically downloads and installs Oracle JDK8). There are no actual Java files in this PPA.

Important -> Why Oracle Java 7 And 6 Installers No Longer Work: http://www.webupd8.org/2017/06/why-oracle-java-7-and-6-installers-no.html

Update: Oracle Java 9 has reached end of life: http://www.oracle.com/technetwork/java/javase/downloads/jdk9-downloads-3848520.html

The PPA supports Ubuntu 18.10, 18.04, 16.04, 14.04 and 12.04.
```

Step 3: Download Solr 8.2

cd /tmp

sudo wget <https://archive.apache.org/dist/lucene/solr/8.2.0/solr-8.2.0.tgz>

```
root@ip-172-31-81-175: /tmp
Adding key to /etc/apt/trusted.gpg.d/webupd8team-ubuntu-java.gpg with fingerprint 7B2C380889BF5709A105D03AC2518248EEA14886
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Ign:5 https://ppa.launchpadcontent.net/webupd8team/java/ubuntu jammy InRelease
Err:6 https://ppa.launchpadcontent.net/webupd8team/java/ubuntu jammy Release
  404 Not Found [IP: 185.125.190.52 443]
Reading package lists... Done
E: The repository 'https://ppa.launchpadcontent.net/webupd8team/java/ubuntu jammy Release' does not have a Release file.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Ign:5 https://ppa.launchpadcontent.net/webupd8team/java/ubuntu jammy InRelease
Err:6 https://ppa.launchpadcontent.net/webupd8team/java/ubuntu jammy Release
  404 Not Found [IP: 185.125.190.52 443]
Reading package lists... Done
E: The repository 'https://ppa.launchpadcontent.net/webupd8team/java/ubuntu jammy Release' does not have a Release file.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package -y
root@ip-172-31-81-175:~# cd /tmp
root@ip-172-31-81-175: /tmp# sudo wget https://archive.apache.org/dist/lucene/solr/8.2.0/solr-8.2.0.tgz
--2023-04-01 14:22:31-- https://archive.apache.org/dist/lucene/solr/8.2.0/solr-8.2.0.tgz
Resolving archive.apache.org (archive.apache.org)... 138.201.131.134, 2a01:4f8:172:2ec5::2
Connecting to archive.apache.org (archive.apache.org)|138.201.131.134|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 181899182 (173M) [application/x-gzip]
Saving to: 'solr-8.2.0.tgz'

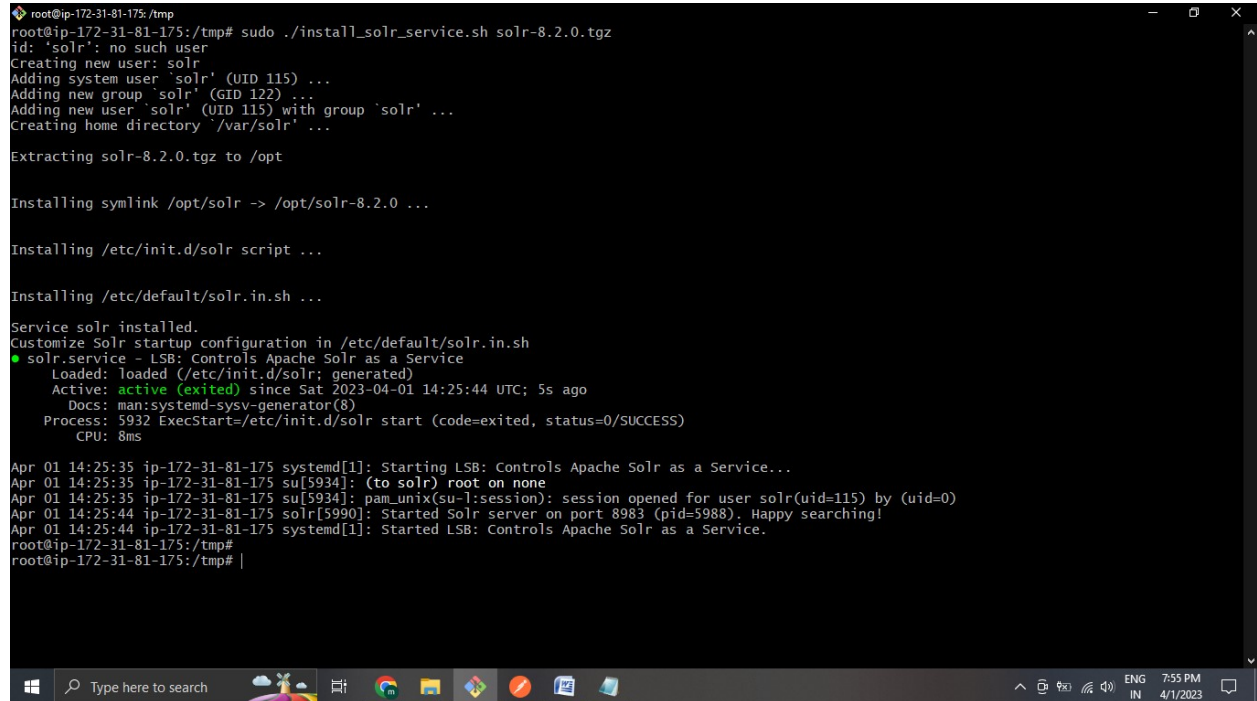
solr-8.2.0.tgz                               100%[=====>] 173.47M  16.6MB/s   in 11s

