HCL Sametime

Deploying HCL Sametime v12 on Docker

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Bio

I am a technical consultant of HCL Digital Solutions software with expertise in Notes/Domino, Sametime, Nomad, Verse. I am a Member of Czech Lotus User Group = Sutol. I am a Blogger and a Speaker. I have been primarily engaged in the Lotus software family since 1994. I remember the era when these products were owned by Lotus, then IBM, and now I am looking forward to more successful years with HCL Software. I am a 2020, 2021, and 2022 HCL Ambassador.

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Introduction

This document contains a step-by-step deployment of HCL Sametime 12.0 on Docker.
The document is intended to help deploy HCL Sametime 12.0 for test or small-scale use in a relatively short time. Deployment, sizing, and additional considerations are required for production environments.

The document is divided into several chapters from system requirements and all necessary components to make Sametime fully functional.

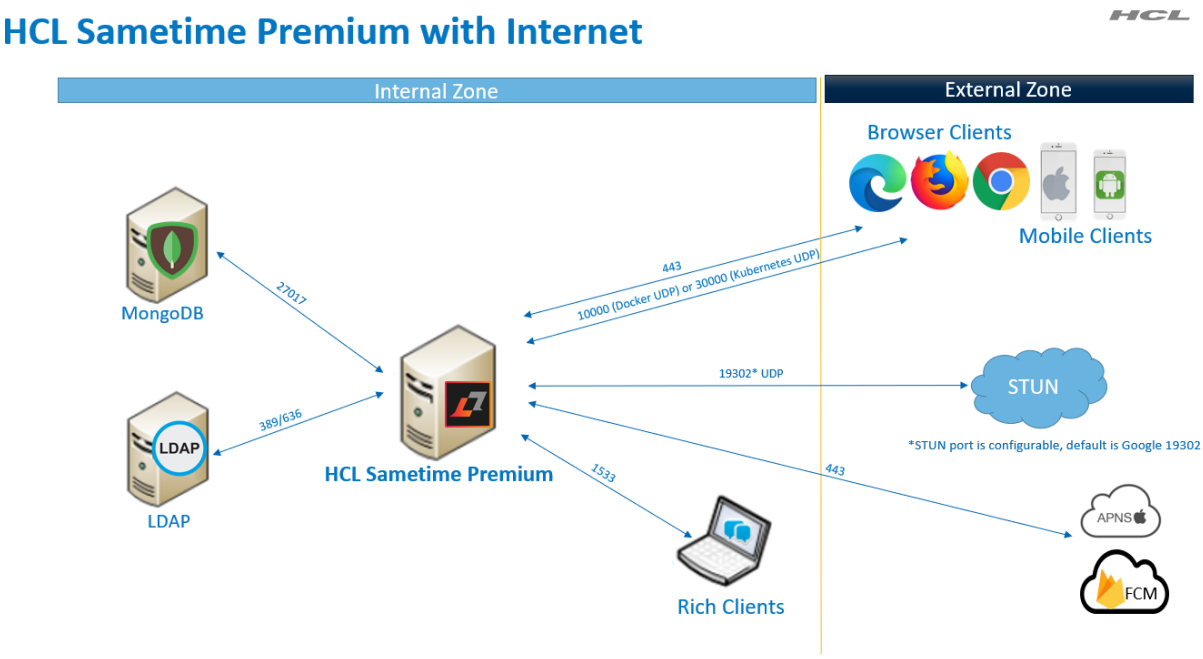
Prerequisites

For details, see https://support.hcltechsw.com/csm?id=kb_article&sysparm_article=KB0073898.

Installed Components & Topology

- MongoDB
- Docker
- HCL Sametime 12.0 Premium
- LDAP (for example HCL Domino server)

HCL Sametime 12.0 Topology



Hardware Requirements for this Pilot Deployment

Hardware:

- 4 core, 16GB RAM, 250 GB Hard Disk

Operation system:

- Linux Centos 7.x

Pre-Requisites

- MongoDB 4.4.x
- Docker and Docker Compose 1.29
- HCL Sametime 12.0 Premium or Standard (without Meetings)
- Functional LDAP server for user authentication

Download & Install MongoDB

MongoDB is used for saving HCL Sametime chat history, persistent chat, and meetings.

Supported version Mongo 4.4.x

Download the latest MongoDB 4.4.x version from MongoDB's download page: https://www.mongodb.com/download-center/community

Follow the installation instructions located in the following resource links:

- https://www.mongodb.com/docs/v4.4/administration/install-on-linux
- https://help.hcltechsw.com/sametime/12/admin/installing_mongodb_linux.html

> Use caution when copying commands from the Installation manuals (spaces, slashes) and carefully validate proper syntax.

Modify Configuration Files

You will need to edit the configuration files for the MongoDB installation. To edit the files, this whitepaper will provide instructions to use VI or Midnight Commander (MC) on CentOS. MC is a visual file manager that allows you to copy, move and delete files, search for files and run commands.

For the Midnight Commander User Guide, see https://midnight-commander.org/wiki/doc

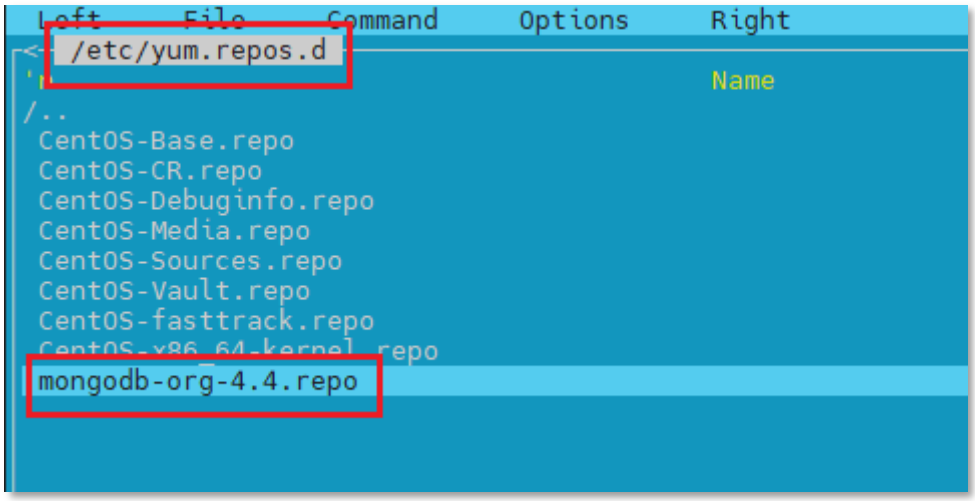
If using MC, execute the following command to install the utility:

```
yum install mc
```

