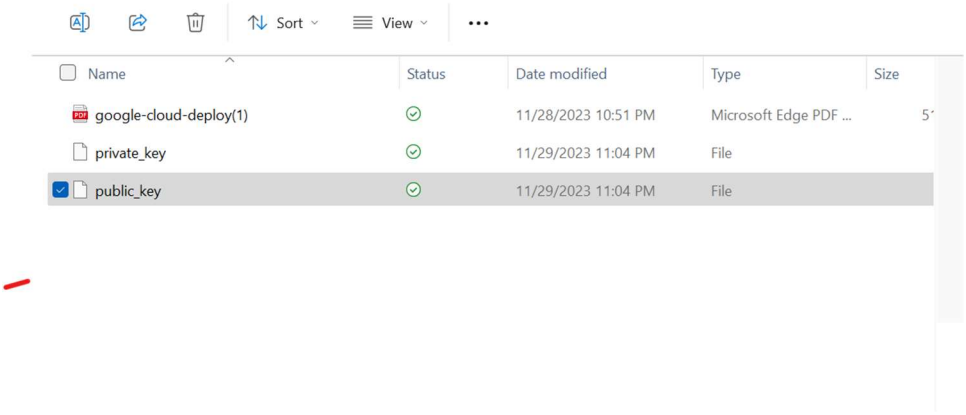
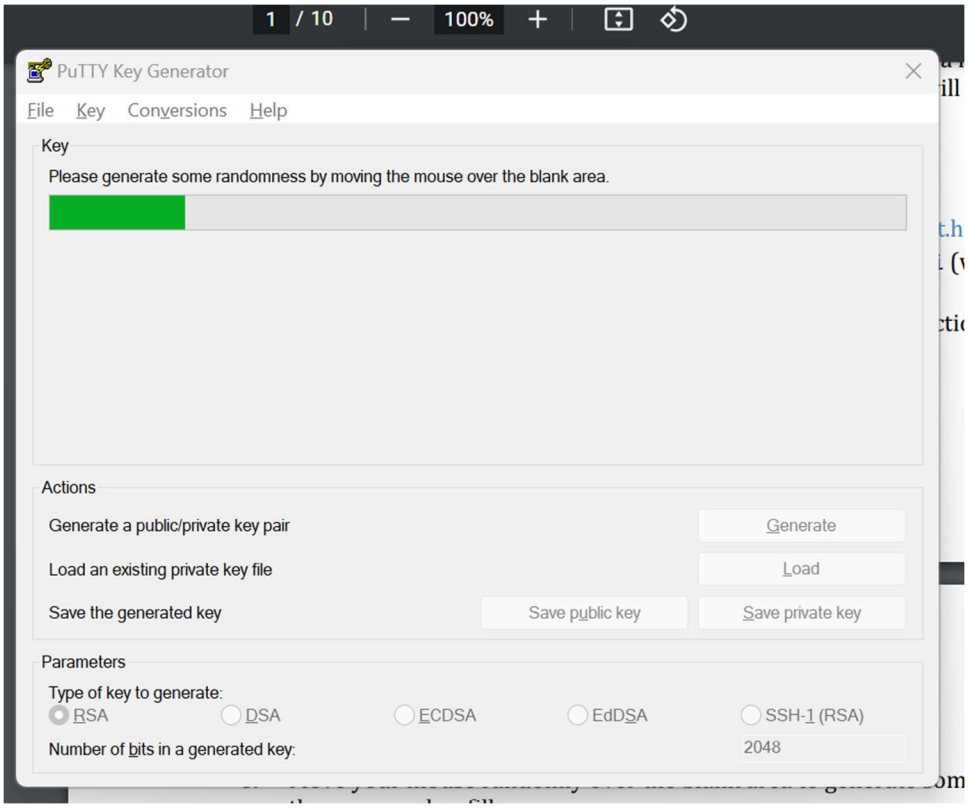
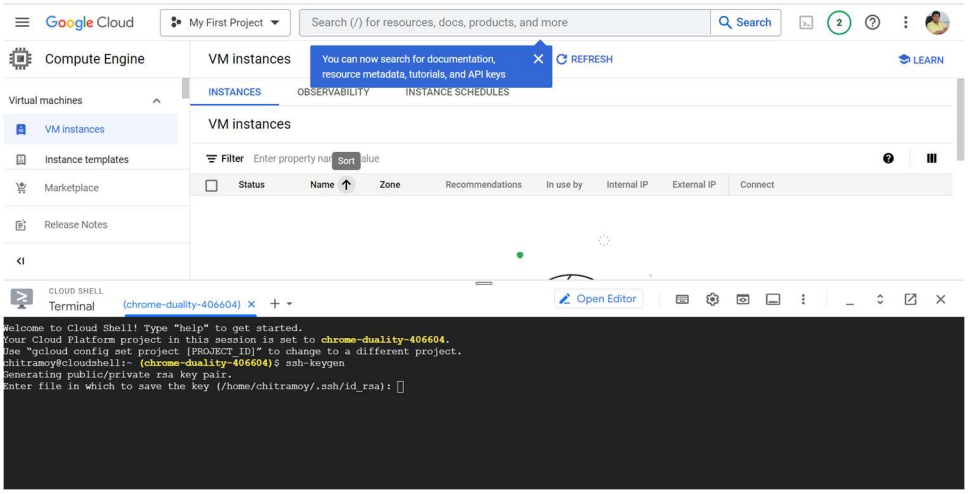
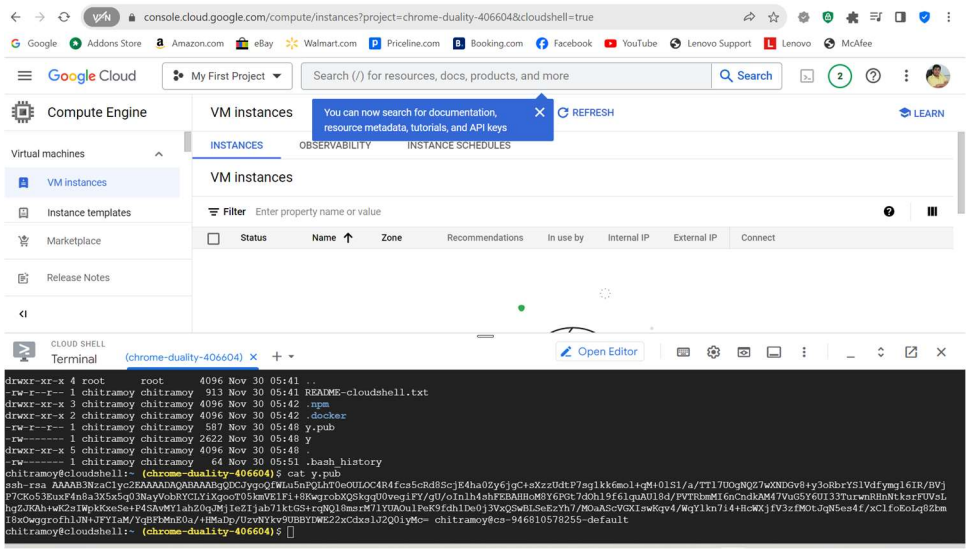
Saving public and private key during putty installation:

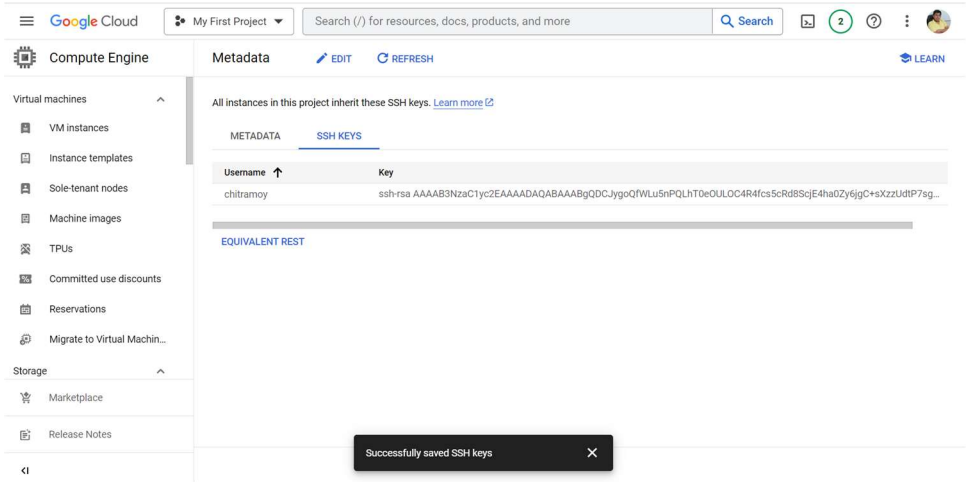


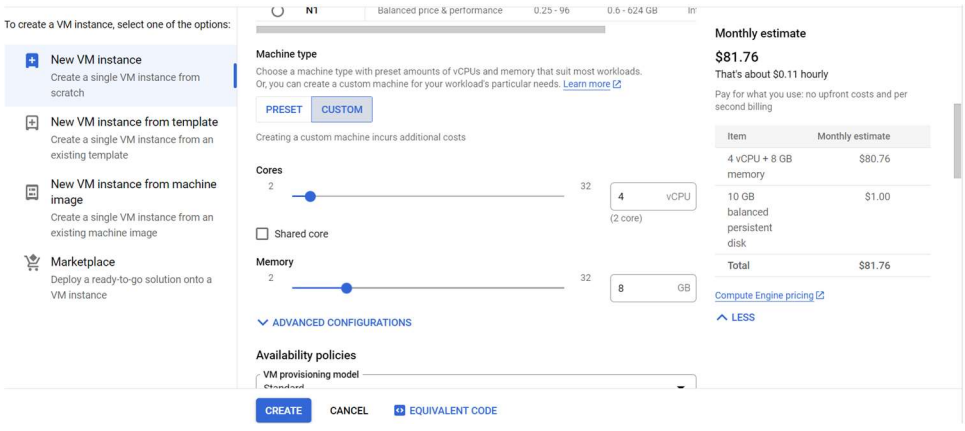


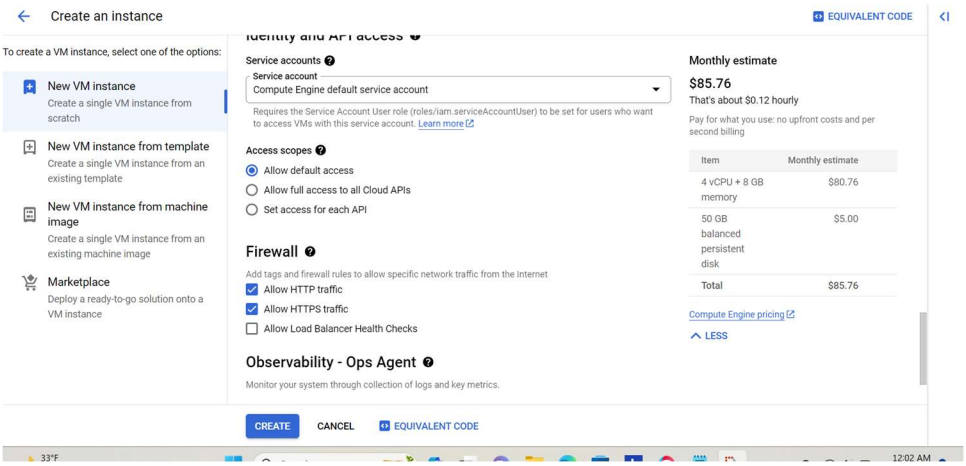
Adding an SSH Key to Your Google Cloud Instance :

