PRACTICAL 6

AIM: Install Samba to share folders or files between Windows and Linux.

STEPS TO INSTALL SAMBA AND SHARE FOLDER'S AND FILE'S:

Step 1: This is the basic step and should be performed every time, that is to update system repositories.

sudo apt-get update

```
atharva@Atharva:~$ sudo apt-get update
[sudo] password for atharva:
Hit:1 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu jammy-updates/main i386 Packages [471 kB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [680 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [894 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [214 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 DEP-11 Metadata [100 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu jammy-updates/main DEP-11 48x48 Icons [36.1 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu jammy-updates/main DEP-11 64x64 Icons [55.1 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [15.6 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu jammy-updates/restricted i386 Packages [30.3 kB]
Get:14 http://in.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [714 kB]
Get:15 http://security.ubuntu.com/ubuntu jammy-security/main i386 Packages [305 kB]
Get:16 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [155 kB]
Get:17 http://in.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [114 kB]
Get:18 http://security.ubuntu.com/ubuntu jammy-security/main amd64 DEP-11 Metadata [42.8 kB]
Get:19 http://security.ubuntu.com/ubuntu jammy-security/main DEP-11 48x48 Icons [16.9 kB]
Get:20 http://in.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [536 B]
```

sudo apt-get upgrade

```
atharva@Atharva:~$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
  gir1.2-javascriptcoregtk-4.0 gir1.2-webkit2-4.0 gjs initramfs-tools initramfs-tools-bin initramfs-tools-core libgjs0g libjavascriptcoregtk-4.0-18 libwebkit2gtk-4.0-37 linux-generic-hwe-22.04
  linux-headers-generic-hwe-22.04 linux-image-generic-hwe-22.04 ubuntu-desktop ubuntu-desktop-minimal
The following packages will be upgraded:
  accountsservice alsa-ucm-conf amd64-microcode apparmor apport apport-gtk apt apt-utils avahi-autoipd avahi-daemon avahi-utils base-files bind9-dnsutils bind9-host bind9-libs binutils binutils-common
  binutils-x86-64-linux-gnu ca-certificates cpp-11 cpp-12 cups cups-browsed cups-bsd cups-client cups-common cups-core-drivers cups-daemon cups-filters cups-filters-core-drivers cups-ipp-utils cups-ppdc
  cups-server-common distro-info distro-info-data dnsmasq-base dpkg evince evince-common evolution-data-server evolution-data-server-common fonts-opensymbol fwupd fwupd-signed g++-11 gcc-11 gcc-11-base gcc-12
  gcc-12-base gdm3 ghostscript ghostscript-x gir1.2-accountsservice-1.0 gir1.2-adw-1 gir1.2-gdm-1.0 gir1.2-gnomedesktop-3.0 gir1.2-gst-plugins-base-1.0 gir1.2-gtk-4.0 gir1.2-mutter-10 gir1.2-pango-1.0
  gir1.2-rsvg-2.0 gnome-control-center gnome-control-center-data gnome-control-center-faces gnome-desktop3-data gnome-session-canberra gnome-settings-daemon gnome-settings-daemon-common gnome-shell
  gnome-shell-common gnome-shell-extension-ubuntu-dock gstreamer1.0-alsa gstreamer1.0-gl gstreamer1.0-gtk3 gstreamer1.0-plugins-base gstreamer1.0-plugins-base-apps gstreamer1.0-plugins-good
  gstreamer1.0-pulseaudio gstreamer1.0-x im-config intel-microcode ipp-usb iptables isc-dhcp-client isc-dhcp-common language-pack-en language-pack-en-base language-pack-gnome-en language-pack-gnome-en-base
  libaccountsservice0 libadwaita-1-0 libapparmor1 libapt-pkg6.0 libasan6 libasan8 libatomic1 libavahi-client3 libavahi-common-data libavahi-common3 libavahi-core7 libavahi-glib1 libavahi-ui-gtk3-0 libblinutils