- After installation, start Midnight Commander (MC) with the following command

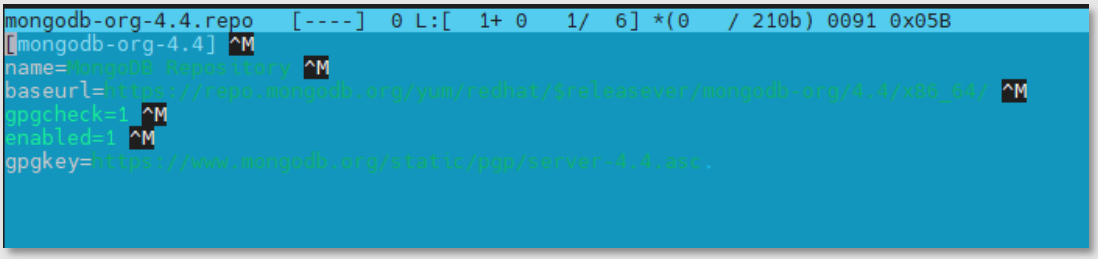
```
mc
```

- Create a repository file for YUM to install MongoDB. Use the VI command or Midnight Commander (MC) to create and edit the ***mongodb-org-4.4.repo*** file



- To edit the file, use Insert (VI) or F4 (MC) and then copy and paste the following content:

```
[mongodb-org-4.4]
name=MongoDB Repository
baseurl=https://repo.mongodb.org/yum/redhat/$releasever/mongodb-org/4.4/x86_64/
gpgcheck=1
enabled=1
gpgkey=https://www.mongodb.org/static/pgp/server-4.4.asc
```

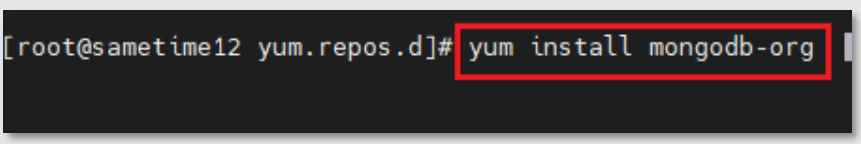


If the repo baseurl is unavailable, manually download the rpm files from this location: https://repo.mongodb.org/yum/redhat/7/mongodb-org/4.4/x86_64/RPMS/

Delete the file created in step 1 and install manually.

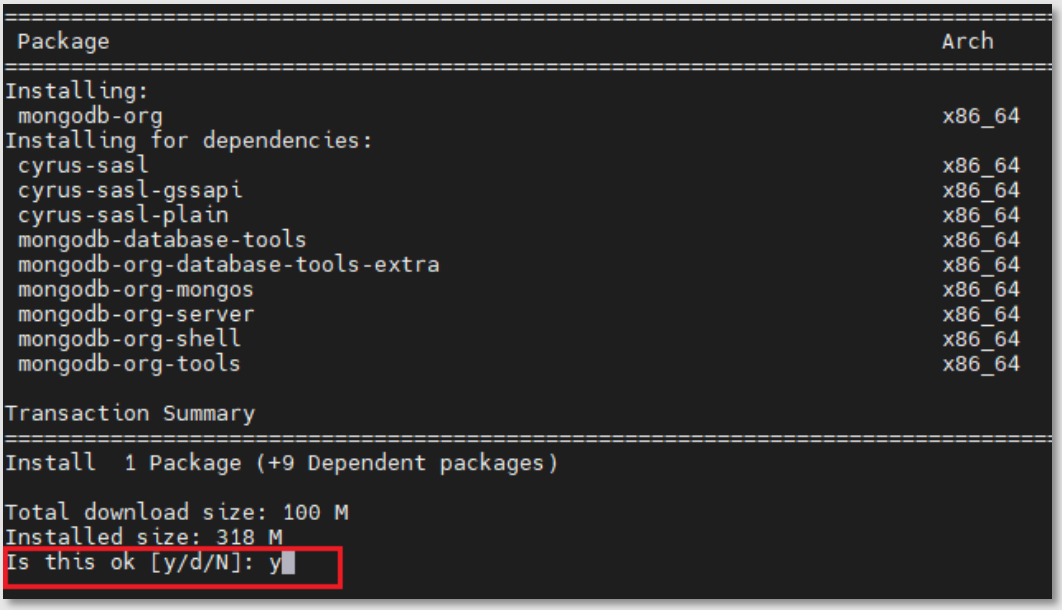
- Press Esc to exit insert mode. To save and exit, use the wq command (VI) or F2 (MC)
- Run the MongoDB package installation

```
yum install mongodb-org
```



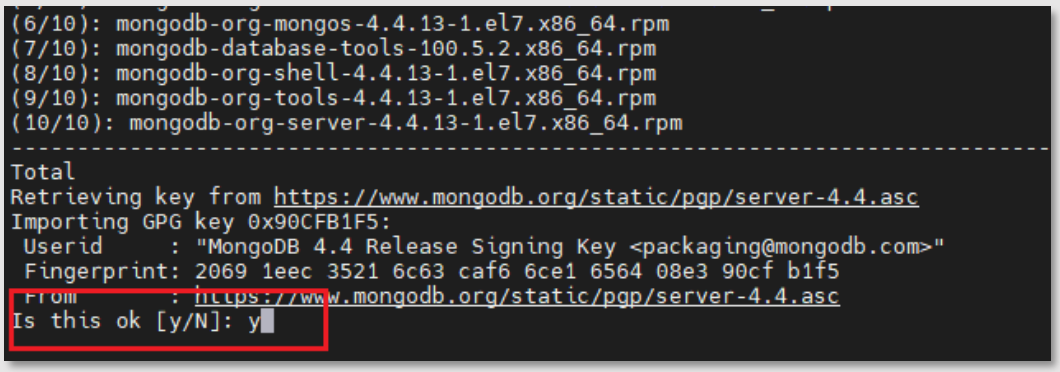
- To confirm the download and installed size, type

y

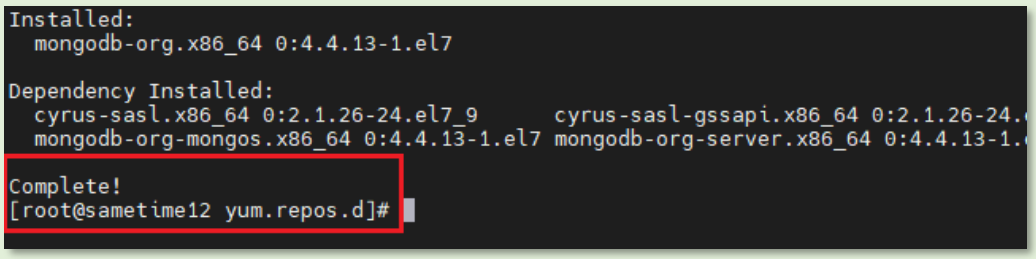


- To accept the GPG key import, type

y



Installation complete message will be received.



