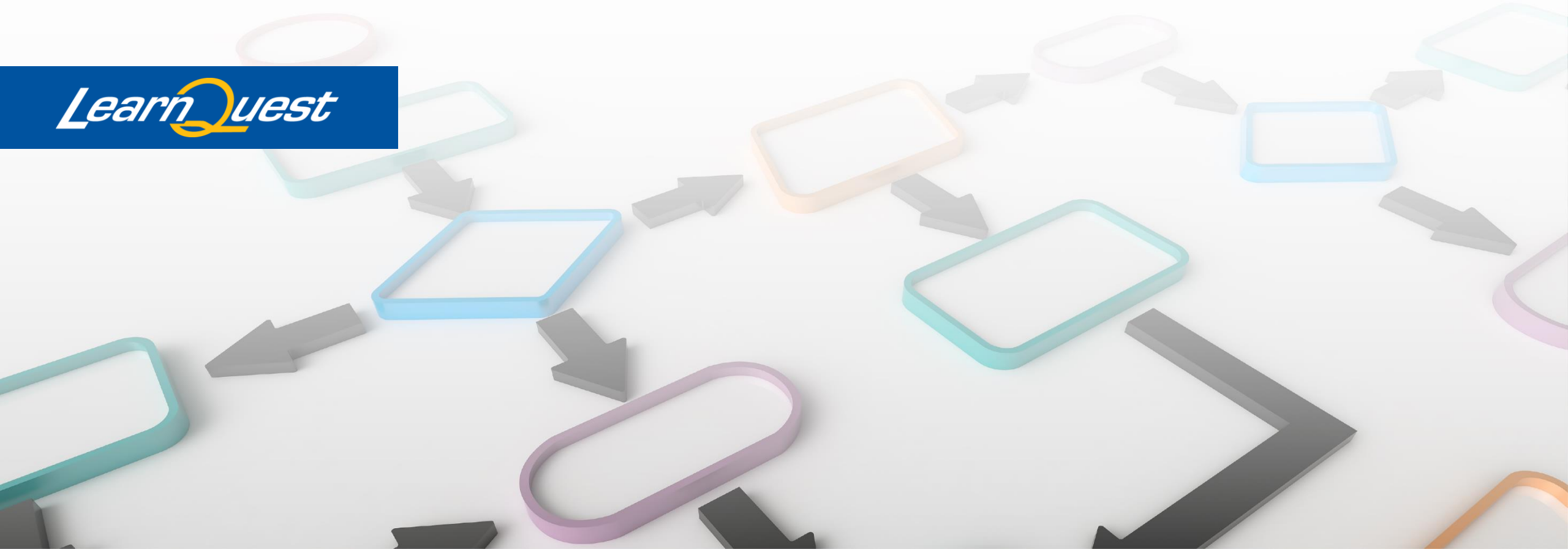
Managing Linux Systems

- 2nd Course in Linux Foundations Specialization



Managing Software Packages

In the fourth module of this course, we learn how to install application software on a Linux system.

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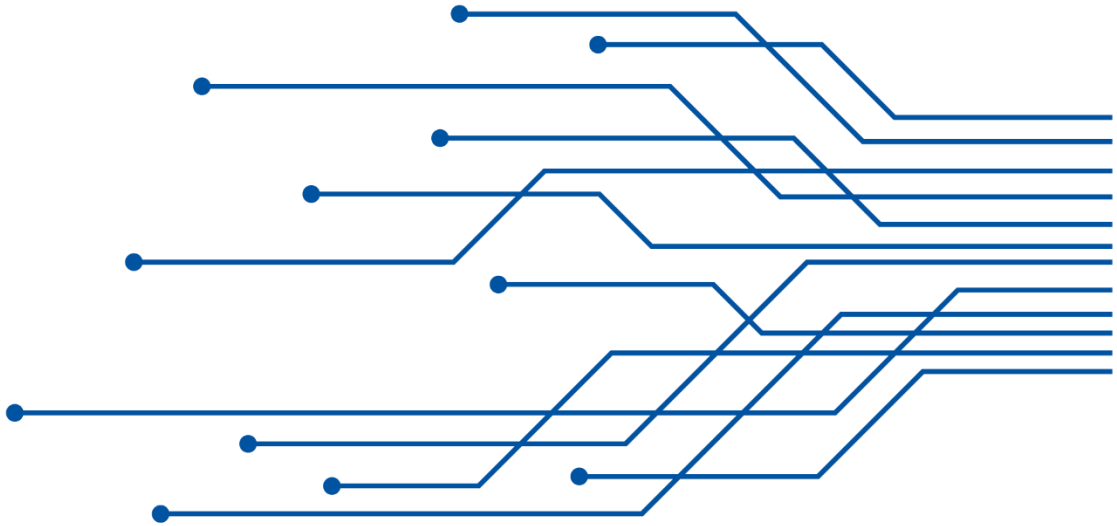