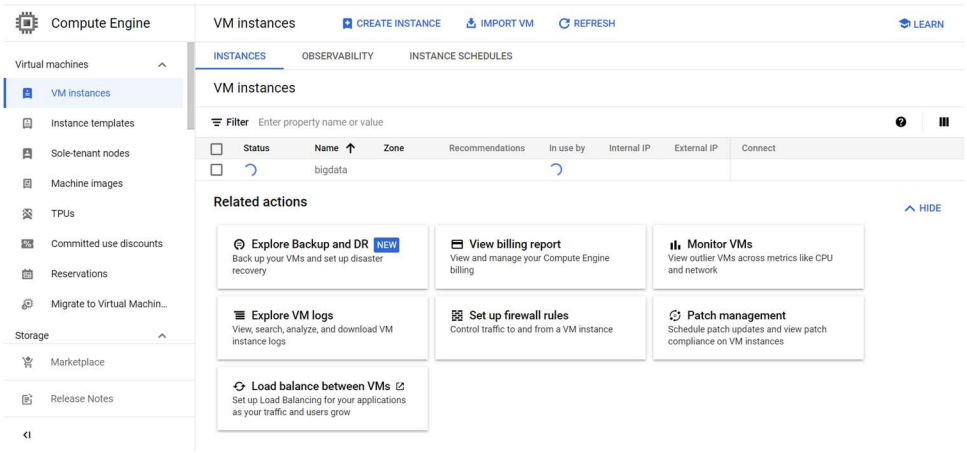


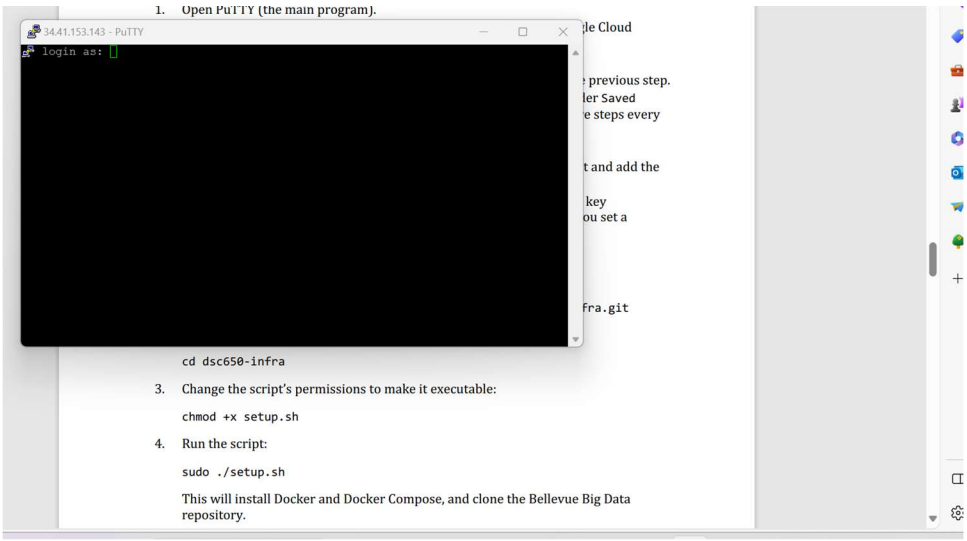

console.cloud.google.com/compute/instances?project=chrome-duality-406604&cloudshell=true
Google Cloud
My First Project
Search (/) for resources, docs, products, and more
Search
Compute Engine
VM instances
You can now search for documentation, resource metadata, tutorials, and API keys
REFRESH
LEARN
INSTANCES
OBSERVABILITY
INSTANCE SCHEDULES
Virtual machines
VM instances
Instance templates
Marketplace
Release Notes
VM instances
Filter
Enter property name or value
Status
Name
Zone
Recommendations
In use by
Internal IP
External IP
Connect
CLOUD SHELL
Terminal
(chrome-duality-406604)
Open Editor
drwxr-xr-x 4 root root 4096 Nov 30 05:41 ..
-rw-r--r-- 1 chitramoy chitramoy 913 Nov 30 05:41 README-cloudshell.txt
drwxr-xr-x 3 chitramoy chitramoy 4096 Nov 30 05:42 .npm
drwxr-xr-x 2 chitramoy chitramoy 4096 Nov 30 05:42 .docker
-rw-r--r-- 1 chitramoy chitramoy 587 Nov 30 05:48 y.pub
-rw------- 1 chitramoy chitramoy 2622 Nov 30 05:48 y
drwxr-xr-x 5 chitramoy chitramoy 4096 Nov 30 05:48 .
-rw------- 1 chitramoy chitramoy 64 Nov 30 05:51 .bash_history
chitramoy@cloudshell:~ (chrome-duality-406604)$ cat y.pub
chitramoy@cloudshell:~ (chrome-duality-406604)$


Google Cloud
My First Project
Search (/) for resources, docs, products, and more
Search
Compute Engine
Metadata
EDIT
REFRESH
LEARN
Virtual machines
VM instances
Instance templates
Sole-tenant nodes
Machine images
TPUs
Committed use discounts
Reservations
Migrate to Virtual Machin...
Storage
Marketplace
Release Notes
All instances in this project inherit these SSH keys. Learn more
METADATA
SSH KEYS
Username
Key
chitramoy
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDCJygoQfWLu5nPQLhT0eOULOC4R4fcs5cRd8ScjE4ha0Zy6jgC+sXzzUdtP7sg...
EQUIVALENT REST
Successfully saved SSH keys


To create a VM instance, select one of the options:
New VM instance
Create a single VM instance from scratch
New VM instance from template
Create a single VM instance from an existing template
New VM instance from machine image
Create a single VM instance from an existing machine image
Marketplace
Deploy a ready-to-go solution onto a VM instance
Machine type
Choose a machine type with preset amounts of vCPUs and memory that suit most workloads.
Or, you can create a custom machine for your workload's particular needs. Learn more
PRESET
CUSTOM
Creating a custom machine incurs additional costs
Cores
2
32
4
vCPU
(2 core)
Shared core
Memory
2
32
8
GB
ADVANCED CONFIGURATIONS
Availability policies
VM provisioning model
Monthly estimate
$81.76
That's about $0.11 hourly
Pay for what you use: no upfront costs and per second billing
Item
Monthly estimate