Configure MongoDB

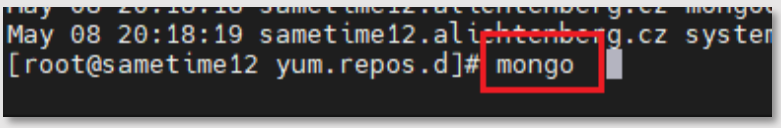
These steps will install a single MongoDB instance. Sametime supports multiple types of MongoDB deployments. If your environment requires high availability, you can implement clustering. Other deployment models are outside of the scope of this document.

- Start the MongoDB server:

```
service mongod start
```

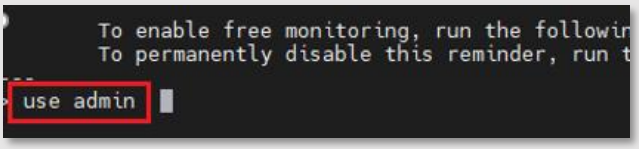
- Start the MongoDB console:

```
mongo
```



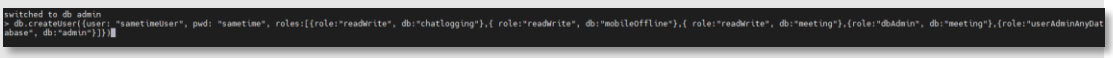
- Create **"sametimeUser"** in MongoDB from the MongoDB console
  - From the MongoDB console, run the following commands:

```
use admin
```



  - From the MongoDB console, run the following commands:

```
db.createUser({user: "sametimeUser", pwd: "sametime", roles:[{role:"readWrite",
db:"chatlogging"},{ role:"readWrite", db:"mobileOffline"},{ role:"readWrite",
db:"meeting"},{role:"dbAdmin", db:"meeting"},{role:"userAdminAnyDatabase",
db:"admin"}]})
```



Successful result after the creation of a new user “sametimeUser”

```
> use admin
switched to db admin
> db.createUser({user: "sametimeUser", pwd: "sametime", roles:[{role:"readWrite", db:
abase", db:"admin"}]})
Successfully added user: {
        "user" : "sametimeUser",
        "roles" : [
                {
                        "role" : "readWrite",
                        "db" : "chatlogging"
                },
                {
                        "role" : "readWrite",
                        "db" : "mobileOffline"
                },
                {
                        "role" : "readWrite",
                        "db" : "meeting"
                },
                {
                        "role" : "dbAdmin",
                        "db" : "meeting"
                },
                {
                        "role" : "userAdminAnyDatabase",
                        "db" : "admin"
                }
        ]
}
>
```

- Create the **“chatlogging“** database with **“events“** and **“sessions“** collections in MongoDB.

  From the MongoDB console, run the following commands:

```
> use chatlogging
> db.EVENTS.insertOne({"_id" : "dummy"})
> db.SESSIONS.insertOne({"_id" : "dummy"})
```

```
                        "role" : "readWrite",
                        "db" : "ST_OFFLINE_DB"
                },
                {
                        "role" : "userAdminAnyDatabase",
                        "db" : "admin"
                }
        ]

use chatlogging
```

```
> use chatlogging
switched to db chatlogging
> db.EVENTS.insertOne({"_id" : "dummy"})
{ "acknowledged" : true, "insertedId" : "dummy" }
```

```
> use chatlogging
switched to db chatlogging
> db.EVENTS.insertOne({"_id" : "dummy"})
{ "acknowledged" : true, "insertedId" : "dummy" }
> db.SESSIONS.insertOne({"_id" : "dummy"})
{ "acknowledged" : true, "insertedId" : "dummy" }
```

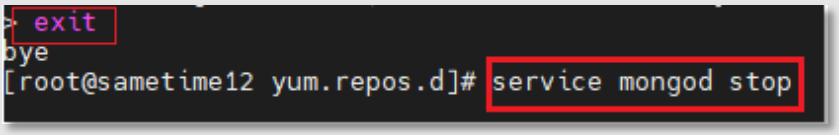
Stop the MongoDB server and exit the console

- To exit the MongoDB console, use the command

```
exit
```

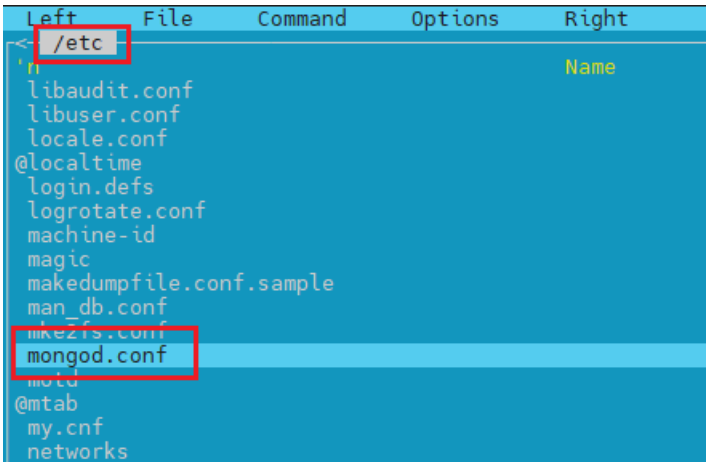
- To shut down the MongoDB server:

```
service mongod stop
```



Edit the mongod.cfg file

- Open file **"mongod.cfg"** from path "/etc/mongod.conf"



- Under **"#network" interfaces** add

```
bindIpAll: true
```

- Uncomment the "**replication**" statement and add the following under it

```
replSetName: rs0
```

> Important: Use 2 spaces before "replSetName: rs0", not tabs

```
# how the process runs
processManagement:
  fork: true  # fork and run in background
  pidFilePath: /var/run/mongodb/mongod.pid  # location of pidfile
  timeZoneInfo: /usr/share/zoneinfo

# network interfaces
net:
  port: 27017
  bindIp: 127.0.0.1  # Enter 0.0.0.0,:: to bind to all IPv4 and IPv6
  bindIpAll: true

#security:

#operationProfiling:

replication:
  replSetName: rs0

#sharding:

## Enterprise-Only Options
```

- Save file **"mongod.cfg"**

Initiate the Replica Set in MongoDB from the MongoDB console

- Start the MongoDB service command prompt on Linux

```
service mongod start
```

```
root@sametime12 yum.repos.d]#
root@sametime12 etc]# service mongod start
```

- Start the MongoDB console by execute

```
mongo
```

```
Redirecting to /bin/systemctl start mongod.service
[root@sametime12 etc]# mongo
```

- Enter the following command:

```
> rs.initiate()
```

```
        To permanen
---
> rs.initiate()
```

- Press **"Enter"** and the prompt will change to: **rs0:Primary>**

```
> rs.initiate()
{
        "info2" : "no configuration specified. Using a default configuration for the set",
        "me" : "127.0.0.1:27017",
        "ok" : 1,
        "$clusterTime" : {
                "clusterTime" : Timestamp(1594151594, 1),
                "signature" : {
                        "hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),
                        "keyId" : NumberLong(0)
                }
        },
        "operationTime" : Timestamp(1594151594, 1)
}
rs0:SECONDARY>
```

```
}
rs0:SECONDARY>
rs0:PRIMARY>
```

- The replica set is now operational. Exit the console using the command

exit

```
}
rs0:SECONDARY>
rs0:PRIMARY> exit
```

Congratulations! You have installed and configured the MongoDB.

