



LOVELY
PROFESSIONAL
UNIVERSITY

INT 301 CA3

OPEN-SOURCE TECHNOLOGIES

Name : Abhishek Kumar Singh

Program : B.Tech

Reg: 11918463

School : Computer Science and Engineering

Faculty : Rajeshwar Sharma

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1. INTRODUCTION

1.1 OBJECTIVE OF THE PROJECT

The main aim of this project is to research on an open-source software to generate a report of your system to check how many new software is installed, how many are deleted, and how many updates have been done in the last 3 months, and many more features like, Upadating Software, removing Software, installtion of software.

1.2 DESCRIPTION OF THE PROJECT

Pamac CLI: like all Package Manager tools, it lists information it gathers from your computer regarding your installed Software, Removed Software, Updated Softwares, Pamac is a package manager used in linux System, and it has a command-line interface (CLI) that allows users to manage software packages.

Details shown by Pamac CLI:

- I. **Package information:** Pamac CLI allows you to see information about avaiable package in the repositories, it shows name of your package, version of your package, thin and crisp description about package and also dependencies.
- II. **Package search:** You can search for packages by name or keywords using Pamac CLI.
- III. **Package installation:** Pamac CLI allows you to install packages from the repositories, including updates and upgrades.
- IV. **Package removal:** You can remove packages from your system using Pamac CLI.
- V. **Package upgrade:** You can upgrade all the packages on your system using Pamac CLI.

- VI. **Package dependency management:** Pamac CLI helps you manage package dependencies by installing or removing them as needed.
- VII. **Package repository management:** Pamac CLI allows you to manage the repositories that your system is using, including adding, removing, and updating them.
- VIII. **Package cache management:** Pamac CLI helps you manage the package cache on your system, including cleaning it up to free up disk space.
- IX. **Package build and installation from AUR:** Pamac CLI allows you to build and install packages from the Arch User Repository (AUR).
- X. **Package transaction history:** Pamac CLI maintains a log of all the package transactions on your system, which can be helpful for troubleshooting or auditing purpose

1.3 SCOPE OF THE PROJECT

We've used many programs that report on software components of a computer, and none of them have been as easy to use and read as Pamac CLI. It's easy to manage software/Packages and export reports as well as read every section of the program.

Pamac provides a user-friendly Command Line Interface that simplifies the process of finding and installing software. It also helps users to manage dependencies between packages and resolve any conflicts that may arise during the installation process. Additionally, Pamac can manage both official repositories and user-generated repositories, giving users access to a wider range of software.

Overall, the main objective of Pamac is to make package management on Linux more accessible and user-friendly, making it easier for users to install and manage software on their system.

