EXPERIMENT NO 1

Exercise 1.1 : Instance Creation in IBM Security Directory Server (SDS)

1. Aim: To create a new instance in IBM Security Directory Server (SDS) 6.4.0.20, enabling secure directory management and understanding the setup process.

2. Objective:

1. To learn how to set up and configure a new directory instance in SDS.

2. To understand the tools and commands used for instance creation.

3. To validate the successful creation and operation of the instance.

3. Tools and Requirements

1. Software Required:

- IBM Security Directory Server 6.4.0.20.

- IBM Directory Server Administration Tool.

2. System Requirements:

- Operating system: Linux/Windows.

-VM ware Workstation Player 17 pro.

4.Theory:

1. What is Instance Creation?

Instance creation refers to the process of setting up and configuring multiple independent directory server environments within the IBM Security Directory Server (SDS) on a single machine. Each instance operates as a separate server with its own configuration, port assignments, and data storage.

2. What is SDS Version 6.4.0.20

IBM SDS 6.4.0.20 supports running multiple directory server instances on a single machine. It is secure, scalable, and used for centralized authentication and directory-based management.

3. What is idsldap1?

The idsldap1 is the name assigned to the primary directory server instance in this lab. It is configured to run on port 1389 and is the main instance used for LDAP queries and authentication in this setup.

4. What is idsldap2?

The idsldap2 is the name assigned to the secondary directory server instance. It operates on port 2389 and provides an additional directory.

Steps :

Step1: Command Explanation: /opt/ibm/ldap/V6.4/sbin/idsilist -a

-This command is used in IBM Security Directory Server (SDS) to list all the directory server instances configured on the machine, along with their detailed information.

-a (All flag): When used, this flag displays detailed information about each instance, such as:

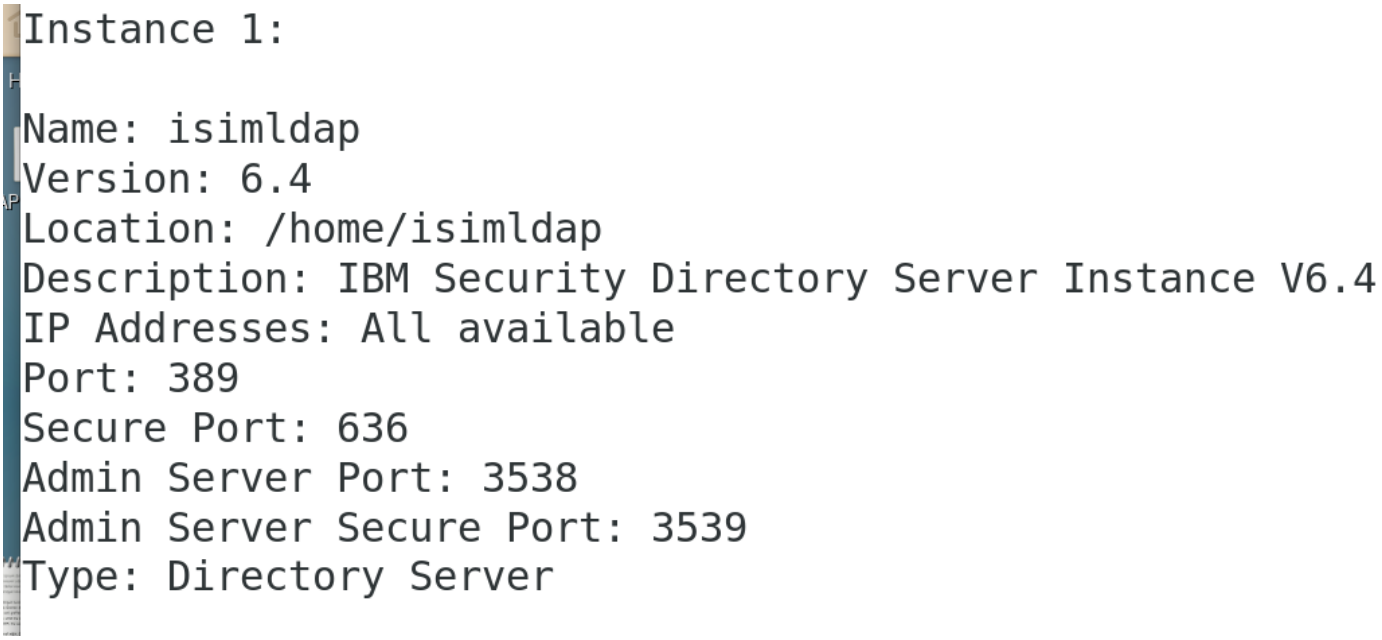
- Instance name

- Configuration path

- Ports in use (LDAP, admin, etc.)

- Current status (running/stopped).