See Configuring MongoDB for Sametime for more information.

Install Docker

What is Docker?

Docker is an open-source lightweight containerization technology. It allows you to automate the deployment of applications in lightweight and portable containers and ship it all out as one package. It also allows you to run multiple operating systems on the same host.

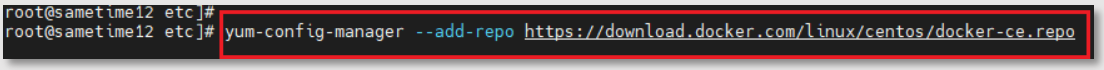
How to install Docker Engine: https://docs.docker.com/engine/install/centos
How to install Docker Compose: https://docs.docker.com/compose/install

For more information, see the HCL Product Documentation on Installing Docker for Sametime.

Important: All commands provided require you to run as ROOT or SUDO access.

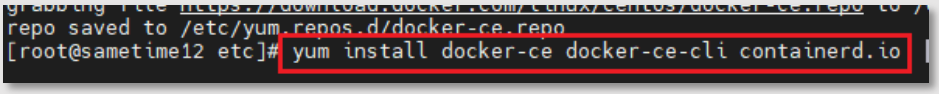
- Run the following commands to add the docker repository for software downloads:

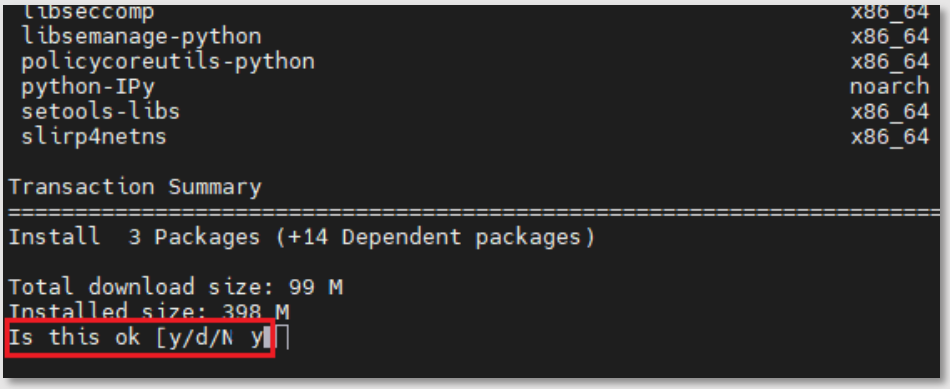
```
yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo
```

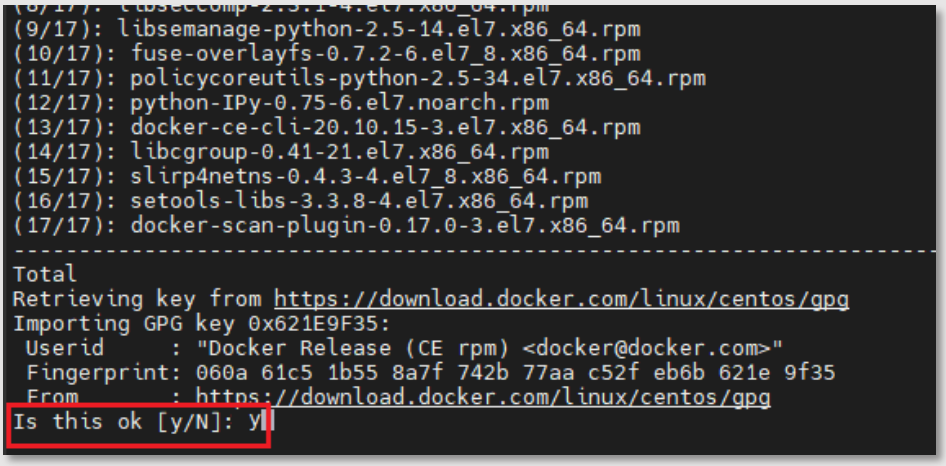


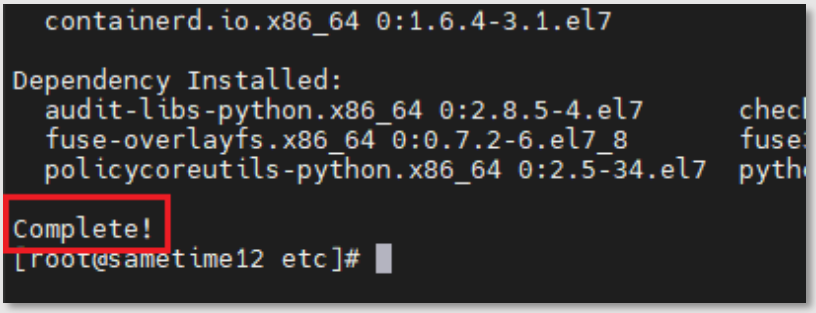
- Install the latest version of Docker Engine and containers

```
yum install -y docker-ce docker-ce-cli containerd.io
```



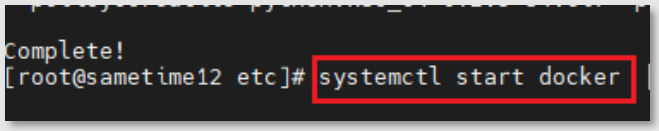






- Start the Docker Service

```
systemctl start docker
```



- Enable Docker auto start

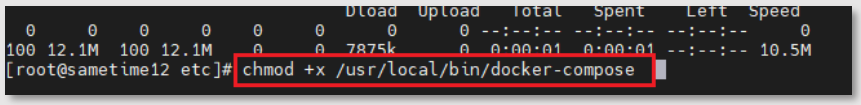
```
systemctl enable docker
```

- Install Docker Compose on Linux systems:

```
curl -L "https://github.com/docker/compose/releases/download/1.29.0/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compose
```