  libcamel-1.2-63 libcanberra-gtk3-0 libcanberra-gtk3-module libcanberra-pulse libcanberra0 libcap2 libcap2-bin libcc1-0 libctf-nobfd0 libctf0 libcups2 libcupsfilters1 libcupsimage2 libcurl3-gnutls libcurl4
  libebackend-1.2-10 libebook-1.2-20 libebook-contacts-1.2-3 libecal-2.0-1 libedata-book-1.2-26 libedata-cal-2.0-1 libedataserver-1.2-26 libedataserverui-1.2-3 libegl-mesa0 libevdocument3-4 libevview3-3
  libfontembed1 libfprint-2-2 libfreetype6 libfwupd2 libfwupdplugin5 libgbm1 libgcc-11-dev libgcc-12-dev libgcc-s1 libgdm1 libgfortran5 libgl1-amber-dri libgl1-mesa-dri libglapi-mesa libglib2.0-0
  libglib2.0-bin libglib2.0-data libglx-mesa0 libgnome-bg-4-1 libgnome-desktop-3-19 libgnome-desktop-4-1 libgnutls30 libgomp1 libgpgme11 libgpgmepp6 libgs9 libgs9-common libgssapi-krb5-2 libgstreamer-gl1.0-0
  libgstreamer-plugins-base1.0-0 libgstreamer-plugins-good1.0-0 libgtk-4-1 libgtk-4-bin libgtk-4-common libidn12 libinput-bin libinput10 libip4tc2 libip6tc2 libitm1 libk5crypto3 libkpathsea6 libkrb5-3
  libkrb5support0 libldap-2.5-0 libldap-common libldb2 libllvm13 libllvm15 liblouis-data liblouis20 liblsan0 libmbim-glib4 libmbim-proxy libmm-glib0 libmutter-10-0 libnautilus-extension1a libncurses6
  libncursesw6 libnetplan0 libnss3 libpam-cap libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpangoxft-1.0-0 libpcsclite1 libperl5.34 libpoppler-cpp0v5 libpoppler-glib8 libpoppler118 libprotobuf23
  libpulse-mainloop-glib0 libpulse0 libpulsedsp libpython3.10 libpython3.10-minimal libpython3.10-stdlib libqmi-glib5 libqmi-proxy libquadmath0 libraw20 libreoffice-base-core libreoffice-calc
  libreoffice-common libreoffice-core libreoffice-draw libreoffice-gnome libreoffice-gtk3 libreoffice-impress libreoffice-math libreoffice-ogltrans libreoffice-pdfimport libreoffice-style-breeze
  libreoffice-style-colibre libreoffice-style-elementary libreoffice-style-yaru libreoffice-writer librsvg2-2 librsvg2-common libsasl2-2 libsasl2-modules libsasl2-modules-db libsasl2-modules-gssapi-mit
  libsmbclient libsnmp-base libsnmp40 libspeechd2 libssh-4 libssl3 libstdc++-11-dev libstdc++6 libsynctex2 libtiff5 libtinfo6 libtsan0 libtsan2 libubsan1 libuno-cppu3 libuno-cppuhelpergcc3-3
  libuno-purpenvhelpergcc3-3 libuno-sal3 libuno-salhelpergcc3-3 libunwind8 libwbclient0 libwebp7 libwebpdemux2 libwebpmux3 libx11-6 libx11-data libx11-xcb1 libxatracker2 libxml2 libxtables12 linux-firmware
  linux-libc-dev mesa-va-drivers mesa-vdpau-drivers mesa-vulkan-drivers modemmanager mokutil mutter-common nautilus nautilus-data ncurses-base ncurses-bin netplan.io open-vm-tools open-vm-tools-desktop
  openssh-client openssl perl perl-base perl-modules-5.34 poppler-utils printer-driver-foo2zjs printer-driver-foo2zjs-common printer-driver-splix pulseaudio pulseaudio-module-bluetooth pulseaudio-utils
  python-apt-common python3-apport python3-apt python3-debian python3-distro-info python3-distupgrade python3-gdbm python3-ldb python3-lib2to3 python3-louis python3-macaroonbakery python3-problem-report
  python3-protobuf python3-renderpm python3-reportlab python3-reportlab-accel python3-requests python3-software-properties python3-speechd python3-tz python3-uno python3.10 python3.10-minimal remmina
  remmina-common remmina-plugin-rdp remmina-plugin-secret remmina-plugin-vnc rsync samba-libs snapd software-properties-common software-properties-gtk speech-dispatcher speech-dispatcher-audio-plugins
  speech-dispatcher-espeak-ng sudo systemd-hwe-hwdb tar tcpdump thermald tzdata ubuntu-advantage-tools ubuntu-drivers-common ubuntu-minimal ubuntu-release-upgrader-core ubuntu-release-upgrader-gtk
  ubuntu-standard ufw uno-libs-private update-notifier update-notifier-common ure vim-common vim-tiny xserver-common xserver-xephyr xserver-xorg-core xserver-xorg-legacy xwayland xxd yaru-theme-gnome-shell
  yaru-theme-gtk yaru-theme-icon yaru-theme-sound
```