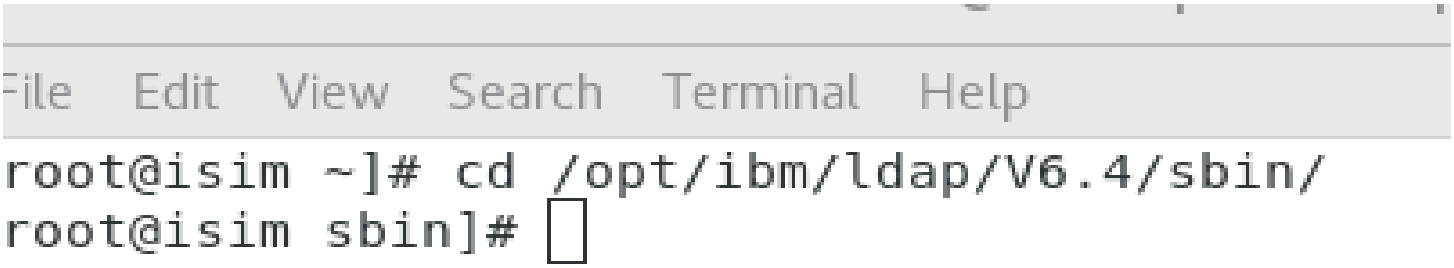
Output:



Step2: Open Terminal from Desktop and navigate to the SDS folder as below:

cd /opt/ibm/ldap/V6.4/sb

Output :

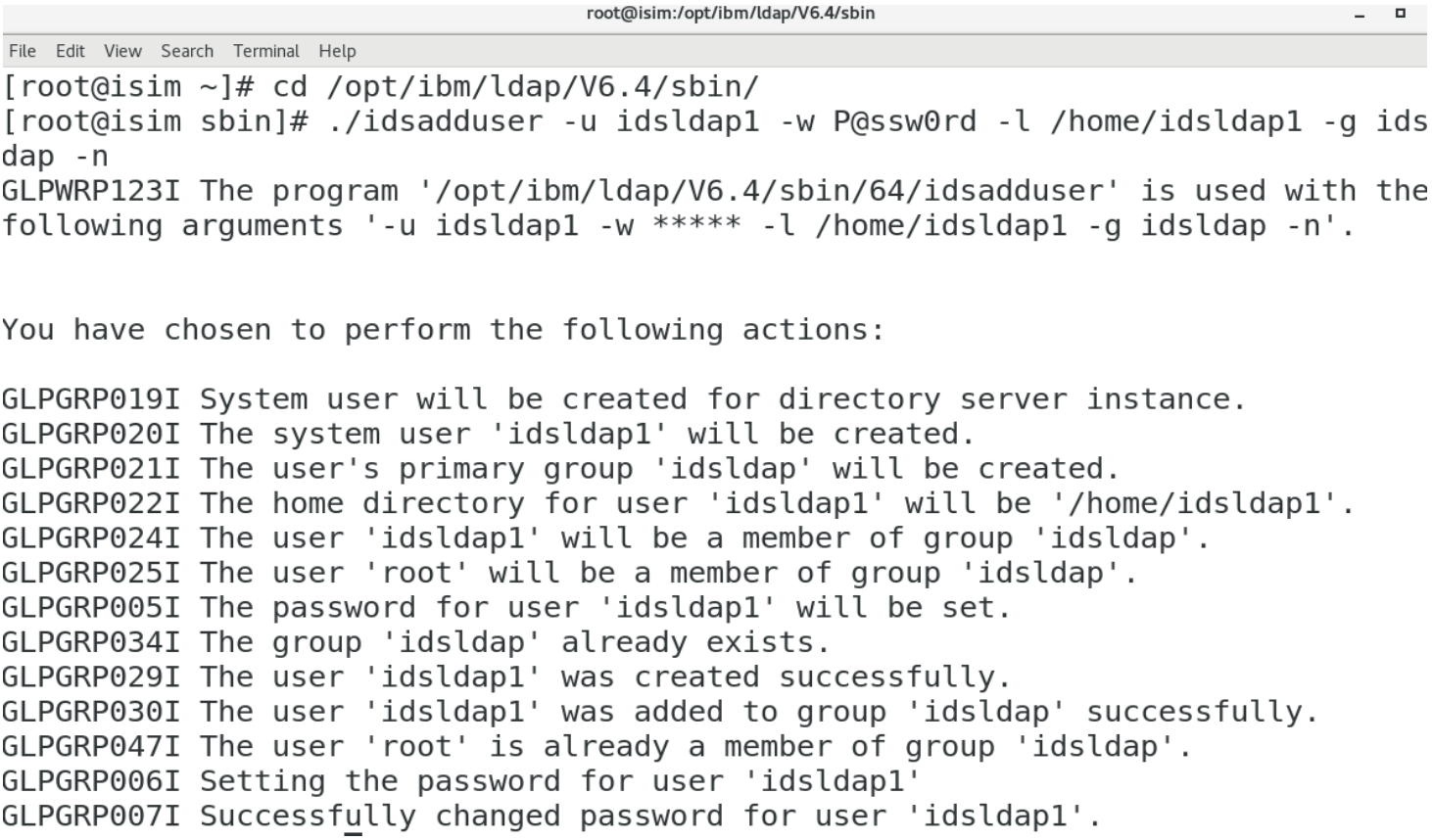


Step 3 : This command is used to create two new users, idsldap1 and idsldap2, as owners of two separate SDS instances :

. /idsadduser -u idsldap1 -w P@ssw0rd -l /home/idsldap1 -g idsldap -

- -u idsldap1: Specifies the username to be created (e.g., idsldap1).
- -w P@ssw0rd: Sets the password for the user (P@ssw0rd).
- -l /home/idsldap1: Specifies the home directory for the user (/home/idsldap1).
- -g idsldap: Assigns the user to the group idsldap.
- -n: Prevents interactive prompts during execution, making it a non-interactive command.