2. SYSTEM DESCRIPTION

2.1 TARGET SYSTEM DESCRIPTION

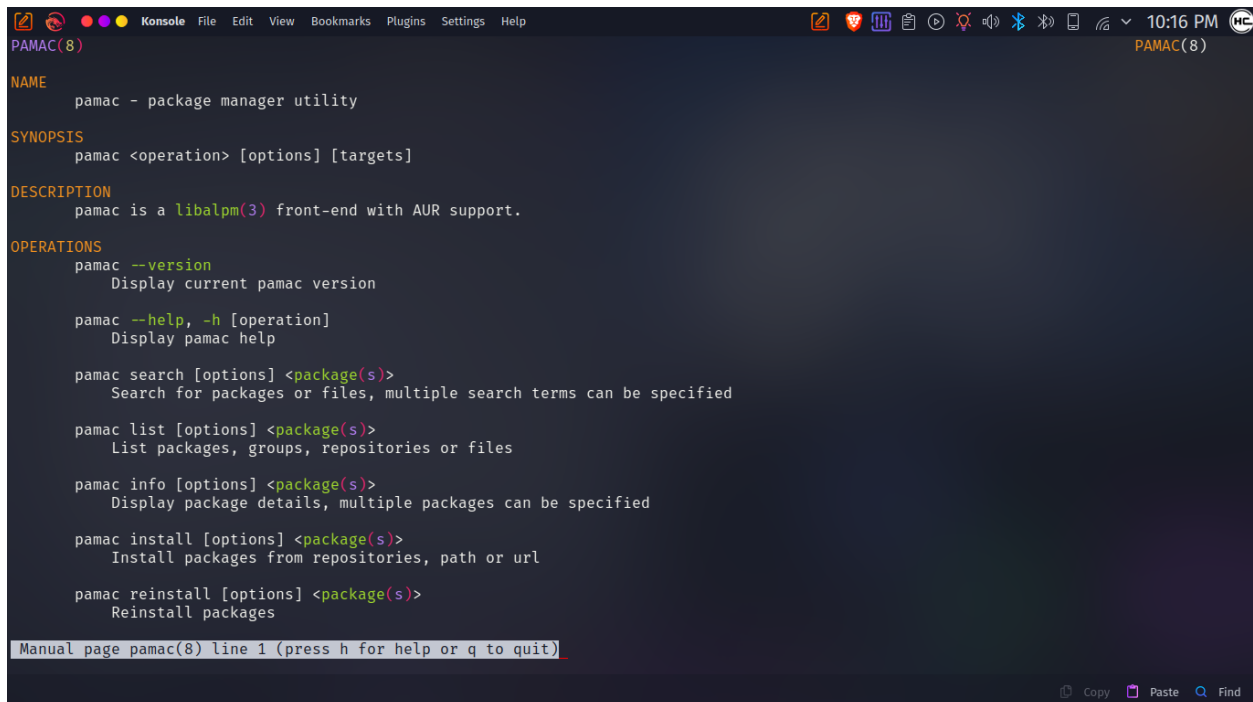
The above mentioned open-source software can be used in any system with Arch Based Linux.

Arch Linux and its derivatives, such as Manjaro Linux, which are based on Arch Linux. It is not designed to run on other operating systems.

If you are using a different Linux distribution, you can use the package manager that is specific to your distribution. For example, Ubuntu uses the apt package manager, while Fedora uses the dnf package manager.

3. ANALYSIS REPORT

1.1 SYSTEM SNAPSHOTS



```
Konsole File Edit View Bookmarks Plugins Settings Help
PAMAC(8)
NAME
    pamac - package manager utility

SYNOPSIS
    pamac <operation> [options] [targets]

DESCRIPTION
    pamac is a libalpm(3) front-end with AUR support.

OPERATIONS
    pamac --version
        Display current pamac version

    pamac --help, -h [operation]
        Display pamac help

    pamac search [options] <package(s)>
        Search for packages or files, multiple search terms can be specified

    pamac list [options] <package(s)>
        List packages, groups, repositories or files

    pamac info [options] <package(s)>
        Display package details, multiple packages can be specified

    pamac install [options] <package(s)>
        Install packages from repositories, path or url

    pamac reinstall [options] <package(s)>
        Reinstall packages

Manual page pamac(8) line 1 (press h for help or q to quit)
```

The above image shows the manpage of the pamac CLI software which basically is the summary of the Package information.

i. Search about any packages before installing.

```
hello@coder in ~ on ʘ git/abhi.htm [?] via  ● v19.8.1 via  ■ v8.2.4
➤ pamac search smplayer
rosa-media-player-plugin                               1.0-2                AUR
  The new multimedia player(based on SMPlayer) with clean and elegant UI (mozilla plugin only).
papius-smplayer-theme-git                             20181024-2          AUR
  Papius theme for SMPlayer (git version)
buuf-smplayer                                          1.0-0                AUR
  Theme for SMPlayer
smplayer-themes-svn                                   18.6.0.r9225-1      AUR
  Themes for SMPlayer
smplayer-themes                                       1:20.11.0-1         community
  Themes for SMPlayer
smplayer-svn-notitlebar                               18.3.0.r8982M-1     AUR
  Advanced front-end for MPlayer/MPV + Patch to disable titlebar in compact mode
smplayer-skins-git                                   20.11.0.rc3d8454-1  AUR
  Skins for SMPlayer
smplayer-skins                                       1:20.11.0-1         community
  Skins for SMPlayer
smplayer-qt4                                          22.2.0-1            AUR
  Complete front-end for MPlayer/MPV (Qt4)
smplayer-git                                          22.7.0.rb364f4884-1 AUR
  Media player with built-in codecs that can play virtually all video and audio formats
smplayer                                              22.7.0-2            community
  Media player with built-in codecs that can play virtually all video and audio formats

hello@coder in ~ on ʘ git/abhi.htm [?] via  ● v19.8.1 via  ■ v8.2.4 took 3s
➤ _
```

