Ex 3 COMPILING FROM THE SOURCE
Date: 29.08.20

Aim:

To study and implement the compiling from the source.

Description:

tar

The Linux 'tar' stands for tape archive, is used to create Archive and extract the Archive files. tar command in Linux is one of the important commands which provides archiving functionality in Linux. We can use Linux tar command to create compressed or uncompressed Archive files and also maintain and modify them.

zip

ZIP is a compression and file packaging utility for Unix. Each file is stored in a single .zip {.zip-filename} file with the extension .zip. ZIP is a compression and file packaging utility for Unix. Each file is stored in a single .zip {.zip-filename} file with the extension .zip.

gzip

gzip command compresses files. Each single file is compressed into a single file. The compressed file consists of a GNU zip header and deflated data. If given a file as an argument, gzip compresses the file, adds a ".gz" suffix, and deletes the original file. With no arguments, gzip compresses the standard input and writes the compressed file to standard output.

Difference between Gzip and zip command in Unix and when to use which command

- ZIP and GZIP are two very popular methods of compressing files, in order to save space, or to reduce the amount of time needed to transmit the files across the network, or internet.
- In general, GZIP is much better compared to ZIP, in terms of compression, especially when compressing a huge number of files.
- The common practice with GZIP, is to archive all the files into a single tarball before compression. In ZIP files, the individual files are compressed and then added to the archive.

- When you want to pull a single file from a ZIP, it is simply extracted, then decompressed. With GZIP, the whole file needs to be decompressed before you can extract the file you want from the archive.
- When pulling a 1MB file from a 10GB archive, it is quite clear that it would take a lot longer in GZIP, than in ZIP.
- GZIP's disadvantage in how it operates, is also responsible for GZIP's advantage. Since the compression algorithm in GZIP compresses one large file instead of multiple smaller ones, it can take advantage of the redundancy in the files to reduce the file size even further.
- If you archive and compress 10 identical files with ZIP and GZIP, the ZIP file would be over 10 times bigger than the resulting GZIP file.

Commands:

Sl. No.	Command Name	Syntax	options
1.	**rpm**	rpm {rpm-file}	**-a, --all** Query all packages **-f** Query for packages owning given file
2.	**apt-get**	apt-get [options] source pkg1 [pkg2 ...]	**-a** It prints all the system information in the order **-s** It prints the kernel name. **-n** It prints the hostname of the network node **-r** It prints the kernel release

			date **-v** It prints the version of the current kernel
3.	**tar**	tar [options] [archive-file] [file or directory to be archived]	**-c** Creates Archive **-x** Extract the archive **-f** Creates archive with given filename **-t** Displays or lists files in archive file **-u** Archives and adds to an existing archive file **-A** Concatenates the archive files **-z** zip, tells tar command that create tar file using gzip **-W** Verify a archive file **-r** update or add file or directory in already existed .tar file