Step 2: Now after updating system repositories next step is to install samba using command.

sudo apt-get install samba

```
atharva@Atharva:~$ sudo apt-get install samba
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  attr ibverbs-providers libcephfs2 libgfapi0 libgfrpc0 libgfxdr0 libglusterfs0 libibverbs1 librados2 librdmacm1 liburing2 python3-dnspython python3-gpg python3-markdown python3-pygments
  python3-requests-toolbelt python3-samba python3-tdb samba-common samba-common-bin samba-dsdb-modules samba-vfs-modules tdb-tools
Suggested packages:
  python3-sniffio python3-trio python-markdown-doc python-pygments-doc ttf-bitstream-vera ctdb ldb-tools smbldap-tools winbind heimdal-clients
The following NEW packages will be installed:
  attr ibverbs-providers libcephfs2 libgfapi0 libgfrpc0 libgfxdr0 libglusterfs0 libibverbs1 librados2 librdmacm1 liburing2 python3-dnspython python3-gpg python3-markdown python3-pygments
  python3-requests-toolbelt python3-samba python3-tdb samba samba-common samba-common-bin samba-dsdb-modules samba-vfs-modules tdb-tools
0 upgraded, 24 newly installed, 0 to remove and 5 not upgraded.
Need to get 12.3 MB of archives.
After this operation, 72.1 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 python3-dnspython all 2.1.0-1ubuntu1 [123 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 python3-tdb amd64 1.4.5-2build1 [15.5 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-samba amd64 2:4.15.13+dfsg-0ubuntu1.3 [3,147 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 samba-common all 2:4.15.13+dfsg-0ubuntu1.3 [75.8 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 samba-common-bin amd64 2:4.15.13+dfsg-0ubuntu1.3 [620 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 tdb-tools amd64 1.4.5-2build1 [26.2 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 samba amd64 2:4.15.13+dfsg-0ubuntu1.3 [1,192 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 attr amd64 1:2.5.1-1build1 [22.6 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 libibverbs1 amd64 39.0-1 [69.3 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 ibverbs-providers amd64 39.0-1 [341 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 librdmacm1 amd64 39.0-1 [71.2 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 librados2 amd64 17.2.6-0ubuntu0.22.04.1 [3,582 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libcephfs2 amd64 17.2.6-0ubuntu0.22.04.1 [746 kB]
Get:14 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgfxdr0 amd64 10.1-1ubuntu0.1 [22.2 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libglusterfs0 amd64 10.1-1ubuntu0.1 [286 kB]
Get:16 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgfrpc0 amd64 10.1-1ubuntu0.1 [47.1 kB]
Get:17 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgfapi0 amd64 10.1-1ubuntu0.1 [77.3 kB]
Get:18 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 liburing2 amd64 2.1-2build1 [10.3 kB]
Get:19 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-gpg amd64 1.16.0-1.2ubuntu4.1 [214 kB]
Get:20 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 python3-markdown all 3.3.6-1 [68.5 kB]
Get:21 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 python3-pygments all 2.11.2+dfsg-2 [750 kB]
Get:22 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 python3-requests-toolbelt all 0.9.1-1 [38.0 kB]
Get:23 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 samba-dsdb-modules amd64 2:4.15.13+dfsg-0ubuntu1.3 [313 kB]
Get:24 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 samba-vfs-modules amd64 2:4.15.13+dfsg-0ubuntu1.3 [419 kB]
Fetched 12.3 MB in 13s (982 kB/s)
```