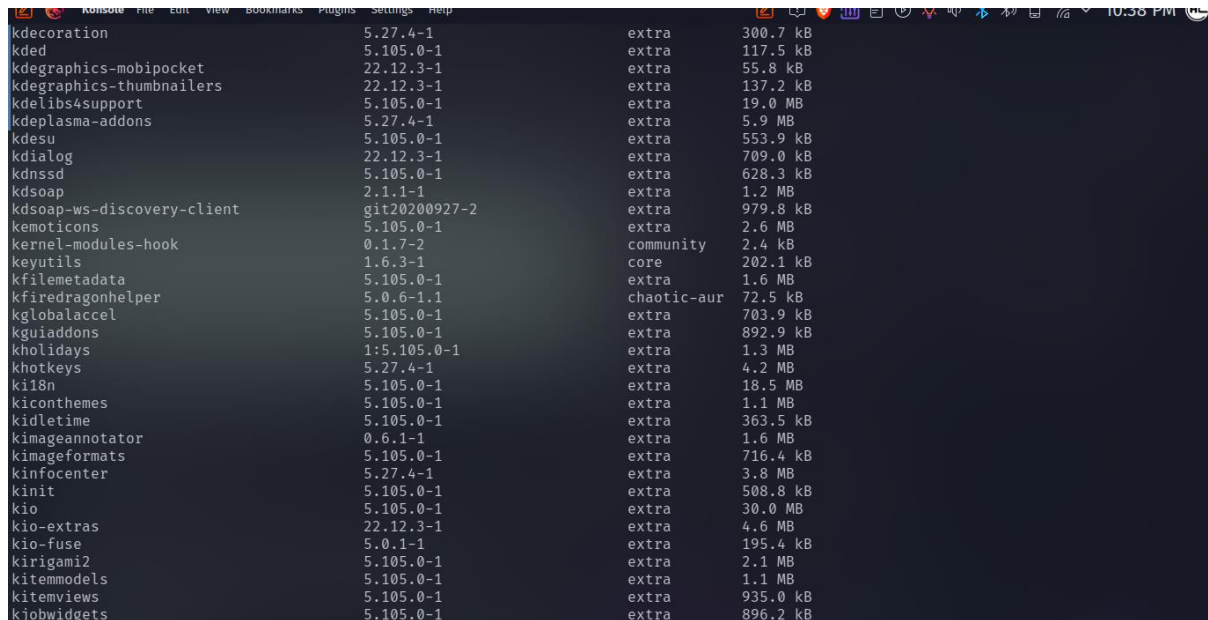
ii. Install any Packages/software you want to get in your system

```
hello@coder in ~ on ʘ git/abhi.htm [?] via  ● v19.8.1 via  ■ v8.2.4
➤ pamac install smplayer smplayer-themes
Preparing ...
===== AUTHENTICATING FOR org.manjaro.pamac.commit =====
Authentication is required to install, update, or remove packages
Authenticating as: HC (hello)
Password:
===== AUTHENTICATION COMPLETE =====
Synchronizing package databases ...
unable to lock database
Failed to synchronize databases
Refreshing AUR ...
155.6 kB/10.2 MB
https://aur.archlinux.org/packages-meta-ext-v1.json.gz: Socket I/O timed out
Failed to synchronize AUR database

Choose optional dependencies for smplayer:
1: smplayer-skins: skin themes collection
2: youtube-dl: youtube videos and streaming
3: yt-dlp: youtube videos and streaming
4: mplayer: alternative multimedia engine

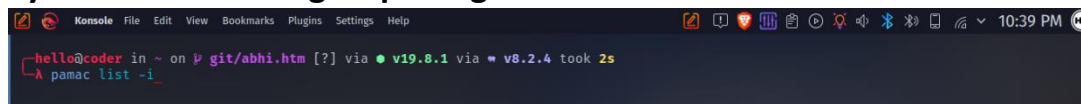
Enter a selection (default=none): _
```