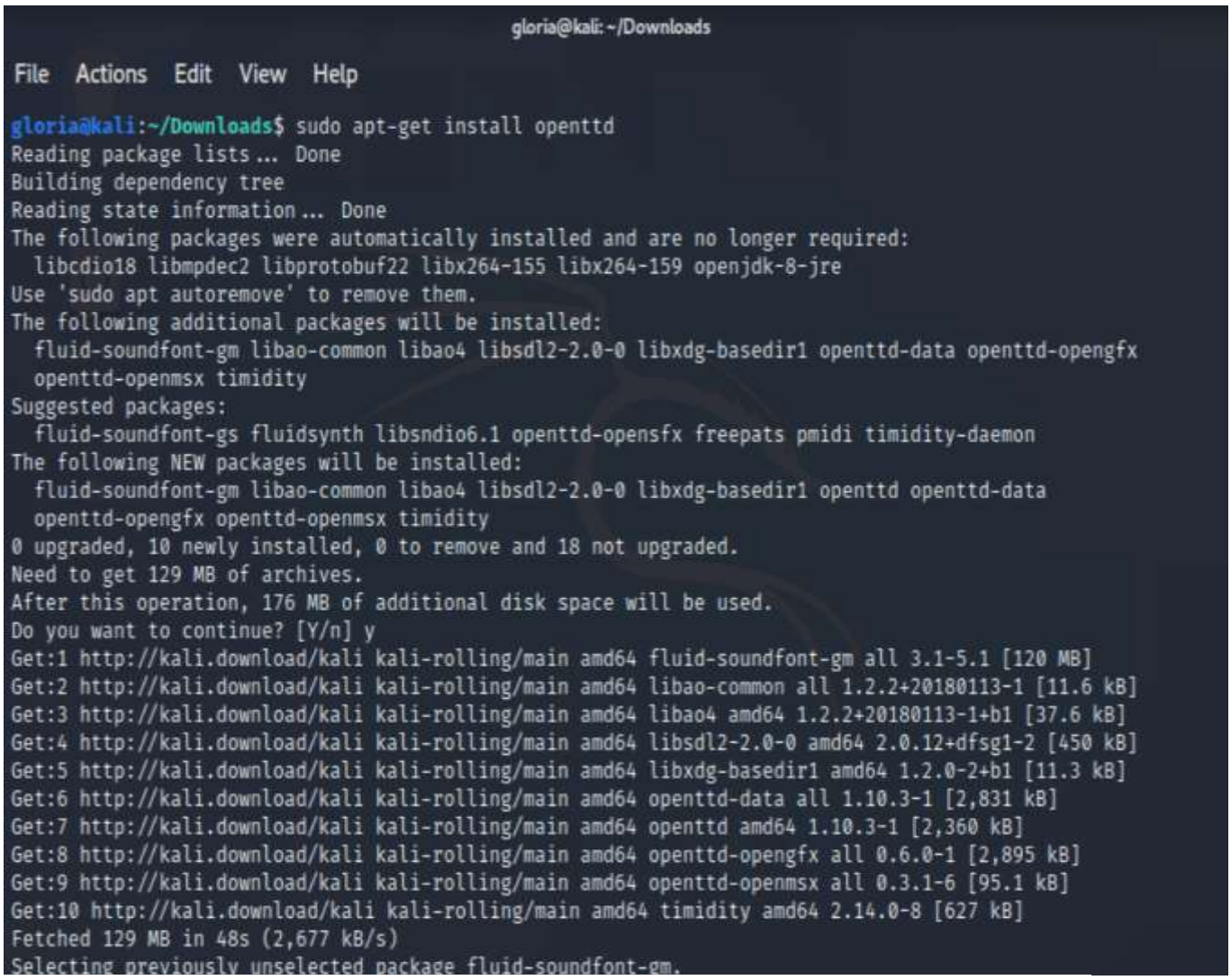
4.	**zip**	zip [options] zipfile files_list	**-d** : Removes the file from the zip archive **-u** : Updates the file in the zip archive **-m** : Deletes the original files after zipping **-r** : To zip a directory recursively **-x** : Exclude the files in creating the zip **-v** : Verbose mode or print diagnostic version info
5.	**gzip**	gzip [Options] [filenames]	**-f** : Sometimes a file cannot be compressed **-k** : By default when you compress a file using the "gzip" command you end up with a new file with the extension **-L** :

			This option displays the gzip license **-r** : This option can compress every file in a folder and its subfolders **-[1-9] :** It allows to change the compression level **-v :** his option displays the name and percentage reduction for each file compressed or decompressed **-d** : This option allows you to decompress a file using the “gzip” command.