Output :

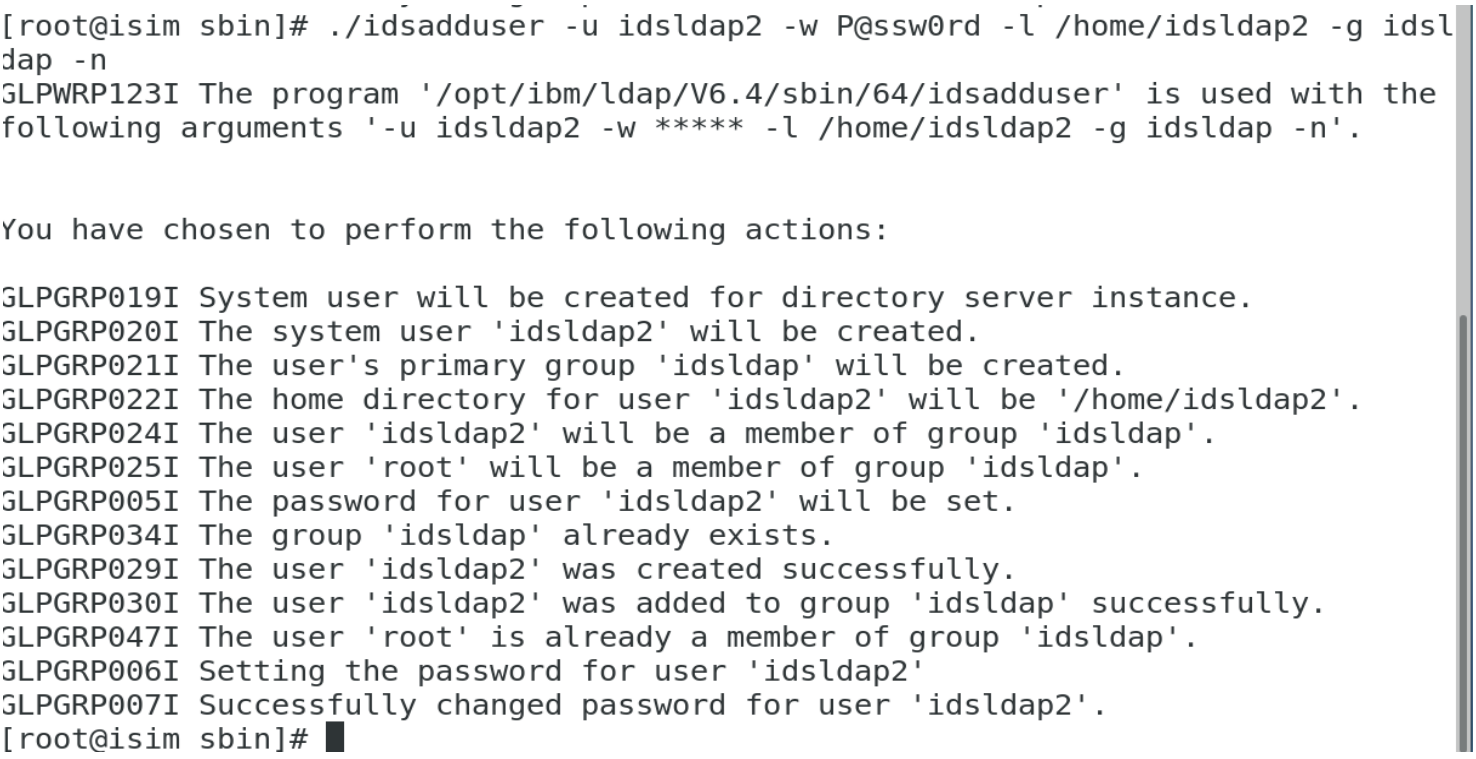


Step4 : Similarly, add the second user idsldap2. This command is used to create new users, idsldap2, as owners of two separate SDS instances :

./idsadduser -u idsldap2 -w P@ssw0rd -l /home/idsldap2 -g idsldap -n

- -u idsldap2: Specifies the username to be created (e.g., idsldap1).
- -w P@ssw0rd: Sets the password for the user (P@ssw0rd).
- -l /home/idsldap1: Specifies the home directory for the user (/home/idsldap1).

Output:



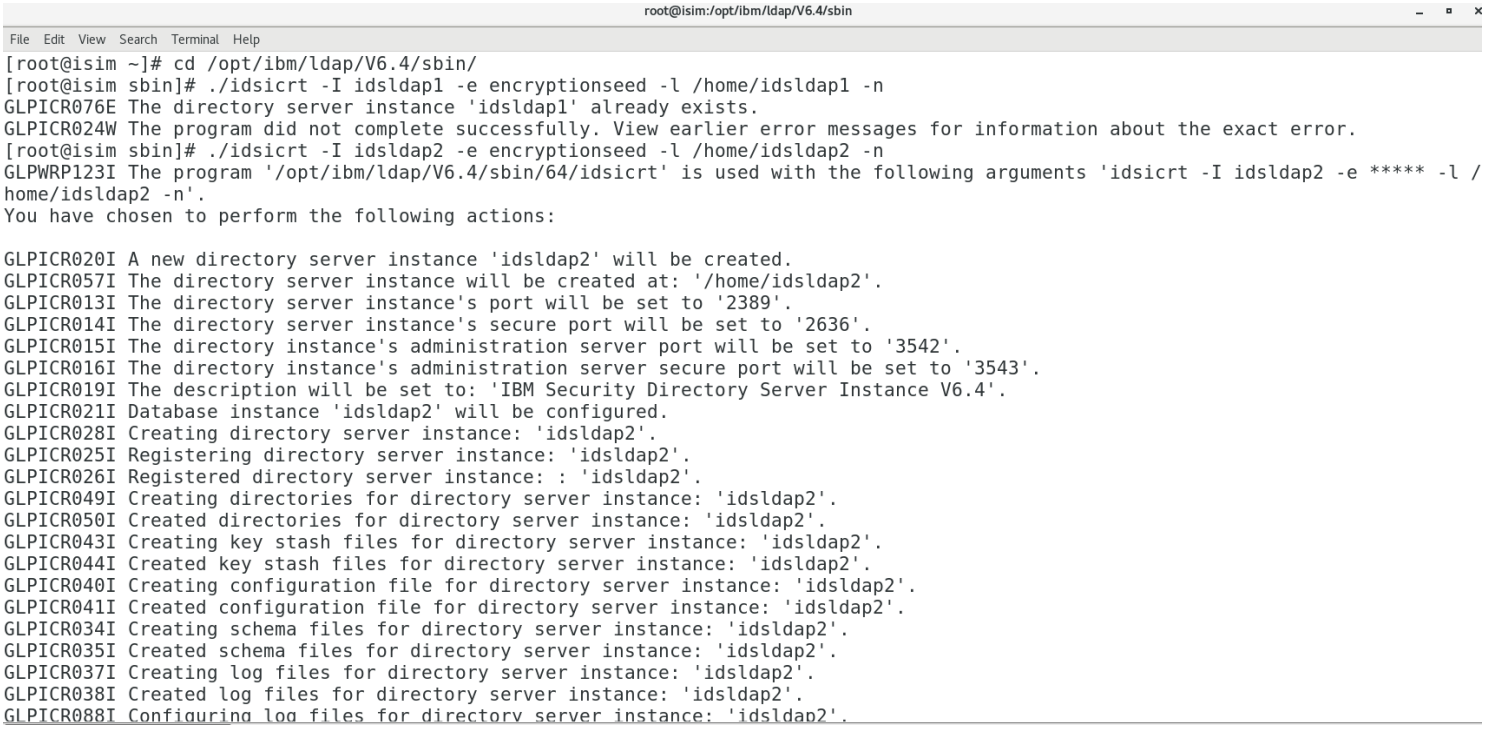
Step5 : Create the instance for the idsldap1 user using idsicrt command as below :

./idsicrt -I idsldap1 -e encryptionseed -l /home/idsldap1 -n

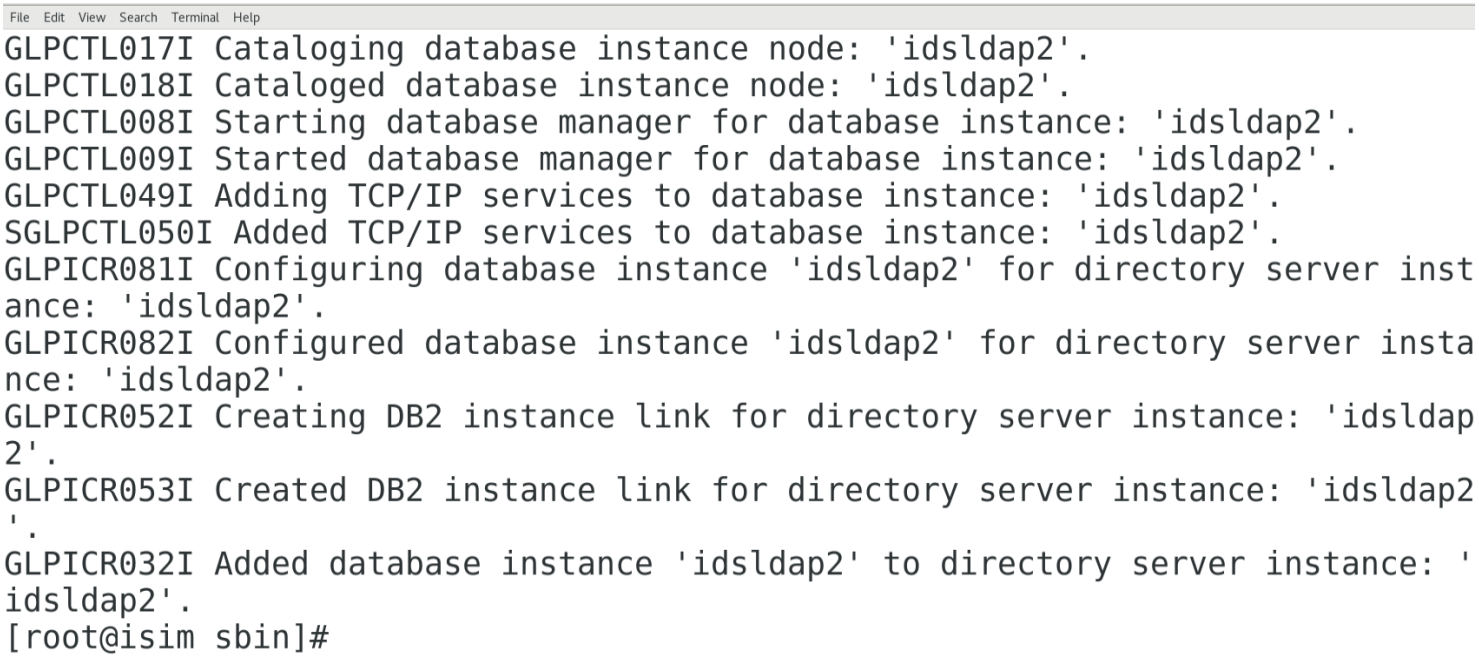
Here in the command :