iii. List all Installed Packages/software



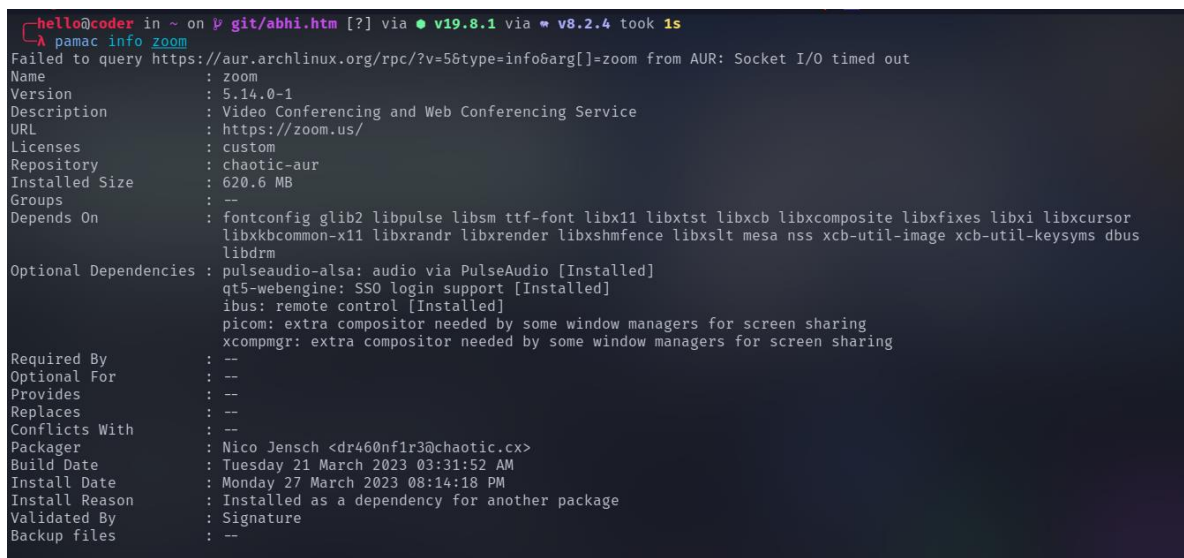
kdecoration	5.27.4-1	extra	300.7 kB
kded	5.105.0-1	extra	117.5 kB
kdegraphics-mobipocket	22.12.3-1	extra	55.8 kB
kdegraphics-thumbnailers	22.12.3-1	extra	137.2 kB
kdelibs4support	5.105.0-1	extra	19.0 MB
kdeplasma-addons	5.27.4-1	extra	5.9 MB
kdesu	5.105.0-1	extra	553.9 kB
kdiallog	22.12.3-1	extra	709.0 kB
kdnsd	5.105.0-1	extra	628.3 kB
kdsoap	2.1.1-1	extra	1.2 MB
kdsoap-ws-discovery-client	git20200927-2	extra	979.8 kB
kemoticons	5.105.0-1	extra	2.6 MB
kernel-modules-hook	0.1.7-2	community	2.4 kB
keyutils	1.6.3-1	core	202.1 kB
kfilemetadata	5.105.0-1	extra	1.6 MB
kfiredragonhelper	5.0.6-1.1	chaotic-aur	72.5 kB
kglobalaccel	5.105.0-1	extra	703.9 kB
kguiaddons	5.105.0-1	extra	892.9 kB
kolidays	1:5.105.0-1	extra	1.3 MB
khotkeys	5.27.4-1	extra	4.2 MB
ki18n	5.105.0-1	extra	18.5 MB
kiconthemes	5.105.0-1	extra	1.1 MB
kidletime	5.105.0-1	extra	363.5 kB
kimageannotator	0.6.1-1	extra	1.6 MB
kimageformats	5.105.0-1	extra	716.4 kB
kinfocenter	5.27.4-1	extra	3.8 MB
kinit	5.105.0-1	extra	508.8 kB
kio	5.105.0-1	extra	30.0 MB
kio-extras	22.12.3-1	extra	4.6 MB
kio-fuse	5.0.1-1	extra	195.4 kB
kirigami2	5.105.0-1	extra	2.1 MB
kitemmodels	5.105.0-1	extra	1.1 MB
kitemviews	5.105.0-1	extra	935.0 kB
kjobwidgets	5.105.0-1	extra	896.2 kB