Learning Objectives

Managing Software Packages

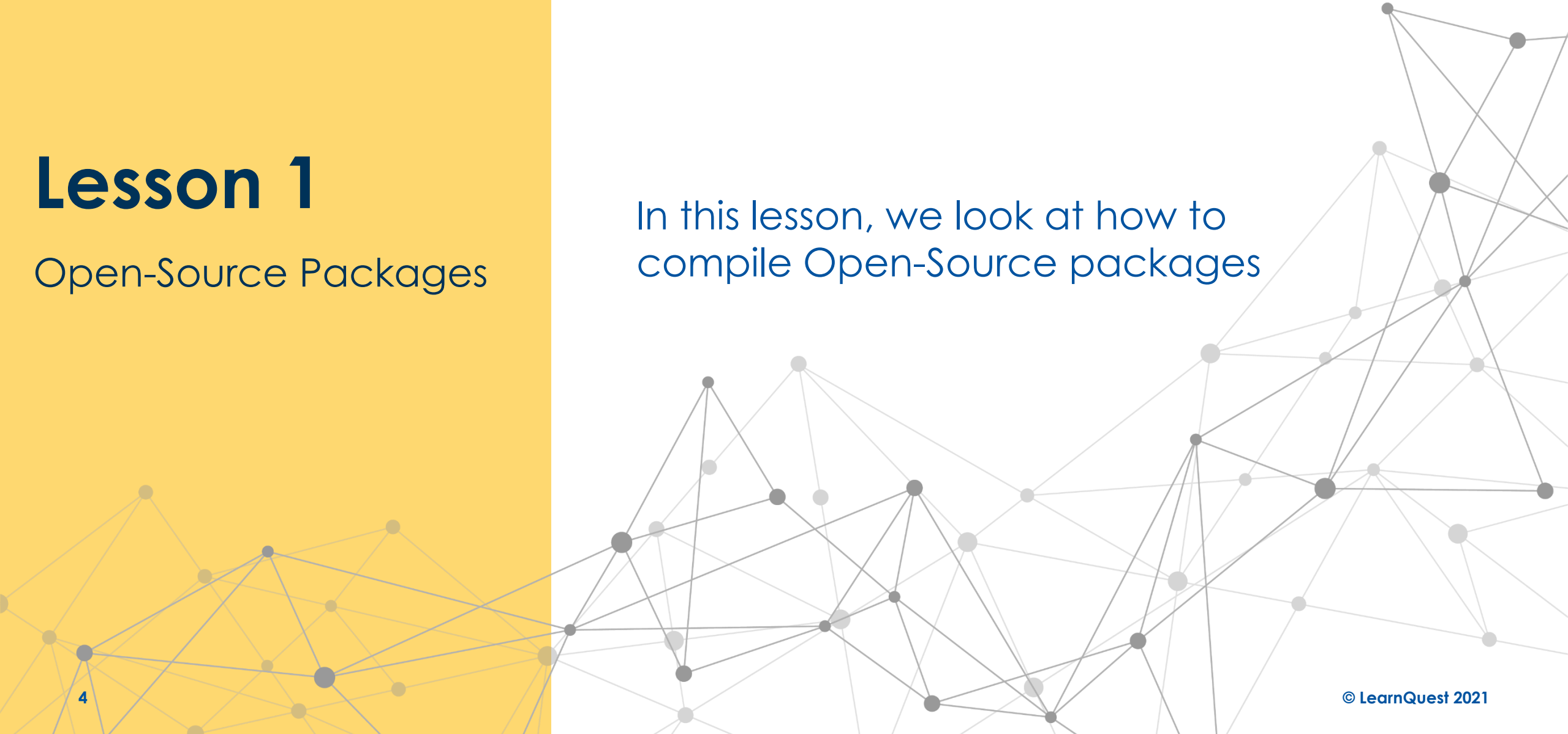
Upon completion of this module, learners will be able to:

- Compile Open-Source Packages
- User Repository Tools
- Install and Update Packages

Lesson 1

Open-Source Packages

In this lesson, we look at how to compile Open-Source packages



Programs for working with Source Code

Programs for downloading source code

- wget
- cURL

Program for bundling source code

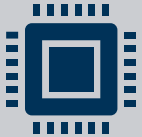
- Tar

Program for compiling source code

- gcc

Wget Command

wget is a program for downloading files from the web. It supports HTTP, HTTPS, and FTP protocols, as well as retrieval through HTTP proxies.



Example Usage:

wget http://www.google.com

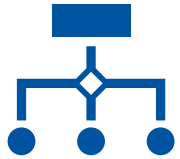
Common Options:

-c: continue downloading partially downloaded file

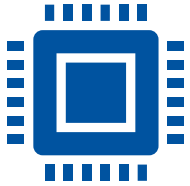
-o: log messages to a log file

-O: concatenate all downloads to this document

Curl Command



Curl is a command line tool to transfer data to or from a server, using any of the supported protocols (HTTP, FTP, IMAP, POP3, SCP, SFTP, SMTP, TFTP, TELNET, LDAP or FILE).



Example Usage:

curl http://www.google.com

Common Options:

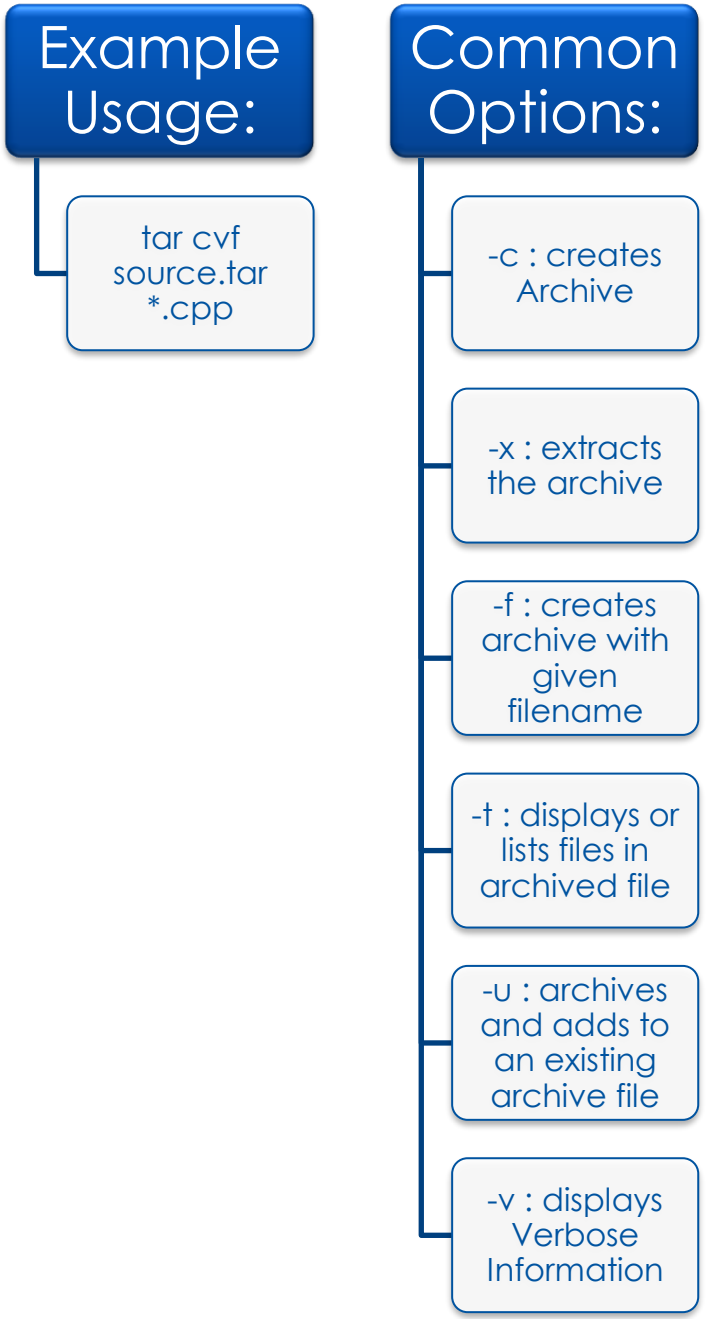
-c: continue download

-o: save to filename

-u: set user for authentication

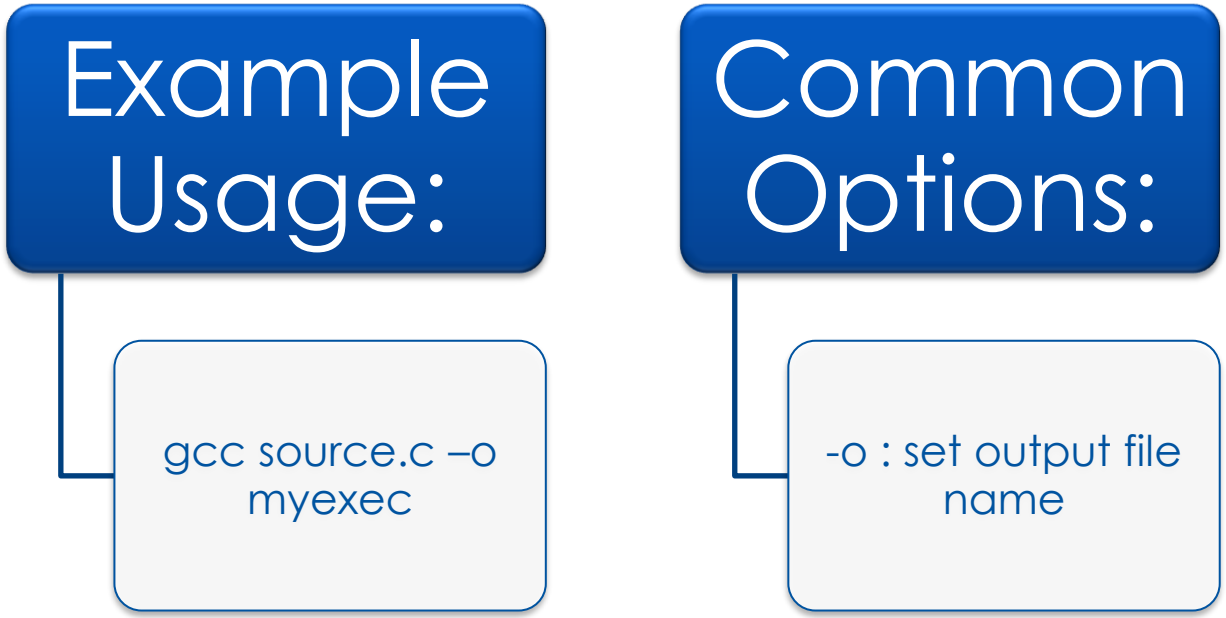
Tar Command

The Linux ‘tar’ stands for tape archive, is used to create Archive and extract the Archive files.



Gcc Command

GCC stands for GNU Compiler Collections which is used to compile mainly C and C++ language.



Lesson 1 Review

You can download files with wget or curl

You can create or read archives with tar

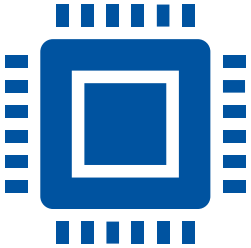
You can compile C or CPP files with gcc

Lesson 2

Software Packages

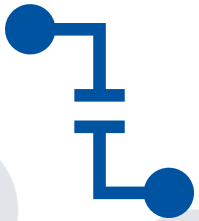
In this lesson, we look at how to install Linux packages

Packages



Linux distributions have created a system for bundling already compiled applications for distribution.