4 vCPU + 8 GB memory
$80.76
10 GB balanced persistent disk
$1.00
Total
$81.76
Compute Engine pricing
LESS
CREATE
CANCEL
EQUIVALENT CODE


Create an instance
EQUIVALENT CODE
To create a VM instance, select one of the options:
New VM instance
Create a single VM instance from scratch
New VM instance from template
Create a single VM instance from an existing template
New VM instance from machine image
Create a single VM instance from an existing machine image
Marketplace
Deploy a ready-to-go solution onto a VM instance
Service accounts
Service account
Compute Engine default service account
Requires the Service Account User role (roles/iam.serviceAccountUser) to be set for users who want to access VMs with this service account. Learn more
Access scopes
Allow default access
Allow full access to all Cloud APIs
Set access for each API
Firewall
Add tags and firewall rules to allow specific network traffic from the Internet
Allow HTTP traffic
Allow HTTPS traffic
Allow Load Balancer Health Checks
Observability - Ops Agent
Monitor your system through collection of logs and key metrics.
Monthly estimate
$85.76
That's about $0.12 hourly
Pay for what you use: no upfront costs and per second billing
Item
Monthly estimate
4 vCPU + 8 GB memory
$80.76
50 GB balanced persistent disk
$5.00
Total
$85.76
Compute Engine pricing
LESS
CREATE
CANCEL
EQUIVALENT CODE


Compute Engine
VM instances
CREATE INSTANCE
IMPORT VM
REFRESH
LEARN
Virtual machines
VM instances
Instance templates
Sole-tenant nodes
Machine images
TPUs
Committed use discounts
Reservations
Migrate to Virtual Machin...
Storage
Marketplace
Release Notes
INSTANCES
OBSERVABILITY
INSTANCE SCHEDULES
VM instances
Filter
Enter property name or value
Status
Name
Zone
Recommendations
In use by
Internal IP
External IP
Connect
bigdata
Related actions
HIDE
Explore Backup and DR
NEW
Back up your VMs and set up disaster recovery
View billing report
View and manage your Compute Engine billing
Monitor VMs
View outlier VMs across metrics like CPU and network
Explore VM logs
View, search, analyze, and download VM instance logs
Set up firewall rules
Control traffic to and from a VM instance
Patch management
Schedule patch updates and view patch compliance on VM instances
Load balance between VMs
Set up Load Balancing for your applications as your traffic and users grow


34.41.153.143 - PuTTY
login as:
1. Open PuTTY (the main program).
previous step.
ler Saved
e steps every
t and add the
key
ou set a
fra.git
cd dsc650-infra
3. Change the script's permissions to make it executable:
chmod +x setup.sh
4. Run the script:
sudo ./setup.sh
This will install Docker and Docker Compose, and clone the Bellevue Big Data repository.