2023-04-01 14:22:43 (15.6 MB/s) - 'solr-8.2.0.tgz' saved [181899182/181899182]
root@ip-172-31-81-175: /tmp#
```

Step 4: Extract Solr 8.2

```
sudo tar xzf solr-8.2.0.tgz solr-8.2.0/bin/install_solr_service.sh --strip-components=2
```

```
sudo ./install_solr_service.sh solr-8.2.0.tgz
```



```
root@ip-172-31-81-175:/tmp# sudo ./install_solr_service.sh solr-8.2.0.tgz
id: 'solr': no such user
Creating new user: solr
Adding system user 'solr' (UID 115) ...
Adding new group 'solr' (GID 122) ...
Adding new user 'solr' (UID 115) with group 'solr' ...
Creating home directory '/var/solr' ...
Extracting solr-8.2.0.tgz to /opt

Installing symlink /opt/solr -> /opt/solr-8.2.0 ...

Installing /etc/init.d/solr script ...

Installing /etc/default/solr.in.sh ...

Service solr installed.
Customize Solr startup configuration in /etc/default/solr.in.sh
● solr.service - LSB: Controls Apache Solr as a Service
   Loaded: loaded (/etc/init.d/solr; generated)
   Active: active (exited) since Sat 2023-04-01 14:25:44 UTC; 5s ago
     Docs: man:systemd-sysv-generator(8)
   Process: 5932 ExecStart=/etc/init.d/solr start (code=exited, status=0/SUCCESS)
    CPU: 8ms

Apr 01 14:25:35 ip-172-31-81-175 systemd[1]: Starting LSB: Controls Apache Solr as a Service...
Apr 01 14:25:35 ip-172-31-81-175 su[5934]: (to solr) root on none
Apr 01 14:25:35 ip-172-31-81-175 su[5934]: pam_unix(su-l:session): session opened for user solr(uid=115) by (uid=0)
Apr 01 14:25:44 ip-172-31-81-175 solr[5990]: Started Solr server on port 8983 (pid=5988). Happy searching!
Apr 01 14:25:44 ip-172-31-81-175 systemd[1]: Started LSB: Controls Apache Solr as a Service.
root@ip-172-31-81-175:/tmp#
```

```
sudo systemctl status solr.service
```



```
root@ip-172-31-81-175: /tmp
root@ip-172-31-81-175:/tmp# sudo systemctl status solr.service
● solr.service - LSB: Controls Apache Solr as a Service
   Loaded: loaded (/etc/init.d/solr; generated)
   Active: active (exited) since Sat 2023-04-01 14:25:44 UTC; 1min 5s ago
     Docs: man:systemd-sysv-generator(8)
    Process: 5932 ExecStart=/etc/init.d/solr start (code=exited, status=0/SUCCESS)
      CPU: 8ms