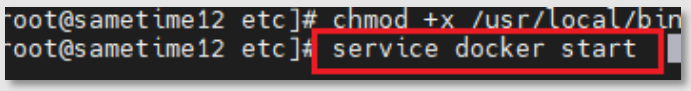
- Apply executable permissions to the binary

```
chmod +x /usr/local/bin/docker-compose
```



- Use the command to start the Docker server

```
service docker start
```



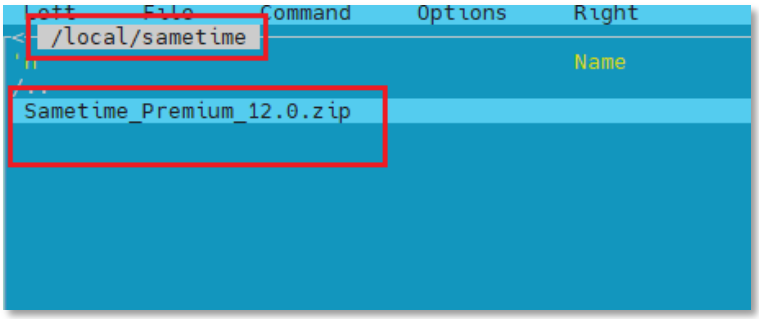
Congratulations! You have now installed Docker and Docker Compose.

See Installing Docker for more information.

Install & Configure Sametime 12.0 Premium

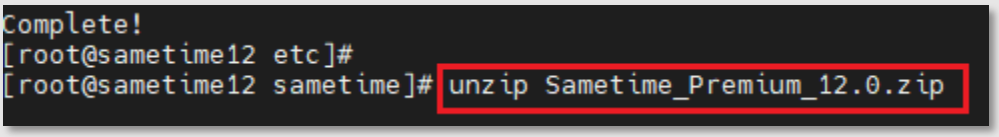
We will now install HCL Sametime Premium 12.0 on Docker.

- Download HCL Sametime Premium 12.0 file from Flexnet and copy this file for my example to directory "**/local/ sametime"**



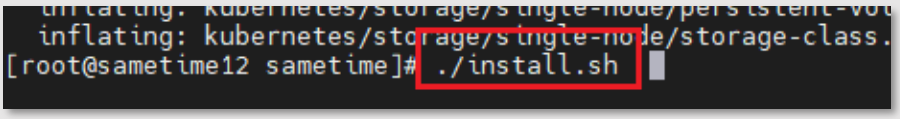
- Extract the zip file Sametime_Premium_12.0.zip:

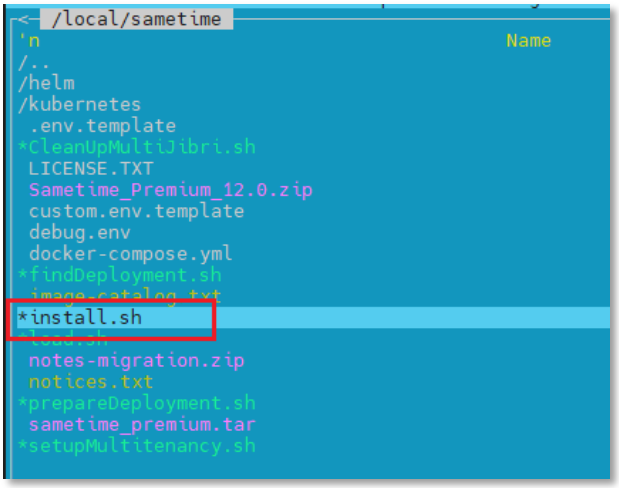
```
unzip Sametime_Premium_12.0.zip
```



- After extracting the Sametime_Premium_12.0.zip file, run the below command to load and initialize the docker images in the directory where you have extracted the zip file and

```
./install.sh
```





Note: The Sametime Premium 12 requires access to a MongoDB server and an LDAP server. For example, you can use an existing Domino LDAP server.

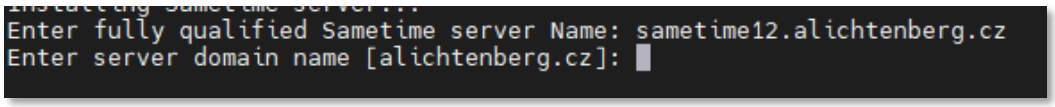
- You will be prompted to enter the following information:

  Fully qualified name of the Sametime server
  Sametime domain name
  Mongo host
  Mongo port
  Mongo admin user name
  Mongo admin user password
  Mongo Connection URL
  LDAP server host name or IP address
  Use TLS to access LDAP
  LDAP server port
  LDAP Base DN for resolving users and groups
  Configure advanced LDAP settings needed for binding
  Base64 encoded JWT SECRET
  TURN server address
  Configure TCP over 4443
  Configure LTPA

- You can now proceed according to the individual images or enter your own company data.

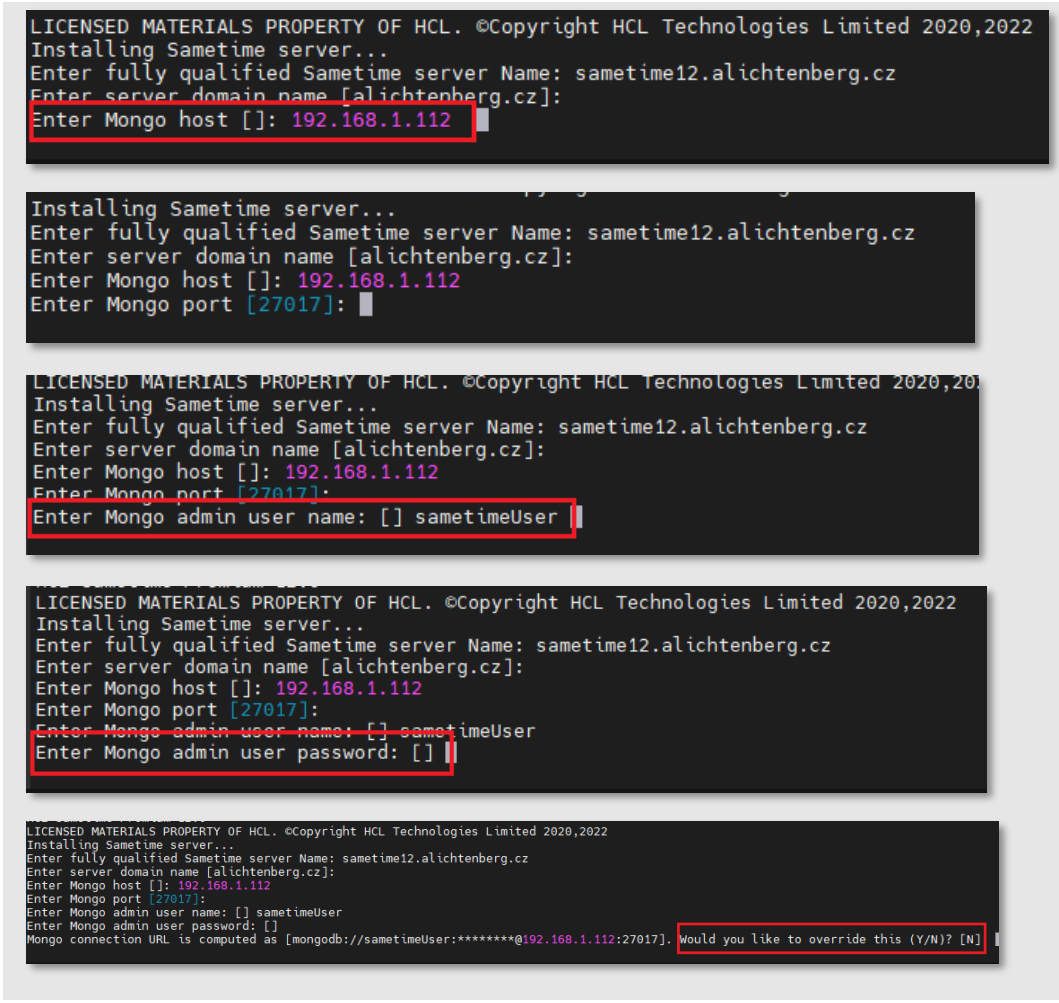
Note: Ensure that you provide a fully qualified domain name when prompted for the Sametime server hostname. If you do not provide an FQDN, you will not be able to successfully login.