SSH-in-browser UPLOAD FILE DOWNLOAD FILE

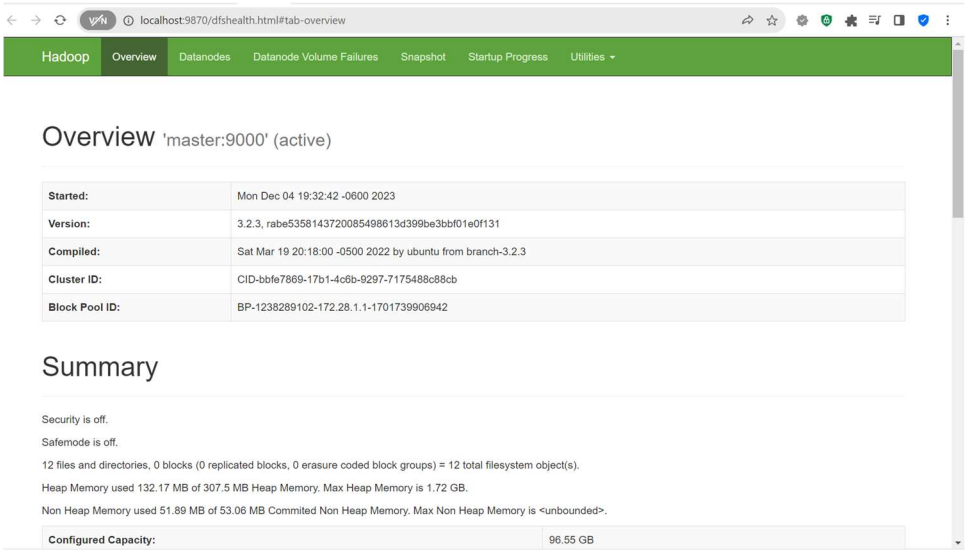
```
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/annotations-4.1.1.4.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/animal-sniffer-annotations-1.23.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/grpc-util-1.58.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/grpc-alts-1.58.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/grpc-grpclb-1.58.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/conscrypt-openjdk-uber-2.5.2.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/grpc-netty-shaded-1.58.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/perfmark-api-0.26.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/grpc-googleapis-1.58.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/grpc-xds-1.58.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/opencensus-proto-0.2.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/grpc-services-1.58.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/re2j-1.7.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/gax-httpjson-2.35.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/gson-2.10.1.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/google-http-client-1.43.3.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/httpclient-4.5.14.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/httpcore-4.4.16.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/opencensus-contrib-http-util-0.31.1.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/google-http-client-gson-1.43.3.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/protobuf-java-util-3.24.3.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/threetenbp-1.6.8.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/grpc-google-iam-v1-1.21.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/grpc-auth-1.58.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/proto-google-iam-v1-1.21.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/google-auth-library-oauth2-http-1.19.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/nifi-property-protection-hashicorp-1.24.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/nifi-hashicorp-vault-api-1.24.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/nifi-hashicorp-vault-1.24.0.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/spring-vault-core-2.3.4.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/spring-context-5.3.30.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/spring-aop-5.3.30.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/spring-expression-5.3.30.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/spring-beans-5.3.30.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/spring-web-5.3.30.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/spring-core-5.3.30.jar
  inflating: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/lib/properties/spring-jcl-5.3.30.jar
+ rm -rf /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0-bin.zip
+ cd /home/chitramoy/dsc650-infra
+ set +x
root@bigdata:/home/chitramoy/dsc650-infra#
```

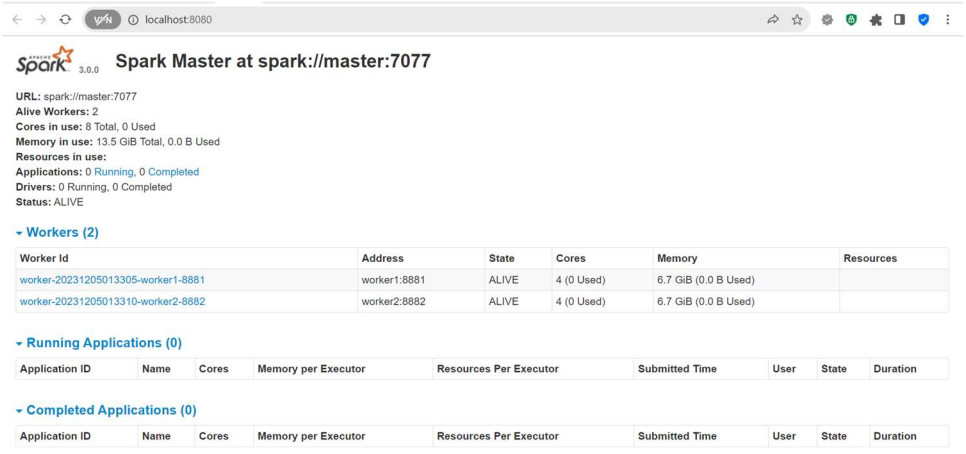
```
+ rm -rf /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0-bin.zip
+ cd /home/chitramoy/dsc650-infra
+ set +x
root@bigdata:/home/chitramoy/dsc650-infra# cd bellevue-bigdata
root@bigdata:/home/chitramoy/dsc650-infra/bellevue-bigdata# ls -ltr
total 16
drwxrwxr-x 4 chitramoy chitramoy 4096 Dec  3 01:22 hadoop-hive-spark-hbase
drwxrwxr-x 2 chitramoy chitramoy 4096 Dec  3 01:22 solr
drwxrwxr-x 4 chitramoy chitramoy 4096 Dec  3 01:22 kafka
drwxr-xr-x 3 root      root      4096 Dec  3 01:25 nifi
root@bigdata:/home/chitramoy/dsc650-infra/bellevue-bigdata#
```