- -I: Specifies the name of the instance to be created.
- -e: Provides the encryption seed for the SDS instance.
- -l: Defines the location where the instance will be stored.
- -n: Ensures the command runs without any prompts in the console.
- -idsicrt : The idsicrt command is used to add a DB2 instance for the SDS in the backend and create the instance.

Output:



Step6 : Similarly, create the instance for the idsldap2 user using idsicrt command as below : ./idsicrt -I idsldap2 -e encryptionseed -l /home/idsldap2 -n



Step7: So, to check the details of the new instances idsldap1 and idsldap2, you can use the following command in the terminal:

/opt/ibm/ldap/V6.4/sbin/idsilist -a

- The -a flag stands for "all."
- It provides detailed information about each instanc, such as:
- Instance name
- Port numbers
- Configuration paths
- Status (running/stopped)

Note : We can see that ports 1389 and 2389 are by default assigned to idsldap1 and idsldap2, respectively. This is the standard behavior of SDS. You can also specify a custom port using the -p argument with the idsicrt command if needed.

Output: :

```
[root@isim sbin]# /opt/ibm/ldap/V6.4/sbin/idsilist -a
Directory server instance(s):

---------------------------------------
Instance 1:

Name: isimldap
Version: 6.4
Location: /home/isimldap
Description: IBM Security Directory Server Instance V6.4
IP Addresses: All available
Port: 389
Secure Port: 636
Admin Server Port: 3538
Admin Server Secure Port: 3539
Type: Directory Server

Instance 2:

Name: idsldap1
Version: 6.4
Location: /home/idsldap1
Description: IBM Security Directory Server Instance V6.4
IP Addresses: All available
Port: 1389
Secure Port: 1636
Admin Server Port: 3540
Admin Server Secure Port: 3541
Type: Directory Server
```

```
Instance 3:

Name: idsldap2
Version: 6.4
Location: /home/idsldap2
Description: IBM Security Directory Server Instance V6.4
IP Addresses: All available
Port: 2389
Secure Port: 2636
Admin Server Port: 3542
Admin Server Secure Port: 3543
Type: Directory Server
```

Step8: Once the instances are created, we will configure the DB2 database for the SDS instance. The DB2 database serves as the backend to store all LDAP entries securely.

./idscfgdb -I idsldap1 -w P@ssw0rd -a idsldap1 -t idsldap1 -l /home/idsldap1 -n

Note: Here in the command

- -I is the instance name.
- -w is the password for the instance owner.
- -a is the database admin user.
- -t is the database name.
- -n prevents any prompts during execution.

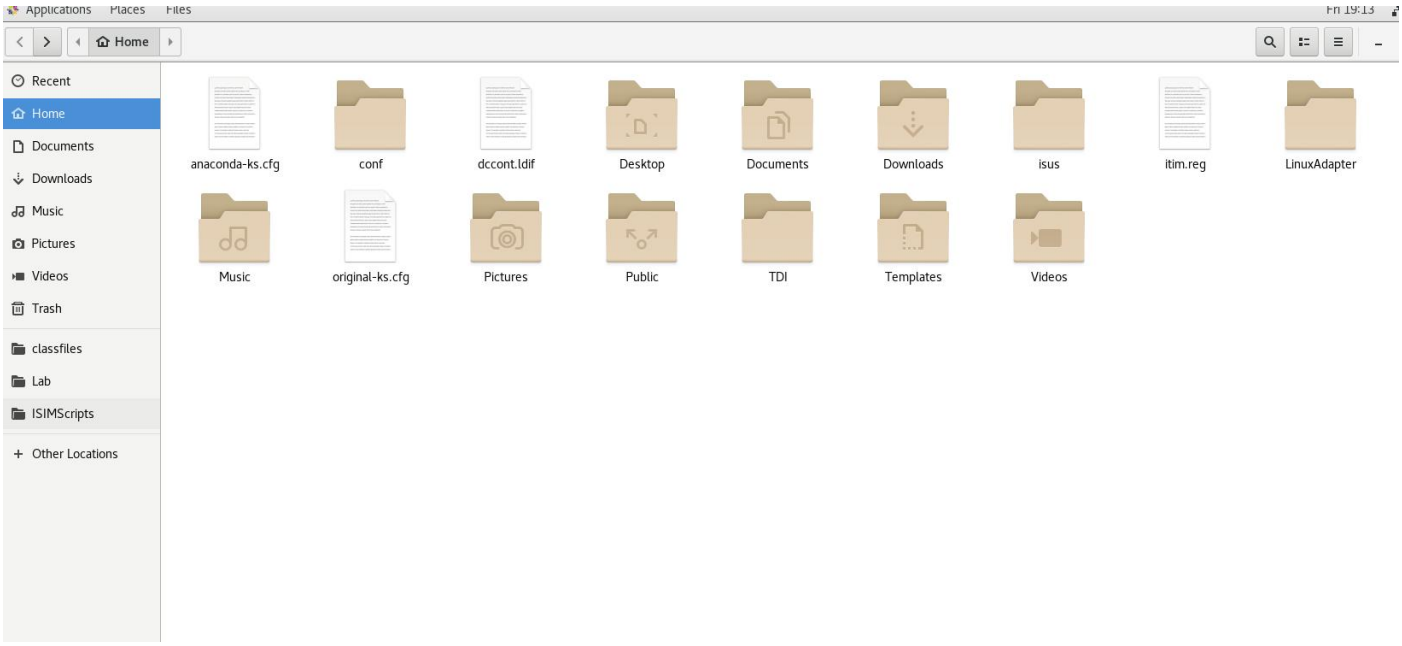
Output :