- Enter: Fully qualified name of the Sametime server and Sametime domain name
  (Just confirm the default values with the "Enter" key)



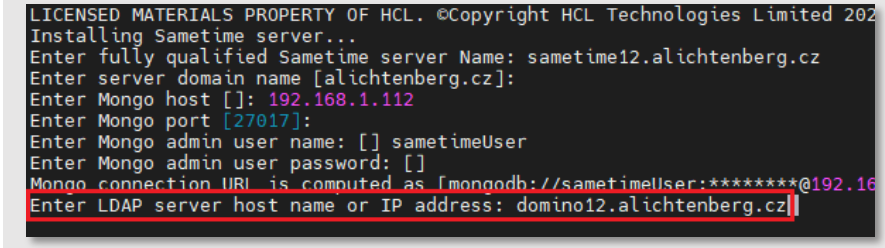
- Enter:

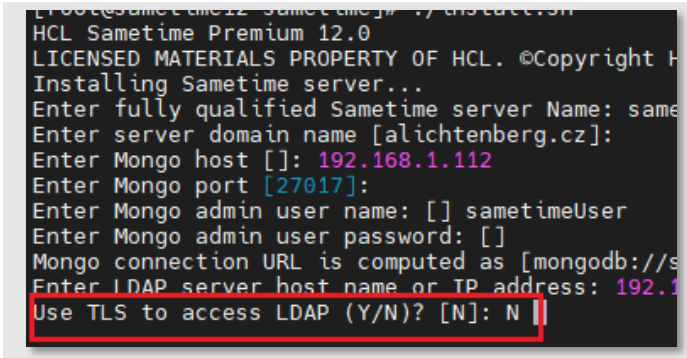
  Mongo host and Mongo port
  Mongo admin user name and Mongo admin user (sametimeUser) password
  Mongo Connection URL

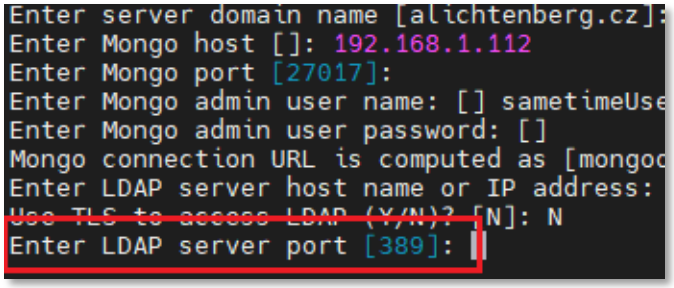


- Enter:

LDAP server host name or IP address (for example LDAP on Domino server)
Use TLS to access LDAP
LDAP server port

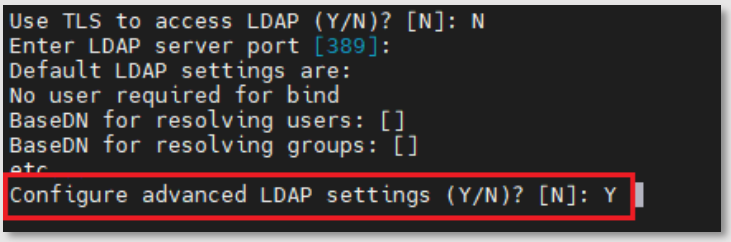


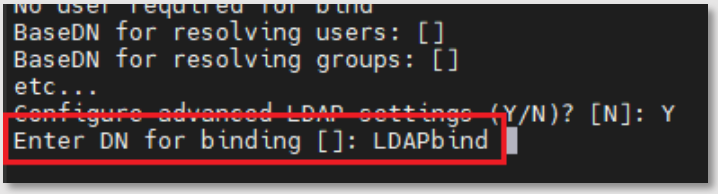


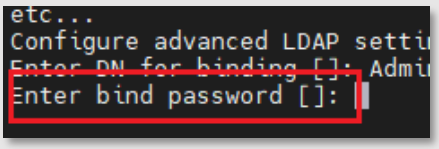


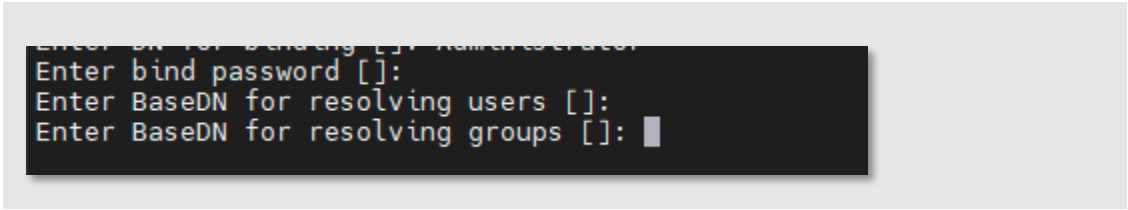
- Enter:

LDAP Base DN for resolving users and groups
Configure advanced LDAP settings needed for binding









- Enter:

Base64 encoded JWT SECRET
TURN server address
Configure TCP over 4443
Configure LTPA

```
Enter BaseDN for resolving groups []:
Enter the Base64 encoded JWT_SECRET from an existing Sametime deployment: [Empty to generate a new one]
TURN server address [None]:
```

```
Enter BaseDN for resolving users []:
Enter BaseDN for resolving groups []:
Enter the Base64 encoded JWT_SECRET from an existing Sametime deployment: [Empty to generate a new one]
TURN server address [None]:
Configure TCP over 4443 (Y/N) [N]: N
```

```
Enter BaseDN for resolving users []:
Enter BaseDN for resolving groups []:
Enter the Base64 encoded JWT_SECRET from an existing Sametime deployment: [Empty to generate a new one]
TURN server address [None]:
Configure TCP over 4443 (Y/N) [N]: N
Configure LTPA (Y/N) [N]:
```

- The installation is now in progress

```
Loading images...
1a058d5342cc: Loading layer [==================================================>]  5.886MB/5.886MB
d4c27786f702: Loading layer [==================================================>]  14.59MB/14.59MB
d5535ab46c02: Loading layer [==================================================>]  231.7MB/231.7MB
7cbf6941f557: Loading layer [==================================================>]   13.9MB/13.9MB
a962b8399b7d: Loading layer [==================================================>]  21.38MB/21.38MB
Loaded image: hclcr.io/st/meetings-jpe:20220422-1520
13f414425f62: Loading layer [==================================================>]    160MB/160MB
17c7cb9c9d9c: Loading layer [==================================================>]  7.807MB/7.807MB
291200a56550: Loading layer [==================================================>]  3.584kB/3.584kB
dd3fa5e1a8ea: Loading layer [==================================================>]  237.1kB/237.1kB
f09b85ab3ead: Loading layer [==================================================>]  4.608kB/4.608kB
6412439030a8: Loading layer [==================================================>]  353.3kB/353.3kB
08d0bed4a937: Loading layer [==================================================>]  10.75kB/10.75kB
befa8636f7fb: Loading layer [==================================================>]  65.99MB/65.99MB
223139e056b1: Loading layer [==================================================>]  4.096kB/4.096kB
681ceea19cfc: Loading layer [==================================================>]   2.56kB/2.56kB
a6c507af55bb: Loading layer [==================================================>]  20.48kB/20.48kB
Loaded image: hclcr.io/st/meetings-appregistry.node:20220422-1520
ad6b69b54919: Loading layer [==================================================>]  72.55MB/72.55MB
9f387291d483: Loading layer [==================================================>]  338.4kB/338.4kB
930f81d955e2: Loading layer [==================================================>]  26.62kB/26.62kB
307b2a6410ac: Loading layer [==================================================>]  420.4MB/420.4MB
Loaded image: hclcr.io/st/sametime-clamav:20220422-1520
cce6dd721fe3: Loading layer [==================================>                ]  72.42MB/107MB
```

Installation successfully completed

```
Generating secrets...
Starting composition...
Creating network "sametime_sametime.test" with the default driver
Creating network "sametime_default" with the default driver
Creating volume "sametime_proxy-workspace" with default driver
Creating volume "sametime_backgrounds" with default driver
Creating volume "sametime_reports" with default driver
Creating volume "sametime_recordings" with default driver
Creating volume "sametime_files" with default driver
Creating volume "sametime_queue" with default driver
Creating volume "sametime_quarantine" with default driver
Creating sametime_clamav_1       ... done
Creating sametime_recordings_1   ... done
Creating sametime_catalog_1      ... done
Creating sametime_jibri-web_1    ... done
Creating sametime_lobby_1        ... done
Creating sametime_nginx_1        ... done
Creating sametime_files_1        ... done
Creating sametime_backgrounds_1  ... done
Creating sametime_activity_1     ... done
Creating sametime_community_1    ... done
Creating sametime_location_1     ... done
Creating sametime_auth_1         ... done
Creating sametime_prosody_1      ... done
Creating sametime_proxy_1        ... done
Creating sametime_app-registry_1 ... done
Creating sametime_mux_1          ... done
Creating sametime_click2call_1   ... done
Creating sametime_jvb_1          ... done
Creating sametime_jibri_1        ... done
Creating sametime_jicofo_1       ... done
Creating sametime_jigasi_1       ... done
[root@sametime12 sametime]#
```

Test your Server

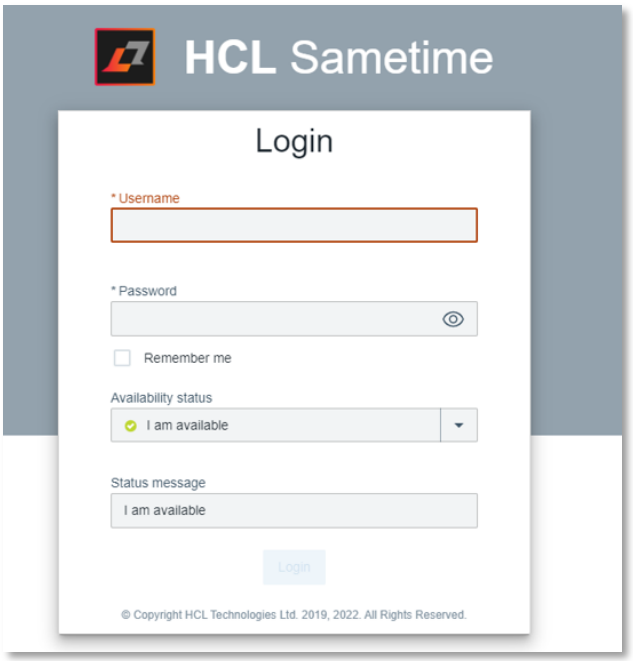
Test to confirm that your server is running and working as expected.

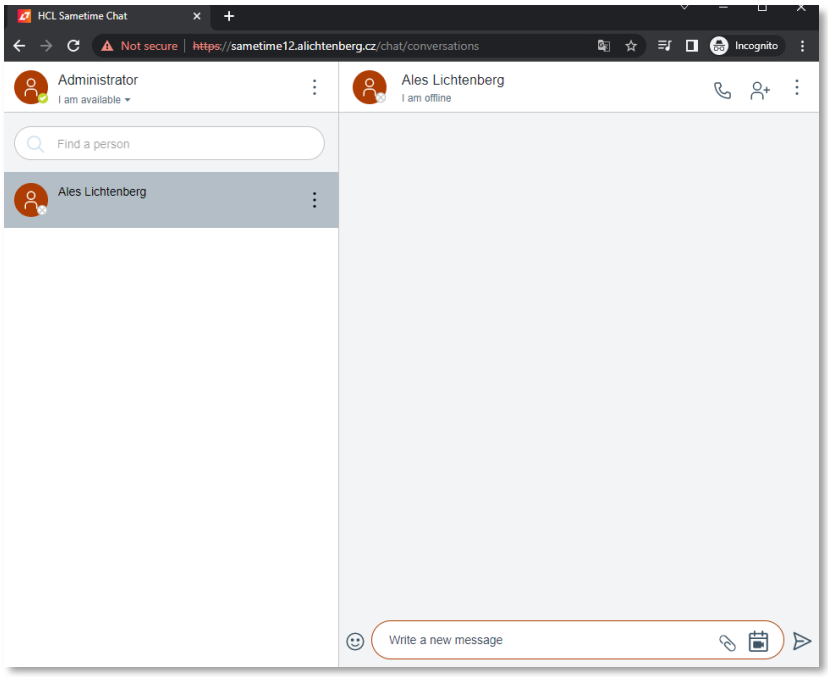
- Run the command below to check if meetings server is running. Show all the loaded docker images:

```
docker images
```