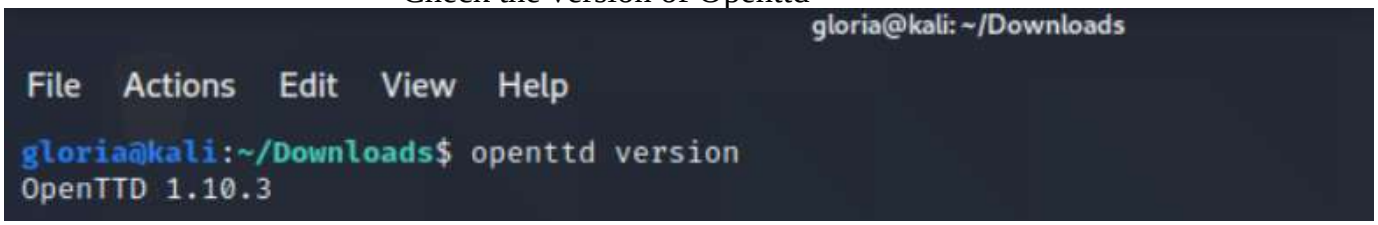
Exercise:

1. Compile the source from Openttd package

Installing Openttd using package manager



Check the version of Openttd



Output:

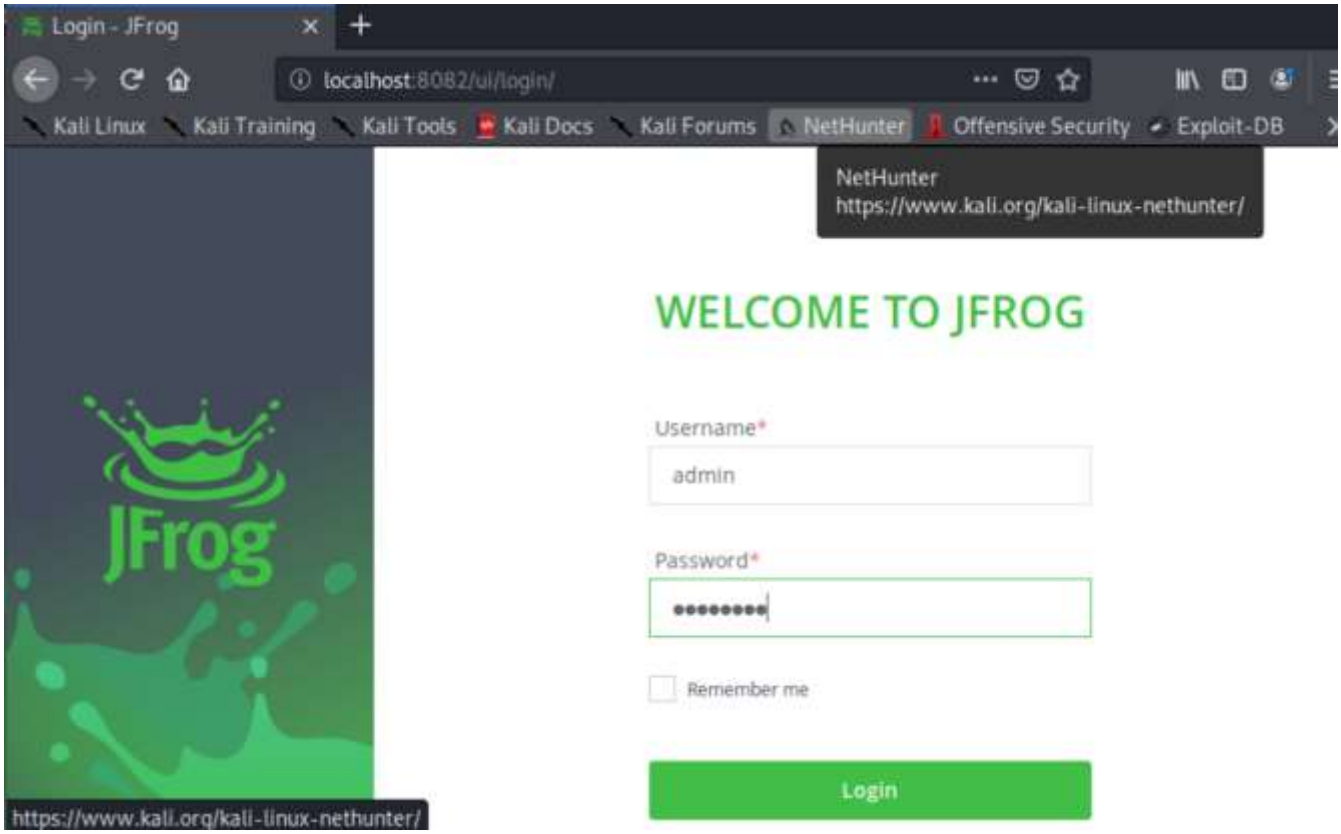