Apr 01 14:25:35 ip-172-31-81-175 systemd[1]: Starting LSB: Controls Apache Solr as a Service...
Apr 01 14:25:35 ip-172-31-81-175 su[5934]: (to solr) root on none
Apr 01 14:25:35 ip-172-31-81-175 su[5934]: pam_unix(su-1:session): session opened for user solr(uid=115) by (uid=0)
Apr 01 14:25:44 ip-172-31-81-175 solr[5990]: Started Solr server on port 8983 (pid=5988). Happy searching!
Apr 01 14:25:44 ip-172-31-81-175 systemd[1]: Started LSB: Controls Apache Solr as a Service.
root@ip-172-31-81-175:/tmp#
```

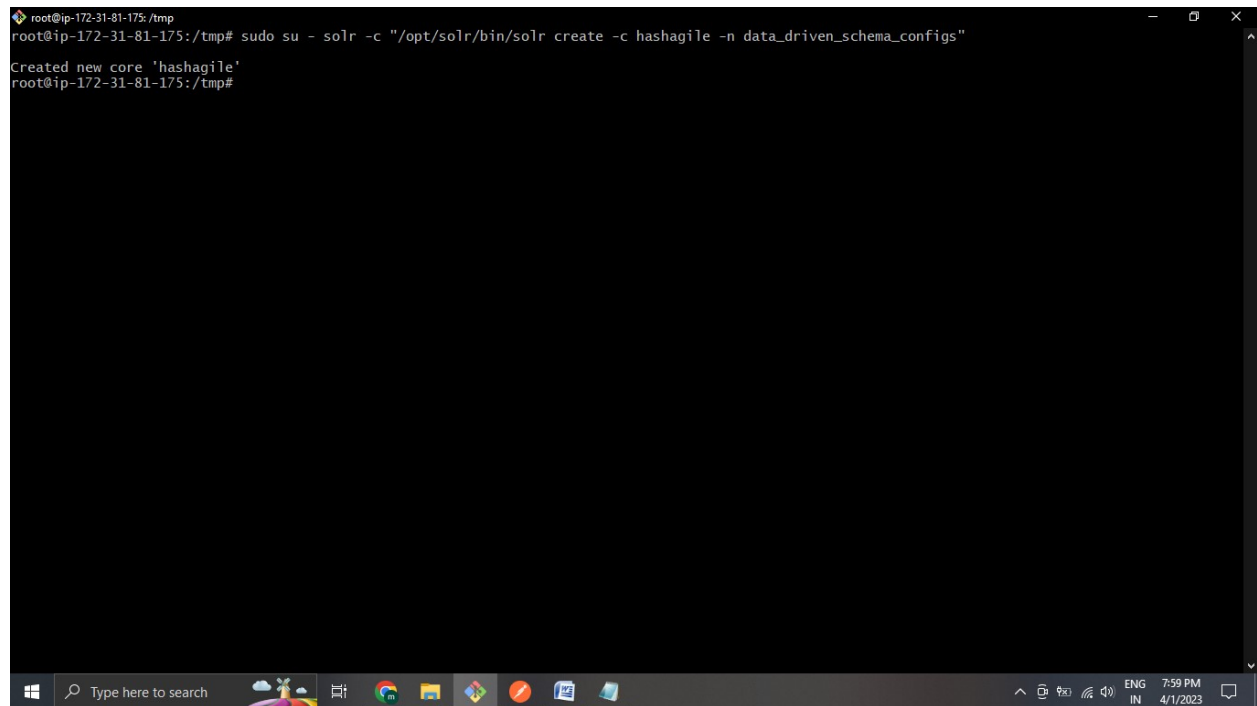
Step 5: Testing Solr

<http://localhost:8983> or http://ip_address:8983

The screenshot displays the Solr Admin web interface in a browser. The address bar shows the URL `http://34.201.70.236:8983/solr/#/`. The interface includes a sidebar with navigation links like Dashboard, Logging, Core Admin, Java Properties, Thread Dump, and a message about no cores available. The main content area is divided into sections: Instance (Start button, 2 minutes ago), Versions (listing solr-spec, solr-impl, lucene-spec, and lucene-impl), and JVM (showing runtime, processors, and arguments). On the right, a 'System' panel displays resource usage: Physical Memory at 92.6% (894.57 MB / 966.20 MB), File Descriptor Count at 0.0% (158 / 1048576), and JVM-Memory at 7.0% (35.96 MB / 512.00 MB).

Step 7: Creating a Core

`sudo su - solr -c "/opt/solr/bin/solr create -c core_name_here -n data_driven_schema_configs"`