Step 3: Now you need to configure the shared folder so first thing you want to do is to edit the configuration file.

sudo nano /etc/samba/smb.conf

```
[global]

## Browsing/Identification ###

# Change this to the workgroup/NT-domain name your Samba server will part of
   workgroup = WORKGROUP
```

```
####### Authentication #######

# Server role. Defines in which mode Samba will operate. Possible
# values are "standalone server", "member server", "classic primary
# domain controller", "classic backup domain controller", "active
# directory domain controller".
  security=user
# Most people will want "standalone server" or "member server".
# Running as "active directory domain controller" will require first
# running "samba-tool domain provision" to wipe databases and create a
# new domain.
   server role = standalone server

   obey pam restrictions = yes
```

```
;[profiles]
;   comment = Users profiles
;   path = /home/samba/profiles
;   guest ok = yes
;   browseable = yes
;   create mask = 0600
;   directory mask = 0700
```

Step 4: Now we will make the directory and check if it's created or not.

a) sudo mkdir -p /srv/samba/share

```
atharva@Atharva:~$ sudo mkdir -p /srv/samba/share
```

b) cd /srv

```
atharva@Atharva:~$ cd /srv
atharva@Atharva:/srv$
```

c) ls

```
atharva@Atharva:/srv$ ls
samba
```

d) ls samba

```
atharva@Atharva:/srv$ ls samba
share
```

STEP 5: Once you have made the directories you need to change ownership so to do that we execute the following command.

sudo chown nobody.nogroup /srv/samba/share

```
atharva@Atharva:/srv$ sudo chown nobody.nogroup /srv/samba/share
```

Step 6: Now we have to list the files present the directory we created, so we will use the list long command but before that we will move into the directory.

a) cd /srv/samba

```
atharva@Atharva:/srv$ cd /srv/samba
atharva@Atharva:/srv/samba$
```

b) ll

```
atharva@Atharva:/srv/samba$ ll
total 12
drwxr-xr-x 3 root   root    4096 Aug 18 22:14 ./
drwxr-xr-x 3 root   root    4096 Aug 18 22:14 ../
drwxr-xr-x 2 nobody nogroup 4096 Aug 18 22:14 share/
```

Step 7: Now we will configure the nmbd file for samba, for that we will use the following command.

sudo nano /etc/init/nmbd.conf

```
gnkhalsa@gnkhalsa-VirtualBox: /srv/samba
  GNU nano 2.5.3                File: /etc/init/nmbd.conf

description "NetBIOS name server"
author      "Steve Langasek <steve.langasek@ubuntu.com>"

start on (local-filesystems and net-device-up IFACE!=lo)
stop on runlevel [!2345]

expect fork
respawn

pre-start script
#       [ -f /etc/samba/smb.conf ] || { stop; exit 0; }
#
#       install -o root -g root -m 755 -d /var/run/samba
#       NMBD_DISABLED=`testparm -s --parameter-name='disable netbios' 2>/dev/null || true`
#
#       [ "x$NMBD_DISABLED" = xYes ] && { stop; exit 0; }
#
#       exit 0
end script

exec nmbd -D


                              [ Read 21 lines ]
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos  ^Y Prev Page
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page
```

Step 8: Now we will restart our nmbd and smbd services using commands.

sudo service smbd restart

```
atharva@Atharva:/srv/samba$ sudo service smbd restart
```

Step 9: Now create a file using touch command in /srv/samba/share named test.txt and we will check if our file is created or not.

sudo touch /srv/samba/share/test.txt

```
atharva@Atharva:/srv/samba$ sudo touch /srv/samba/share/test.txt
```

```
atharva@Atharva:/srv/samba$ ll /srv/samba/share
total 8
drwxr-xr-x 2 nobody nogroup 4096 Aug 18 22:31 ./
drwxr-xr-x 3 root   root    4096 Aug 18 22:14 ../
-rw-r--r-- 1 root   root       0 Aug 18 22:31 test.txt
```