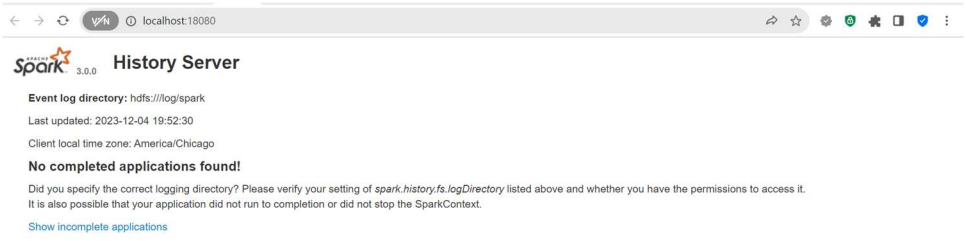
```
Java home:
NiFi home: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0

Bootstrap Config File: /home/chitramoy/dsc650-infra/bellevue-bigdata/nifi/nifi-1.24.0/conf/bootstrap.conf


chitramoy@bigdata:~/dsc650-infra/bellevue-bigdata/nifi$ cd ../^C
chitramoy@bigdata:~/dsc650-infra/bellevue-bigdata/nifi$ cd ../hadoop-hive-spark-hbase
chitramoy@bigdata:~/dsc650-infra/bellevue-bigdata/hadoop-hive-spark-hbase$ sudo docker-compose up -d
Creating network "hadoop-hive-spark-hbase_spark_net" with the default driver
Creating volume "hadoop-hive-spark-hbase_data_share" with default driver
Pulling hivemetastore (postgres:11.5)...
11.5: Pulling from library/postgres
80369df48736: Pull complete
b18dd0a6efec: Pull complete
5c20c5b8227d: Pull complete
c5a7f905c8ec: Pull complete
5a3f55930dd8: Pull complete
ffc097878b09: Pull complete
3106d02490d4: Pull complete
88d1fc513b8f: Pull complete
f7d9cc27056d: Pull complete
afe180d8d5fd: Pull complete
b73e04acbb5f: Pull complete
1dba81bb6cfd: Pull complete
26bf23ba2b27: Pull complete
09ead80f0070: Pull complete
Digest: sha256:b3770d9c4ef11eba1ff5893e28049e98e2b70083e519e0b2bce0a20e7aa832fe
Status: Downloaded newer image for postgres:11.5
Pulling zool (zookeeper:)...
latest: Pulling from library/zookeeper
cbe3537751ce: Extracting [=====>                                             ]  3.604MB/30.45MB
6cd63fc495d1: Download complete
9c42674dea4f: Download complete
a992519bbaee: Download complete
506583e9517b: Download complete
0c6ffc1887e7: Download complete
d1e538b3b240: Verifying Checksum
36e1c57a1201: Downloading [>                                                  ]  208.4kB/20.42MB
3ec89468a939: Waiting
```

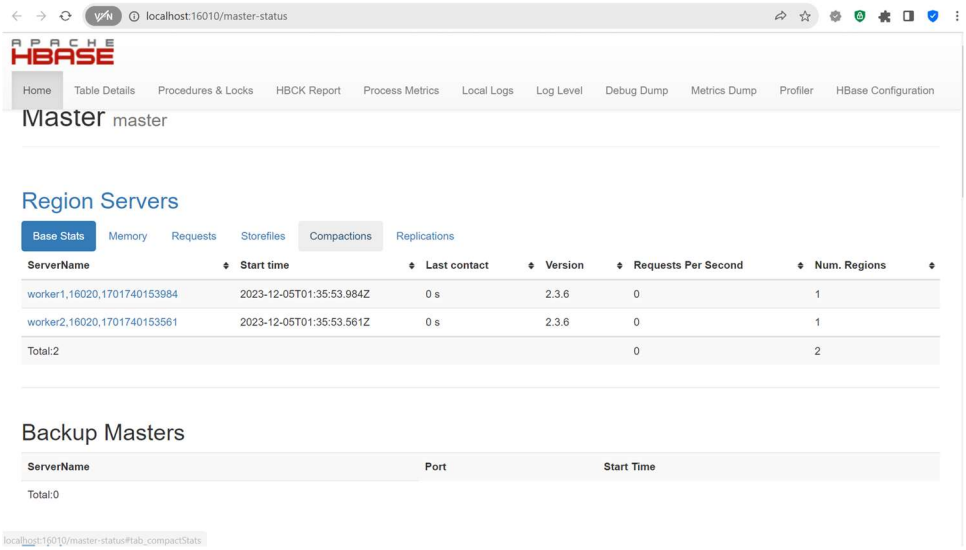
```
PS C:\Users\14024> cd ~/.ssh
PS C:\Users\14024\.ssh> ls -ltr
Get-ChildItem : A parameter cannot be found that matches parameter name 'ltr'.
At line:1 char:4
+ ls -ltr
+    ~~~~
    + CategoryInfo          : InvalidArgument: (:) [Get-ChildItem], ParameterBindingException
    + FullyQualifiedErrorId : NamedParameterNotFound,Microsoft.PowerShell.Commands.GetChildItemCommand