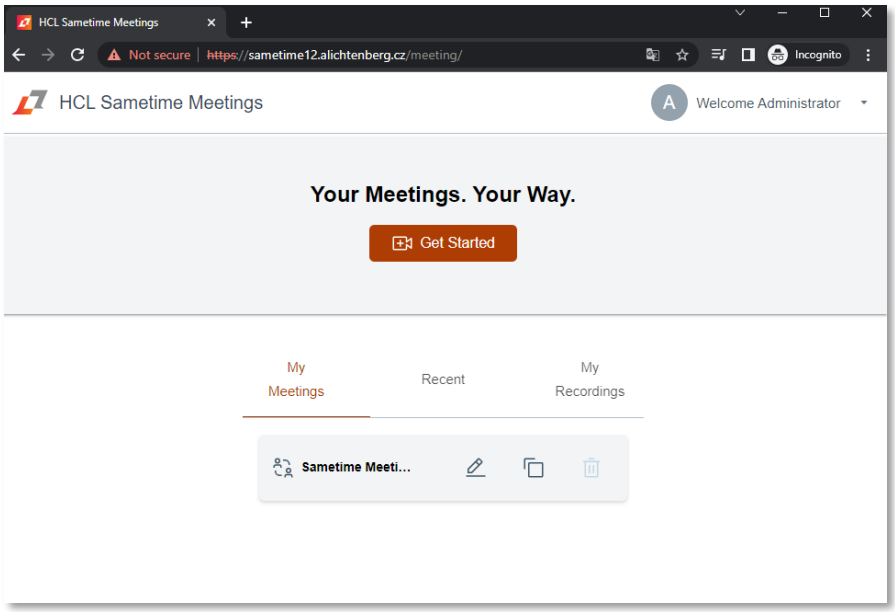
```
[root@sametime12 sametime]# docker images
REPOSITORY                                TAG                 IMAGE ID       CREATED         SIZE
hclcr.io/st/sametime-init                 20220422-1520       8b53e9d9e7df   2 weeks ago     18.2MB
hclcr.io/st/sametime-clamav               20220422-1520       2406b225af96   2 weeks ago     487MB
hclcr.io/st/meetings-jpe                  20220422-1520       7d27959fa21f   2 weeks ago     287MB
hclcr.io/st/meetings-jibri                20220422-1520       29a667fb0800   2 weeks ago     1.32GB
hclcr.io/st/meetings-jibri-web            20220422-1520       db07f3cb8a14   2 weeks ago     304MB
hclcr.io/st/meetings-jigasi               20220422-1520       8c6442d06189   2 weeks ago     341MB
hclcr.io/st/meetings-jvb                  20220422-1520       83a6e48ccf70   2 weeks ago     419MB
hclcr.io/st/meetings-web                  20220422-1520       4c0d3f612873   2 weeks ago     406MB
hclcr.io/st/sametime-click2call.node      20220422-1520       ca09aa18c05b   2 weeks ago     230MB
hclcr.io/st/sametime-files.node           20220422-1520       1d8326cf6984   2 weeks ago     230MB
hclcr.io/st/meetings-lobby.node           20220422-1520       ccdc5f00b52d   2 weeks ago     230MB
hclcr.io/st/meetings-backgrounds.node     20220422-1520       f76a500d076b   2 weeks ago     230MB
hclcr.io/st/meetings-activity.node        20220422-1520       7e8fa0c7fee1   2 weeks ago     310MB
hclcr.io/st/meetings-recordings.node      20220422-1520       aa1e21150f43   2 weeks ago     230MB
hclcr.io/st/meetings-location.node        20220422-1520       3c7e17d97790   2 weeks ago     229MB
hclcr.io/st/meetings-appregistry.node     20220422-1520       156f0f32c483   2 weeks ago     229MB
hclcr.io/st/meetings-auth.node            20220422-1520       ecaff28fab84   2 weeks ago     234MB
hclcr.io/st/meetings-prosody              20220422-1520       f06951235844   2 weeks ago     124MB
hclcr.io/st/meetings-persistence.node     20220422-1520       105352f94209   2 weeks ago     229MB
hclcr.io/st/chat-mux                      20220422-1520       42b3dadff9cf   2 weeks ago     197MB
hclcr.io/st/chat-server                   20220422-1520       80132536322f   2 weeks ago     889MB
hclcr.io/st/meetings-outlook              20220422-1520       c070d5e9ab9c   2 weeks ago     257MB
hclcr.io/st/meetings-jicofo               20220422-1520       402433635cd9   4 months ago    374MB
hclcr.io/st/sametime-pushgateway          20220422-1520       a0ebc6b7eba3   6 months ago    19.9MB
hclcr.io/st/chat-proxy                    20220422-1520       21b45073a005   42 years ago    318MB
[root@sametime12 sametime]#
```

- Use Google Chrome to try your HCL Sametime Chat URL: "*https://yoursamtimeserver/chat*"





- Use Google Chrome to try your HCL Sametime Meetings URL: "*https://yoursamtimeserver/meeting*"



Congratulations! You have installed the HCL Sametime 12.0 Server on Docker.

User Guides

Sametime iOS User Documentation

Sametime Android User Documentation

HCL Webchat Client Users Guide

Sametime Meetings Client Guide

Conclusion

In these few steps, you were able to install and configure everything you need to start testing HCL Sametime 12.0 Premium server in your organization. Here are some additional resources for review.

Resources

- **Installation and Administration Guide**
  https://help.hcltechsw.com/sametime/12/admin/index.html
- **HCL Customer Support**
  https://hclpnpsupport.hcltech.com/csm
- **Knowledge DB**
  https://hclpnpsupport.hcltech.com/csm?id=search&spa=1&t=kb&q=sametime%20v11
- **Discussion HCL Sametime**
  https://hclpnpsupport.hcltech.com/community?id=community_forum&sys_id=e3c946d01b80841077761fc58d4bcb04

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