Syntax for the listing all packages.



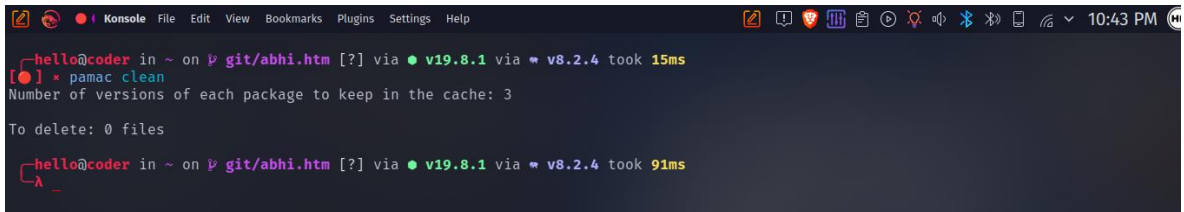
```
hello@coder in ~ on v git/abhi.htm [?] via v19.8.1 via v8.2.4 took 2s
pamac list -i
```

Show info about any packages



```
hello@coder in ~ on v git/abhi.htm [?] via v19.8.1 via v8.2.4 took 1s
pamac info zoom
Failed to query https://aur.archlinux.org/rpc/?v=5&type=info&arg[]=zoom from AUR: Socket I/O timed out
Name      : zoom
Version   : 5.14.0-1
Description : Video Conferencing and Web Conferencing Service
URL       : https://zoom.us/
Licenses  : custom
Repository : chaotic-aur
Installed Size : 620.6 MB
Groups    : --
Depends On : fontconfig glib2 libpulse libsm ttf-font libx11 libxtst libxcb libxcomposite libxfixes libxi libxcursor
            libxkbcommon-x11 libxrandr libxrender libxshmfence libxslt mesa nss xcb-util-image xcb-util-keysyms dbus
            libdrm
Optional Dependencies : pulseaudio-alsa: audio via PulseAudio [Installed]
                        qt5-webengine: SSO login support [Installed]
                        ibus: remote control [Installed]
                        picom: extra compositor needed by some window managers for screen sharing
                        xcompmgr: extra compositor needed by some window managers for screen sharing
Required By : --
Optional For : --
Provides    : --
Replaces    : --
Conflicts With : --
Packager    : Nico Jensch <dr460nflr3@chaotic.cx>
Build Date  : Tuesday 21 March 2023 03:31:52 AM
Install Date : Monday 27 March 2023 08:14:18 PM
Install Reason : Installed as a dependency for another package
Validated By : Signature
Backup files : --
```