PS C:\Users\14024\.ssh> ls


    Directory: C:\Users\14024\.ssh


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----         12/3/2023  10:39 PM           2610 id_rsa
-a----         12/3/2023  10:39 PM            576 id_rsa.pub
-a----         12/3/2023  10:36 PM             95 known_hosts


PS C:\Users\14024\.ssh> cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQCd9YU2j0pFQThggu72y0XTo1vnOJ7ddxuAH+H0WVFd0nKZnnm7hxI9Iq6VO85cEo8vUsr8h3gPpy1w5KYjjxV+LoDEBw4JF
UhjHUjpgOo5ClRO2K1mS3ueSXRIUTFY+wyhz8eDvNLlPVXErFjjPdT0Ry1+kBl5jnlHfbRxsV58vVKkuDx+2tg2lo7wha2q3lDdGwIbJb+RzGxq4djkzWsd3Y8/gK4gXzqoka
ccUoBI3vY6DtBH5l3QtkfOtiplyCjnEDO1Fh+4IwSUJ4UZntGGMkMy8xnihKP0waN7XtV32YrcmiIjQOFuV3vLOcg98E3RLqLSEi8u/VBYNTOAWzz5lku7XVg+RTRSCzaGWNG
p1a2DeTwNfFVh/n7TRxVbZ7mVLiKXLMoDJpvrQcgQAGCj9hQvnYRg/sHQ8Cy8V/R0VXy4YJ1UuqVViyMcu9yNhf209S8q13r94BFwXyV4YF6P2HLzN2OyCqVViXkeRGQPYmC1
ARXjs4TZQokcXKc8tbE= 14024@DESKTOP-P1ETEQ5
PS C:\Users\14024\.ssh>
```

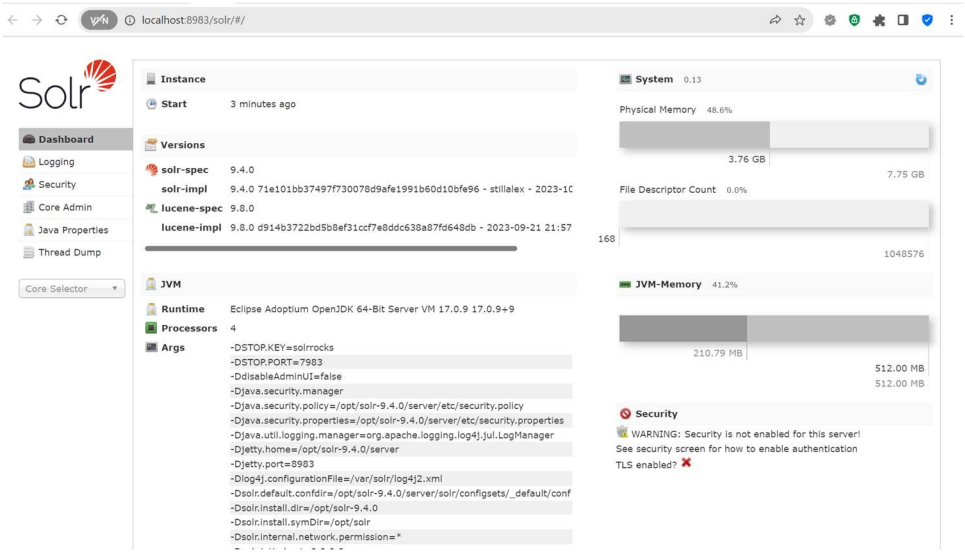
```
PS C:\Users\14024> ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (C:\Users\14024/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in C:\Users\14024/.ssh/id_rsa
Your public key has been saved in C:\Users\14024/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:cmDQKH5nfLJLsL2NNJwS83nxCfseDEOUpRlC54Hr1Pw 14024@DESKTOP-P1ETEQ5
The key's randomart image is:
+---[RSA 3072]----+
|    .+o.=o.      |
|  . ..o=.=       |
| . .  .o+=       |
|  . =.Bo*        |
|   . &.*S* .     |
|    o %o+E       |
|     + B .o      |
|      + . ..     |
|         ..      |
+----[SHA256]-----+
PS C:\Users\14024> cd ~/.ssh
PS C:\Users\14024\.ssh> ls -ltr
Get-ChildItem : A parameter cannot be found that matches parameter name 'ltr'.
At line:1 char:4
```

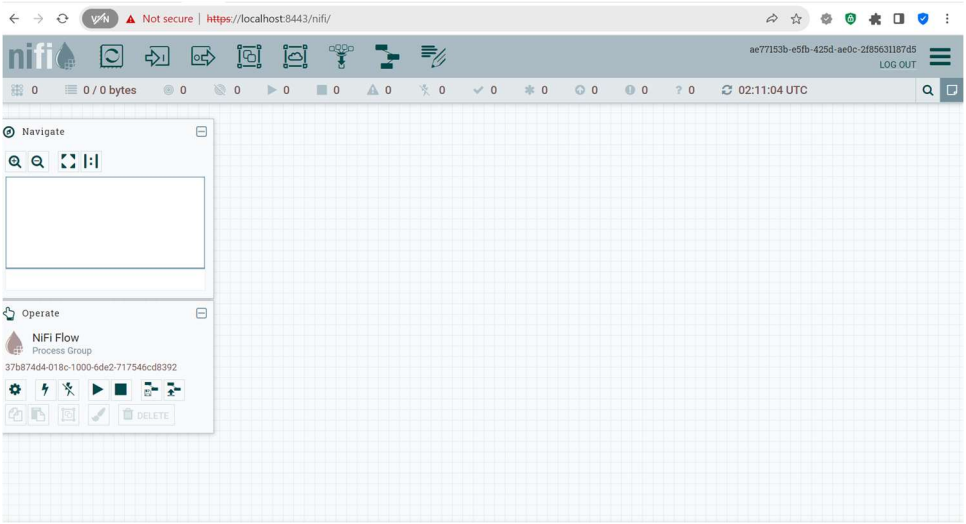



localhost:8080
Spark 3.0.0
Spark Master at spark://master:7077
URL: spark://master:7077
Alive Workers: 2
Cores in use: 8 Total, 0 Used
Memory in use: 13.5 GiB Total, 0.0 B Used
Resources in use:
Applications: 0 Running, 0 Completed
Drivers: 0 Running, 0 Completed
Status: ALIVE
Workers (2)
Worker Id | Address | State | Cores | Memory | Resources
worker-20231205013305-worker1-8881 | worker1:8881 | ALIVE | 4 (0 Used) | 6.7 GiB (0.0 B Used)
worker-20231205013310-worker2-8882 | worker2:8882 | ALIVE | 4 (0 Used) | 6.7 GiB (0.0 B Used)
Running Applications (0)
Application ID | Name | Cores | Memory per Executor | Resources Per Executor | Submitted Time | User | State | Duration
Completed Applications (0)
Application ID | Name | Cores | Memory per Executor | Resources Per Executor | Submitted Time | User | State | Duration