The bundle is called a package, and it consists of all the files required to run a single application.

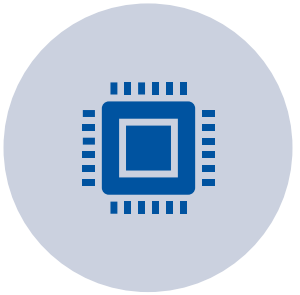


You can install, remove, and manage the entire application as a single package rather than as a group of disjointed files.

Package Management

Tracking software packages on a Linux system is called package management.

The package management database keeps track of not only what packages are installed but also the exact files and file locations required for each application.

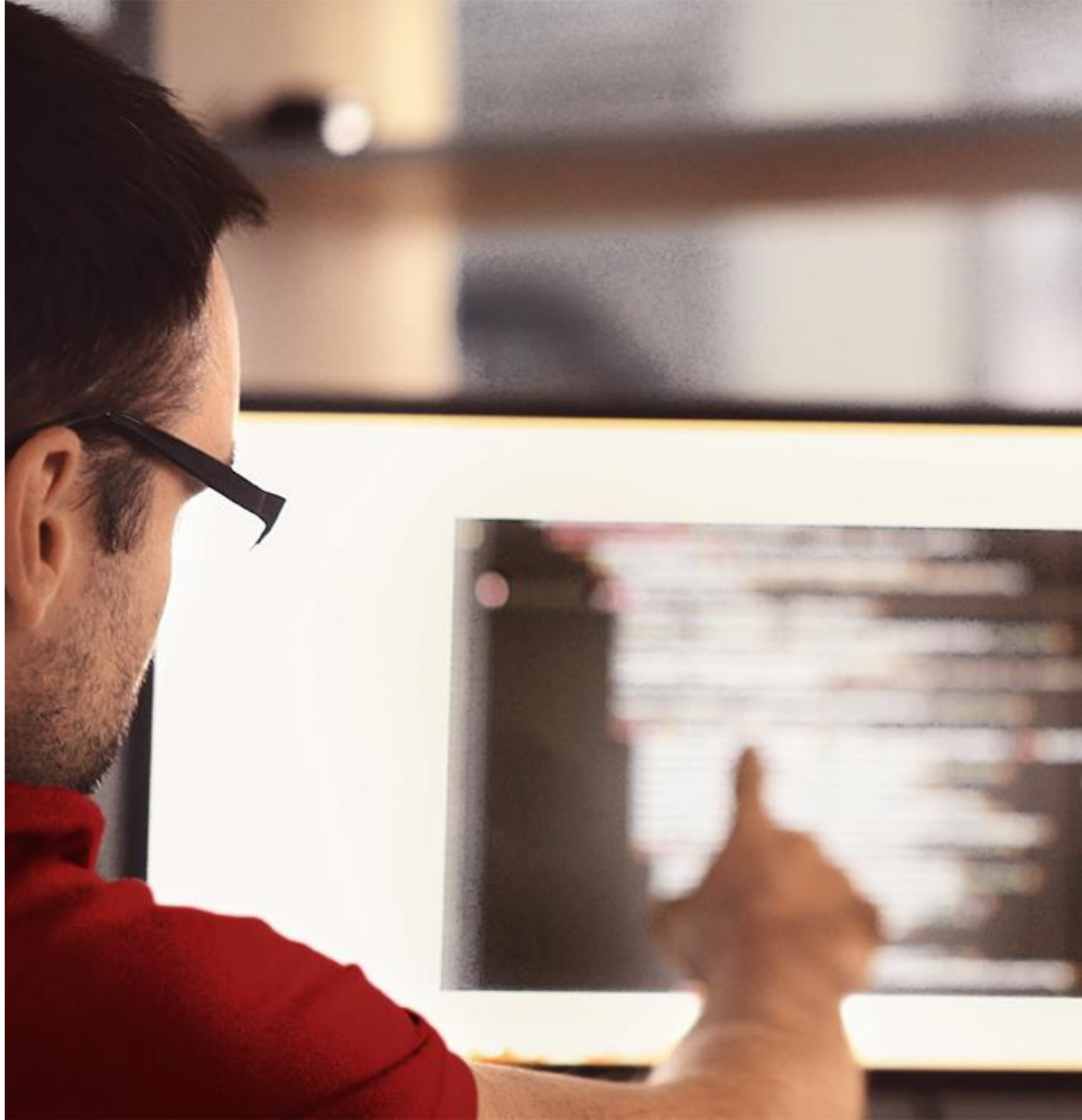


Linux implements package management by using a database to track the installed packages on the system.

Determining what applications are installed on your system is as easy as querying the package management database.

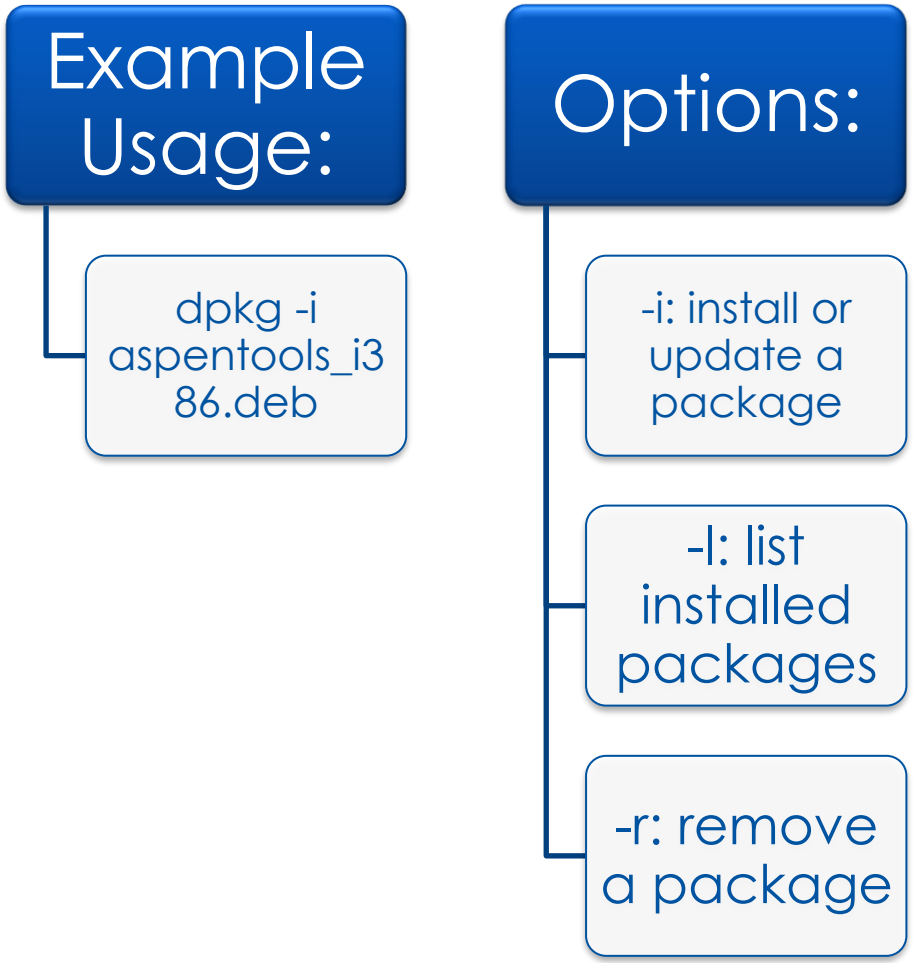
Package Management Systems

- Two main package management systems have risen to the top and have become standards:
  - Debian package management
  - Red Hat package management