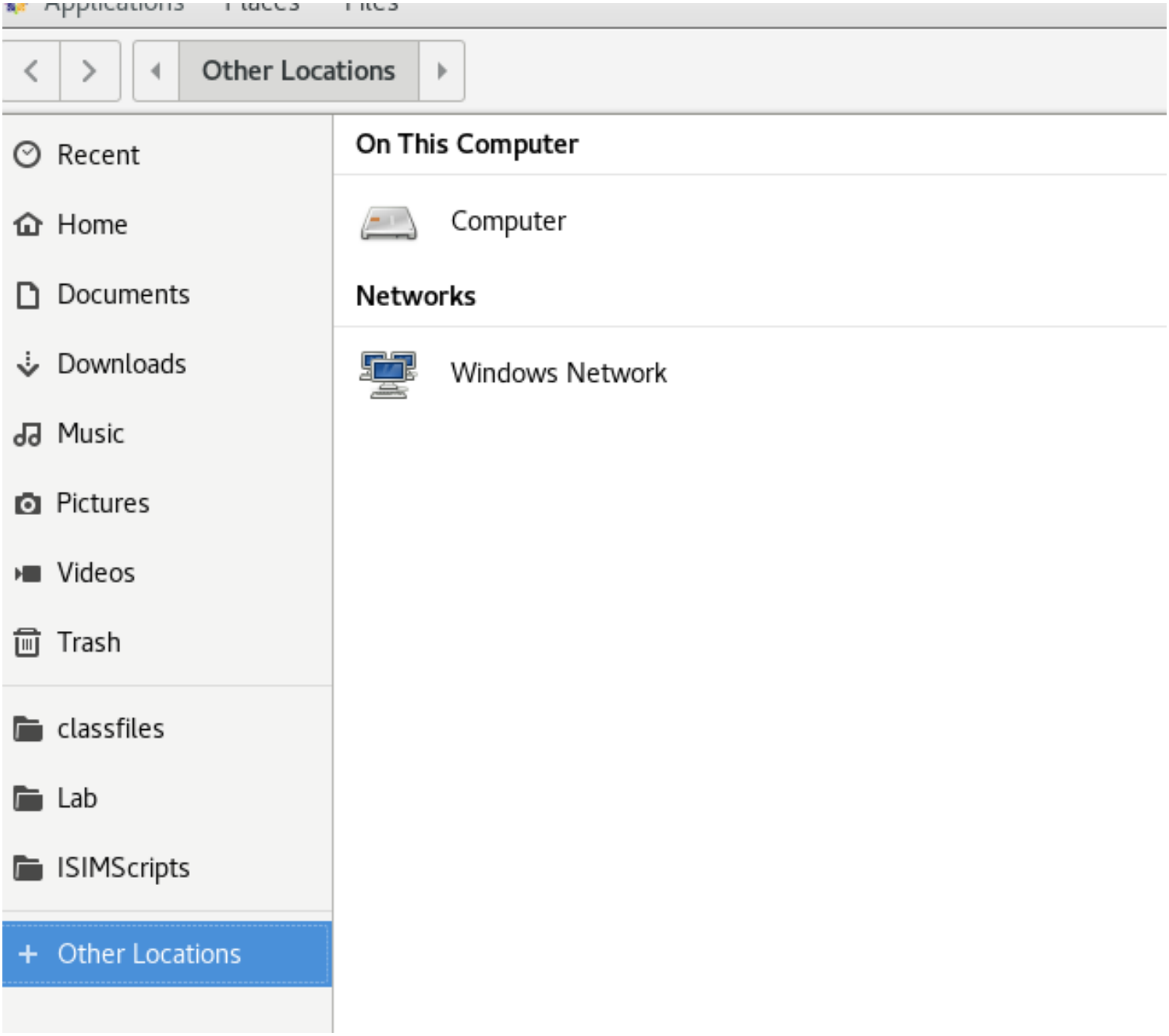
```
                    to update.
-k backup_dir       Backup location for the database.
                    If this argument is passed, online backup for the database will be configured.
-l db_location      DB2 database location.  For AIX, Linux, Solaris, and HP-UX systems,
                    this is a directory name (i.e., /home/ldapdb2).
                    For Windows systems, this must be a drive letter.
                    There must be at least 80 Megabytes free.  Additional
                    disk space should be available to accommodate growth
                    as directory entries are added.
-n                  Run in no-prompt mode. All output is generated except for
                    messages requiring user interaction. The -w option must
                    be used with this option.
-q                  Run in quiet mode. All output except errors is suppressed.
                    If the -d option is also specified, trace output
                    is not suppressed.
-s storage_loc      TABLESPACE container location.
-t db_name          DB2 database name.
-v                  Prints the version information about the command.
-w db_admin_pw      DB2 administrator password.
-x                  Create the DB2 database in a local codepage.
-z ext_size         Tablespace extension size in pages.
                    The default value for extension size is 8192 pages.
-?                  Displays the usage.
```