This picture shows the cache of packages stored in pamac

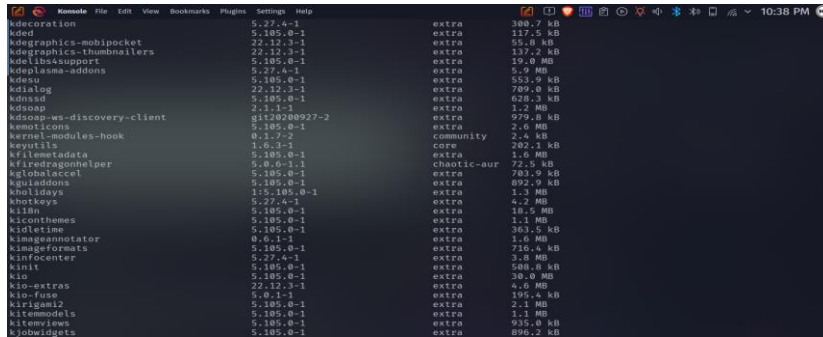


```
hello@coder in ~ on ʤ git/abhi.htm [?] via ● v19.8.1 via ʤ v8.2.4 took 15ms
[●] * pamac clean
Number of versions of each package to keep in the cache: 3
To delete: 0 files

hello@coder in ~ on ʤ git/abhi.htm [?] via ● v19.8.1 via ʤ v8.2.4 took 91ms
λ _
```

The image shows a terminal window titled 'Konsole' with a menu bar (File, Edit, View, Bookmarks, Plugins, Settings, Help) and a status bar (10:43 PM). The terminal output shows the execution of the 'pamac clean' command, which reports that 3 versions of each package are kept in the cache and that 0 files are to be deleted. The prompt changes from 'hello@coder' to 'λ _' at the bottom.

Output of installed-software.txt



Package Name	Version	Architecture	Repository	Size
kdecoration	5.27.4-1	extra		300.7 kB
kded	5.105.0-1	extra		217.5 kB
kdegraphics-mobipocket	22.12.3-1	extra		55.0 kB
kdegraphics-thumbnailers	22.12.3-1	extra		197.7 kB
kdelibs-support	5.105.0-1	extra		19.0 MB
kdeplasma-addons	5.27.4-1	extra		5.9 MB
kdesu	5.105.0-1	extra		553.9 kB
kdialog	22.12.3-1	extra		709.0 kB
knsd	5.105.0-1	extra		628.3 kB
krsnnp	2.1.1-1	extra		1.2 MB
krsnnp-ws-discovery-client	git20200927-2	extra		979.8 kB
ksemantics	5.105.0-1	extra		2.6 MB
kernel-modules-hook	0.1.7-2	community		2.4 kB
koyutils	1.0.3-1	core		202.1 kB
kfilemetadata	5.105.0-1	extra		1.6 MB
kfireplugonhelper	5.0.0-1-1	chaotic-aur		72.5 kB
globalaccel	5.105.0-1	extra		703.9 kB
kgladddns	5.105.0-1	extra		892.9 kB
kioLdays	5.105.0-1	extra		1.3 MB
knotkeys	5.27.4-1	extra		4.2 MB
klin	5.105.0-1	extra		18.9 MB
kiconthemes	5.105.0-1	extra		1.1 MB
kidletime	5.105.0-1	extra		363.5 kB
kimageannotator	0.6.1-1	extra		1.6 MB
kimageformats	5.105.0-1	extra		716.4 kB
kinfocenter	5.27.4-1	extra		2.5 MB
kinit	5.105.0-1	extra		500.0 kB
kio	5.105.0-1	extra		30.0 MB
kio-extras	22.12.3-1	extra		4.5 MB
kio-fuse	5.0.1-1	extra		195.4 kB
kirigami2	5.105.0-1	extra		2.1 MB
kitemmodels	5.105.0-1	extra		1.1 MB
kitemviews	5.105.0-1	extra		935.0 kB
kio-widgets	5.105.0-1	extra		895.2 kB

Last Three month history report

```
hello@coder in ~ on v git/abhi.htm [?] via v19.8.1 via v8.2.4 took 15
A pamac list --installed > installed-software.txt
hello@coder in ~ on v git/abhi.htm [?] via v19.8.1 via v8.2.4 took 15
A nano installed-software.txt
hello@coder in ~ on v git/abhi.htm [?] via v19.8.1 via v8.2.4 took 75
A _
```

GiHUB LINK:

<https://github.com/helocoder/CA3-OST>

BIBLIOGRAPHY

- i. google.com
- ii. wikipedia.org
- iii. lifewire.com
- iv. ccleaner.com