Run the Openttd

2. Compile the source from JFrog package

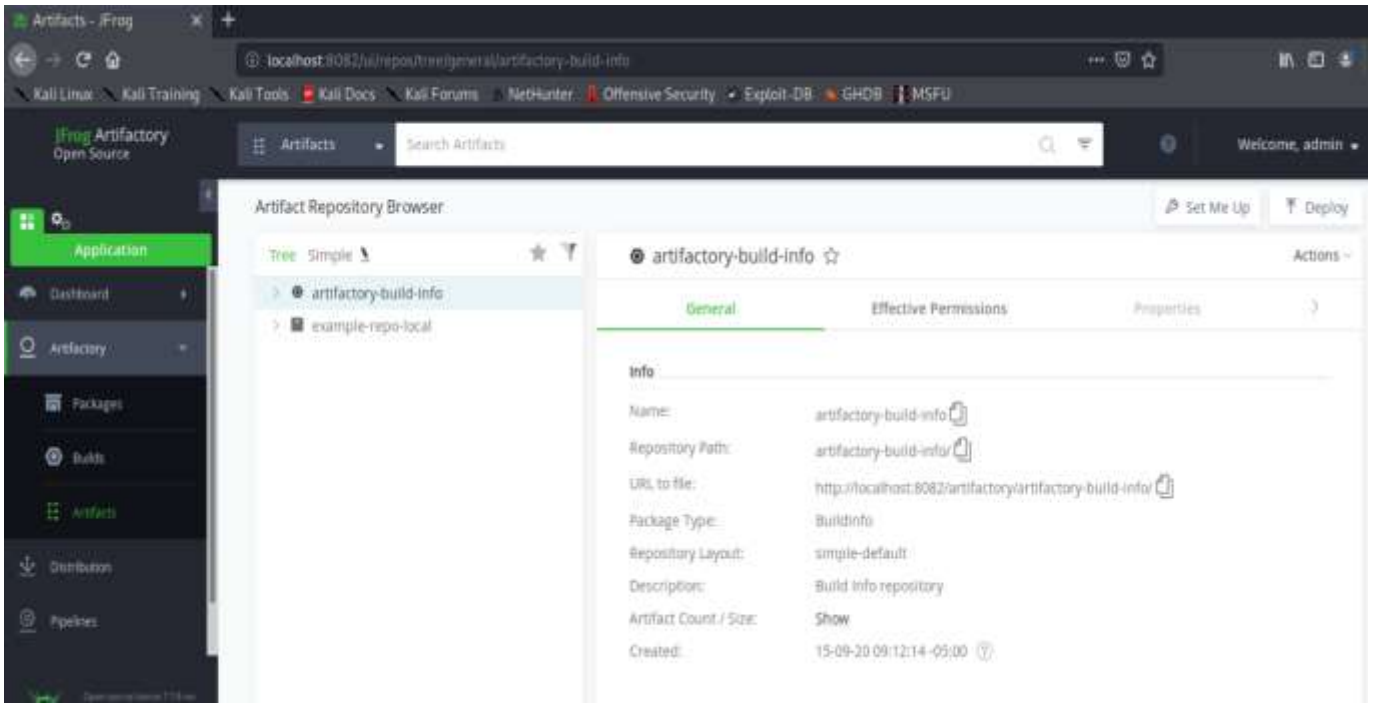
Download and Extract the JFrog file

Compiling the Source of JFrog

Run the JFrog in the Browser and Enter Valid Credentials



Output:



3. Compile the Source from gcc

Check the Version of gcc

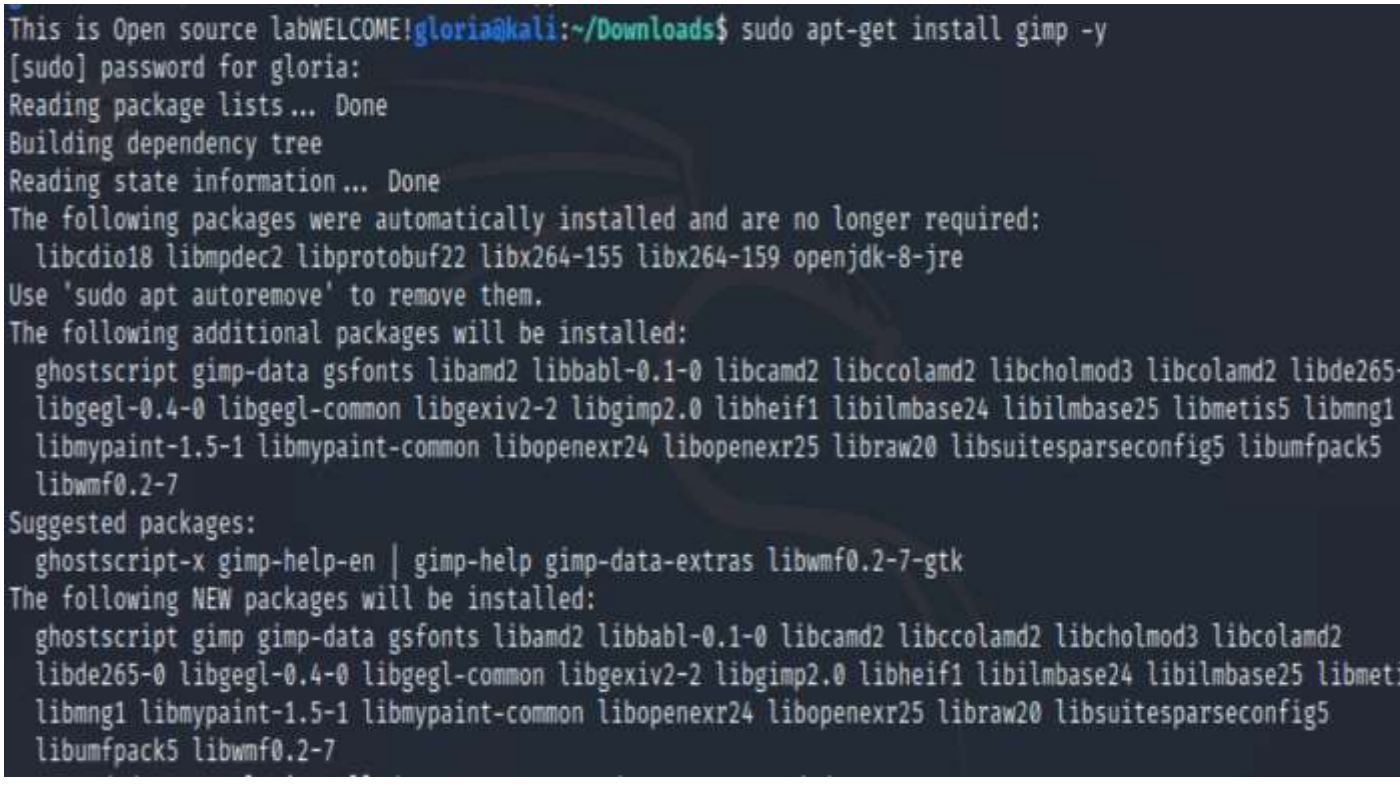
Sample Program

Output:

Compile and Run the C program using gcc

4. Compile the source from any open source package (GIMP)

Installing GIMP using package manager



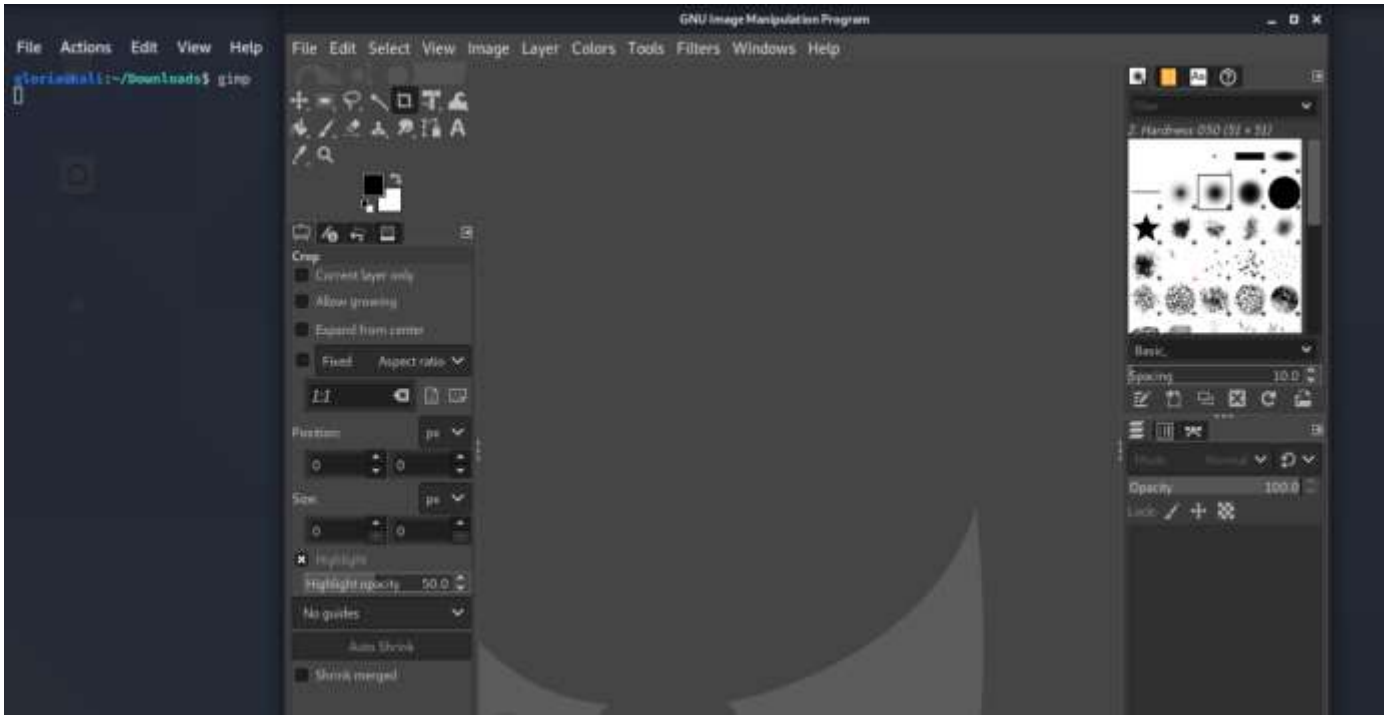
Update the System to Compile GIMP

```
File  Actions  Edit  View  Help        gloria@kali: ~/Downloads

gloria@kali:~/Downloads$ sudo apt-get update
Get:1 http://kali.download/kali kali-rolling InRelease [30.5 kB]
Get:2 http://kali.download/kali kali-rolling/main amd64 Packages [16.6 MB]
Get:3 http://kali.download/kali kali-rolling/contrib amd64 Packages [100 kB]
Get:4 http://kali.download/kali kali-rolling/non-free amd64 Packages [199 kB]
Fetched 16.9 MB in 8s (2,200 kB/s)
Reading package lists ... Done
W: Target Packages (main/binary-amd64/Packages) is configured multiple times in /etc/apt/sourc
apt/sources.list:7
W: Target Packages (main/binary-all/Packages) is configured multiple times in /etc/apt/sources
t/sources.list:7
W: Target Translations (main/i18n/Translation-en_US) is configured multiple times in /etc/apt/
/etc/apt/sources.list:7
W: Target Translations (main/i18n/Translation-en) is configured multiple times in /etc/apt/sou
c/apt/sources.list:7
```

Output:

Run the GIMP



Result: The compiling from the source is studied and executed.

Video Link: https://youtu.be/elp4F0ITXNI