Step9 : Similarly, to configure the database for the second instance idsldap2, use the following command:
./idscfgdb -I idsldap2 -w P@ssw0rd -a idsldap2 -t idsldap2 -l /home/idsldap2 -n

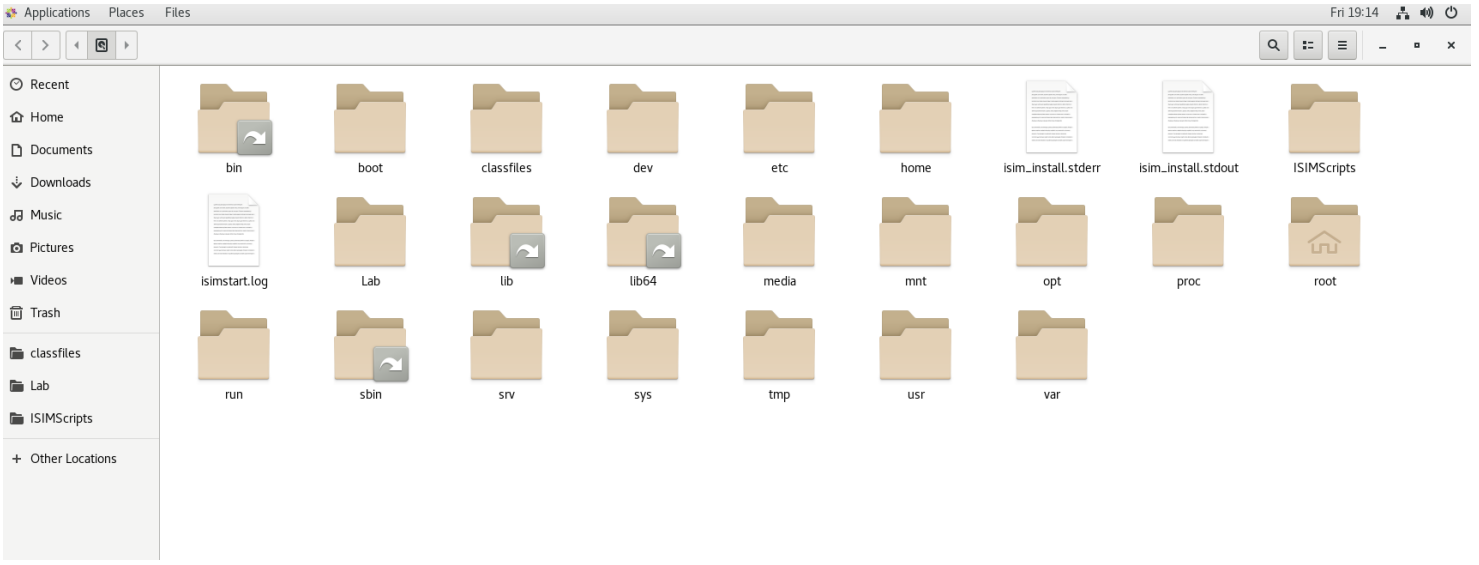
The database idsldap2 is created in the idsldap2 DB2 instance. After that, all the default SDS tables are added to this database.

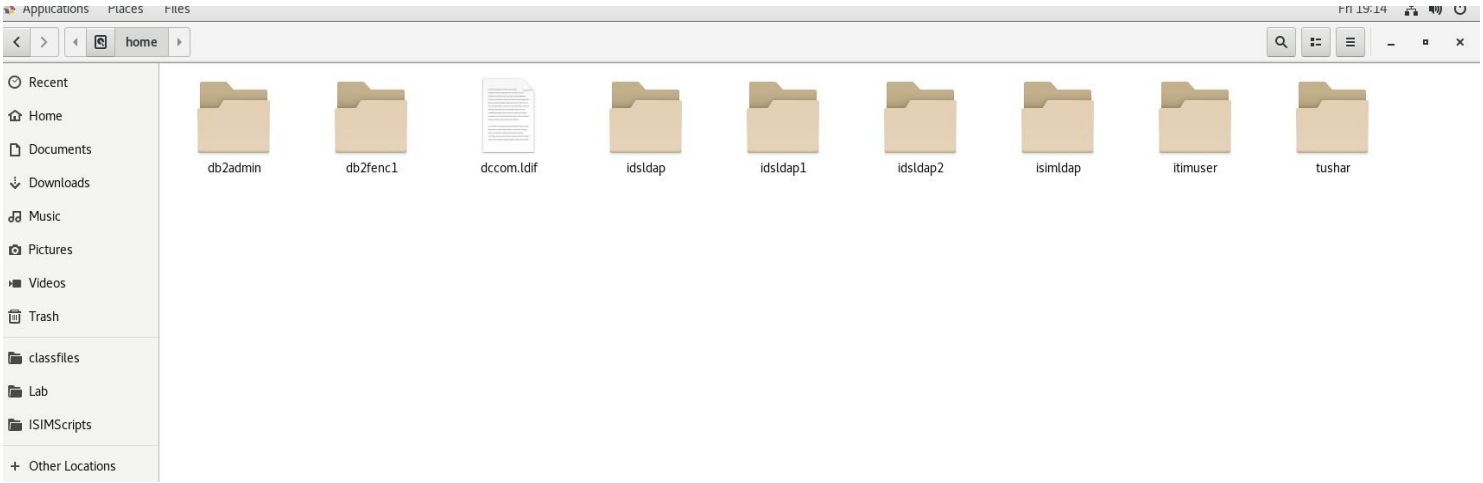
Output:


Applications
Places
Files
Home
Recent
Home
Documents
Downloads
Music
Pictures
Videos
Trash
classfiles
Lab
ISIMScripts
Other Locations
anaconda-ks.cfg
conf
dccont.ldif
Desktop
Documents
Downloads
isus
itim.reg
LinuxAdapter
Music
original-ks.cfg
Pictures
Public
TDI
Templates
Videos


Other Locations
Recent
Home
Documents
Downloads
Music
Pictures
Videos
Trash
classfiles
Lab
ISIMScripts
Other Locations
On This Computer
Computer
Networks
Windows Network

Step10 : Minimize the Terminal window, then double-click the Home icon on the Desktop. In the left pane, click Other Locations, then double-click Computer and Home. You'll see two folders: idsldap1 and idsldap2, which are the home directories for the SDS instance owners.





Step11 : Double-click idsldap1 directory and you can see idsslapd-idsldap1 folder which have all instance related configurations and log files.

```
[root@isim sbin]# ./idsdnpw -I idsldap1 -u cn=root -p P@ssw0rd -n
GLPWRP123I The program '/opt/ibm/ldap/V6.4/sbin/64/idsdnpw' is used with the
following arguments '-I idsldap1 -u cn=root -p ***** -n'.
You have chosen to perform the following actions:

GLPDPW004I The directory server administrator DN will be set.
GLPDPW005I The directory server administrator password will be set.
GLPDPW009I Setting the directory server administrator DN.
GLPDPW010I Directory server administrator DN was set.
GLPDPW006I Setting the directory server administrator password.
GLPDPW007I Directory server administrator password was set.
[root@isim sbin]#
```

Step12:Create admin user (cn=root) who can be used to do the administrative task on the ldap instances

./idsdnpw -I idsldap1 -u cn=root -p P@ssw0rd -n

Note : Here in the command

- -I is instance name
- -u user name of the instance admin
- -p for password of admin use
- r -n for no prompt.

Output :

```
[root@isim sbin]# ./idsdnpw -I idsldap2 -u cn=root -p P@ssw0rd -n
GLPWRP123I The program '/opt/ibm/ldap/V6.4/sbin/64/idsdnpw' is used with the
following arguments '-I idsldap2 -u cn=root -p ***** -n'.
You have chosen to perform the following actions:

GLPDPW004I The directory server administrator DN will be set.
GLPDPW005I The directory server administrator password will be set.
GLPDPW009I Setting the directory server administrator DN.
GLPDPW010I Directory server administrator DN was set.
GLPDPW006I Setting the directory server administrator password.
GLPDPW007I Directory server administrator password was set.
[root@isim sbin]#
```

Step 13: Similarly, for the idsldap2 instance, create the admin user cn=root using the following command:

/idsdnpw -I idsldap2 -u cn=root -p P@ssw0rd -n

```
[root@isim sbin]# ./idsdnpw -I idsldap2 -u cn=root -p P@ssw0rd -n
GLPWRP123I The program '/opt/ibm/ldap/V6.4/sbin/64/idsdnpw' is used with the
following arguments '-I idsldap2 -u cn=root -p ***** -n'.
You have chosen to perform the following actions:

GLPDPW004I The directory server administrator DN will be set.
GLPDPW005I The directory server administrator password will be set.
GLPDPW009I Setting the directory server administrator DN.
GLPDPW010I Directory server administrator DN was set.
GLPDPW006I Setting the directory server administrator password.
GLPDPW007I Directory server administrator password was set.
[root@isim sbin]#
```

The user is successfully created. This admin user will be used to connect to the LDAP and perform administrative tasks.

Step 14 Close terminal .

Learning outcomes :

- -We gained an understanding of how to create and configure directory server instances in IBM Security Directory Server (SDS).
- We learned how to use commands like idsadduser, idsicrt, idscfgdb, and idsdnpw to create instances, configure databases, and handle administrative tasks.
- -We successfully created and set up idsldap1 and idsldap2 instances with unique configurations such as ports, encryption seeds, and database settings.
- We also understood how to link and configure DB2 databases for SDS instances, allowing efficient management of LDAP entries.

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