```
root@ip-172-31-81-175: /tmp
root@ip-172-31-81-175:/tmp# sudo su - solr -c "/opt/solr/bin/solr create -c hashagile -n data_driven_schema_configs"
Created new core 'hashagile'
root@ip-172-31-81-175:/tmp#
```

The image shows a terminal window with a black background and white text. The prompt is `root@ip-172-31-81-175: /tmp`. The command entered is `sudo su - solr -c "/opt/solr/bin/solr create -c hashagile -n data_driven_schema_configs"`. The output is `Created new core 'hashagile'`. The prompt then changes to `root@ip-172-31-81-175:/tmp#`. The terminal window has a standard Windows taskbar at the bottom with various icons and the system clock showing 7:59 PM on 4/1/2023.

Step 8: Upload Data

Solr Admin interface showing the Documents section for the 'hashagile' collection. The Request-Handler (qt) is set to /update. The Document Type is JSON. The Document(s) field contains two JSON documents:

```
{
  "patent_number": "10000000",
  "patent_date": "2018-06-19",
  "patent_title": "Coherent LADAR using intra-pixel quadrature detection"
},
{
  "patent_number": "10000001",
  "patent_date": "2018-06-19",
  "patent_title": "Injection molding machine and mold thickness control method"
}
```

The Commit Within is set to 1000, and the Overwrite checkbox is checked. The Submit Document button is visible.

Solr Admin interface showing the Query section for the 'hashagile' collection. The Request-Handler (qt) is set to /select. The Query (q) field contains the query: `http://34.201.70.236:8983/solr/hashagile/select?q=""%3A"`. The Raw Query Parameters field contains `key1=val1&key2=val2`. The Query Results field displays the following JSON response:

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 82,
    "params": {
      "q": ""%3A",
      "_": "1680359431934"
    }
  },
  "response": {
    "numFound": 25, "start": 0, "docs": [
      {
        "patent_number": ["10000000"],
        "patent_date": ["2018-06-19T00:00:00Z"],
        "patent_title": ["Coherent LADAR using intra-pixel quadrature detection"],
        "id": ["071f6676-ce65-430e-9d9f-e41763b9f9e9"],
        "_version_": ["1761984563343523840"]
      },
      {
        "patent_number": ["10000001"],
        "patent_date": ["2018-06-19T00:00:00Z"],
        "patent_title": ["Injection molding machine and mold thickness control method"],
        "id": ["fac7035-d569-4fa1-a4a5-a316e0a34b3d"],
        "_version_": ["1761984563344732864"]
      },
      {
        "patent_number": ["10000002"],
        "patent_date": ["2018-06-19T00:00:00Z"],
        "patent_title": ["Method for manufacturing polymer film and co-extruded film"],
        "id": ["69bf1eb8-d861-4ac0-b02e-50afcfc175a2"],
        "_version_": ["17619845633448381440"]
      },
      {
        "patent_number": ["10000003"],

```

Create schema

Hash Agile | Associate Developm... x https://api.patentsview.org/pate... x 34.201.70.236:8983/solr/hashagi... x Instances | EC2 Management Cor... x

Not secure | 34.201.70.236:8983/solr/hashagile3/select?q=%3A*

Free Web Hosting... Razorpay - Best Pay... Learning Hub | Lear... [Udemy] Machine L... azure outlook Math2020 - Firebas... [merrells.space] Ud... Other bookmarks

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 0,
    "params": {
      "q": "%3A*"
    }
  },
  "response": {
    "numFound": 25,
    "start": 0,
    "docs": [
      {
        "patent_number": "10000000",
        "patent_date": "2018-06-19",
        "patent_title": "Coherent LADAR using intra-pixel quadrature detection",
        "id": "0f8ba248-6029-4315-ab59-3c94ff23d3e0",
        "version": "1761985138766381000"
      },
      {
        "patent_number": "10000001",
        "patent_date": "2018-06-19",
        "patent_title": "Injection molding machine and mold thickness control method",
        "id": "89a409c0-6395-46dc-8920-65867aa38543",
        "version": "1761985138773721000"
      },
      {
        "patent_number": "10000002",
        "patent_date": "2018-06-19",
        "patent_title": "Method for manufacturing polymer film and co-extruded film",
        "id": "9025cc63-eb63-43da-acff-11cbcc81a58e",
        "version": "1761985138773721000"
      }
    ]
  }
}
```

Raw Parsed

Type here to search

ENG IN 8:10 PM 4/1/2023