localhost:18080
Spark 3.0.0
History Server
Event log directory: hdfs:///log/spark
Last updated: 2023-12-04 19:52:30
Client local time zone: America/Chicago
No completed applications found!
Did you specify the correct logging directory? Please verify your setting of spark.history.fs.logDirectory listed above and whether you have the permissions to access it.
It is also possible that your application did not run to completion or did not stop the SparkContext.
Show incomplete applications


localhost:16010/master-status
APACHE HBASE
Home
Table Details
Procedures & Locks
HBCK Report
Process Metrics
Local Logs
Log Level
Debug Dump
Metrics Dump
Profiler
HBase Configuration
Master master
Region Servers
Base Stats
Memory
Requests
Storefiles
Compactions
Replications
ServerName | Start time | Last contact | Version | Requests Per Second | Num. Regions
worker1,16020,1701740153984 | 2023-12-05T01:35:53.984Z | 0 s | 2.3.6 | 0 | 1
worker2,16020,1701740153561 | 2023-12-05T01:35:53.561Z | 0 s | 2.3.6 | 0 | 1
Total:2 | 0 | 2
Backup Masters
ServerName | Port | Start Time
Total:0
localhost:16010/master-status#tab_compactStats


localhost:8983/solr/#/
Solr
Dashboard
Logging
Security
Core Admin
Java Properties
Thread Dump
Core Selector
Instance
Start 3 minutes ago
Versions
solr-spec 9.4.0
solr-impl 9.4.0 71e101bb37497f730078d9afe1991b60d10bfe96 - stillalex - 2023-10
lucene-spec 9.8.0
lucene-impl 9.8.0 d914b3722bd5b8ef31ccf7e8ddc638a87fd648db - 2023-09-21 21:57
JVM
Runtime Eclipse Adoptium OpenJDK 64-Bit Server VM 17.0.9 17.0.9+9
Processors 4
Args -DSTOP.KEY=solrrocks
-DSTOP.PORT=7983
-DdisableAdminUI=false
-Djava.security.manager
-Djava.security.policy=/opt/solr-9.4.0/server/etc/security.policy
-Djava.security.properties=/opt/solr-9.4.0/server/etc/security.properties
-Djava.util.logging.manager=org.apache.logging.log4j.jul.LogManager
-Djetty.home=/opt/solr-9.4.0/server
-Djetty.port=8983
-Dlog4j.configurationFile=/var/solr/log4j2.xml
-Dsolr.default.confdir=/opt/solr-9.4.0/server/solr/configsets/_default/conf
-Dsolr.install.dir=/opt/solr-9.4.0
-Dsolr.install.symDir=/opt/solr
-Dsolr.internal.network.permission=*
System 0.13
Physical Memory 48.6%
3.76 GB
7.75 GB
File Descriptor Count 0.0%
168
1048576
JVM-Memory 41.2%
210.79 MB
512.00 MB
512.00 MB
Security
WARNING: Security is not enabled for this server!
See security screen for how to enable authentication
TLS enabled?


Not secure | https://localhost:8443/nifi/
nifi
ae77153b-e5fb-425d-ae0c-2f85631187d5
LOG OUT
0 / 0 bytes
02:11:04 UTC
Navigate
Operate
NiFi Flow
Process Group
37b874d4-018c-1000-6de2-717546cd8392
DELETE