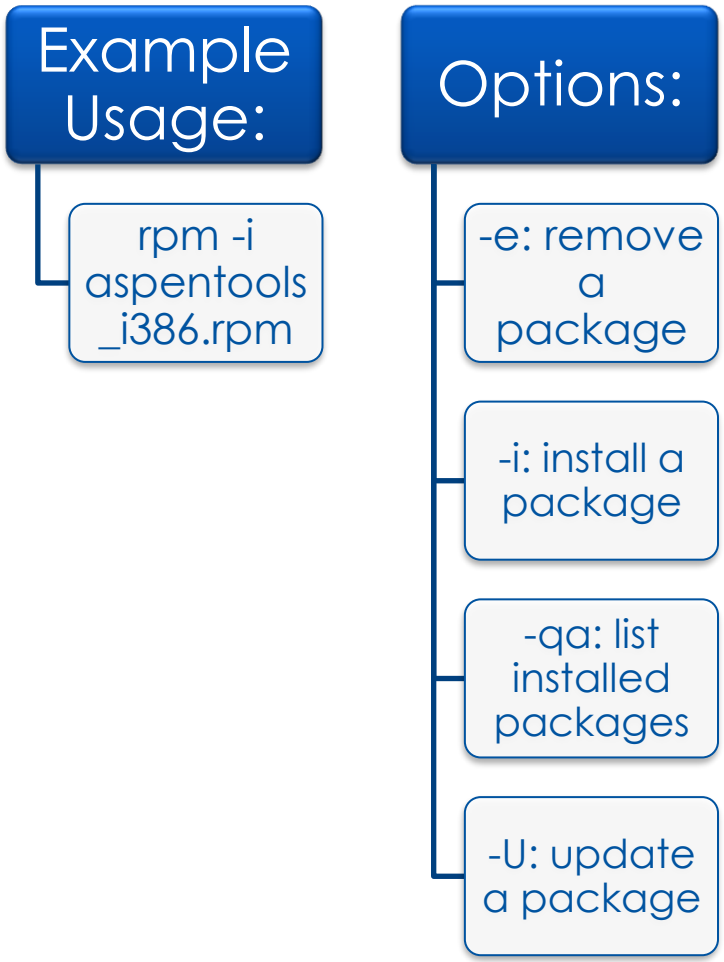
Dpkg Command

- **Dpkg is a package manager for Debian, Ubuntu and many other Linux distro.**
- **It is used to install/manage individual packages.**



Rpm Command

RPM stands for "Redhat Package Manager" and is a command-line package management tool for RHEL/CentOS based operating system.



Lesson 2 Review

A package consists of all the files required to run a single application

The dpkg command is used to work with a package on Debian

The rpm command is used to work with a package on RedHat

Lesson 3

Software Repositories

In this lesson, we look at using Linux software repositories and tools

Package Repositories

Linux distribution has its own central clearinghouse of packages, called a repository.

The repository contains software packages that have been tested and known to install and work correctly in the distribution environment.

By placing all known packages into a single repository, the Linux distribution can create a one-stop shopping environment for installing all applications for the system.

Debian Repository Tools

There are a few useful command options in the apt-cache program for displaying information about packages:	Depends - Displays the dependencies required for the package
	Pkgnames - Displays all the packages installed on the system
	Showpkg - Displays information about the specified package
	Stats - Displays package statistics for the system
	Unmet - Displays any unmet dependencies for installed packages

Apt-get Command

Advanced Package Tool, or APT, is a free-software user interface that works with core libraries to handle the installation and removal of software on Debian, Ubuntu, and related Linux distributions

Example Usage:

- apt-get install wget

Common Commands:

- update : This command is used to synchronize the package index files from sources.
- upgrade : This command is used to install the latest versions of the packages currently installed on the system.
- install : This command is used to install or upgrade packages.

Yum Command

The yum command is the primary tool for getting, installing, deleting, querying, and otherwise managing Red Hat Enterprise Linux RPM software packages from official Red Hat software repositories, as well as other third-party repositories.

Example Usage:

- yum install wget

Common Commands:

- Erase : This command is used to remove a package
- install : This command is used to install a package.
- update: This command is used to install the latest versions of a package.

Lesson 3 Review

A repository holds tested version of packages

Apt-get is used to manage Debian packages through a repository

Yum is used to manage RedHat packages through a repository