6.2.3 Install Packages with Dandified YUM (DNF)

Click one of the buttons to take you to that part of the video.

Install Packages with Dandified YUM (DNF) 0:00-0:09

In this demonstration we are going to practice managing RPM packages with the DNF utility.

Define YUM 0:10-1:40

Understand that for many years, many different distributions used the yum utility to manage RPM packages. We used YUM because it could automatically download the appropriate package that we wanted to install from an online repository.

It would then also check for dependencies for that package and automatically resolve them and then install all the necessary software for you. It made life a lot easier than trying to manage packages with RPM.

However, there were still a few bugs in the YUM utility that occasionally would cause problems. It didn't happen very often, but they were there. As a result, some distributions now use an updated version of YUM called Dandified YUM, which is just DNF.

DNF addresses many of the bugs that were found in the old YUM command. To use DNF, you just type the 'dnf' command at the command prompt. However, be aware that on a distribution that uses DNF, you can still use the YUM command.

When you run YUM on one of these distributions, it actually just runs DNF automatically for you, and it will pop up a little warning informing you that, "Yeah, you ran yum, but we are actually running dnf."

Because DNF is just an enhanced/updated version of YUM, DNF actually uses the exact same syntax that the YUM command did. Before we try using the DNF command, we do need to switch to our root user account, because you have to have root level privileges in order to install and remove software from the system. I will use the 'su -' command to switch to my root user account.

View Available Packages With DNF 1:41-2:08

For example, if I wanted to view a list of all the available packages in my online repositories that I could install with DNF, I use pretty much the same command that I would have used with YUM. I type 'dnf list'. With YUM I would have typed yum list.

Go ahead and hit Enter, and a list of all the various packages that are currently available on my configured online repositories is displayed. These are all the different packages that I could install if I wanted to with the YUM command.

Use DNF to View Information About a Single Package 2:08-2:34

You can also use DNF to view information about one single package. The syntax is 'dnf list', and then the name of the package that you want to gain information about. For example, 'gcc'. GCC is a C compiler.

It allows you to compile source code into an executable that will run on the Linux system. If I hit Enter here, we see the package name of the GCC package that is available along with its version number.

Install a Package With DNF 2:34-5:03

If I wanted to go ahead and install that package, I would type 'dnf install', followed by the name of the package that I want to install. You will notice that this is exactly the same syntax that is used with YUM. We typed 'dnf install gcc'.

At this point, the DNF utility is going to, first of all, make sure that the package is available for install, and it then downloads it. You can see we are downloading the appropriate package right now. It is also going to check and make sure that any dependencies are accounted for as well.

If there are other packages that have to be installed in order for GCC to run, DNF will go ahead and identify them, see if they are installed and then if they're not, automatically install them for us, and then go ahead and install the GCC package.

At this point, the dependency check is complete. The dependencies have been resolved, as indicated right here.

In order to install GCC on this system, several other packages--as you can see--have to be installed as well, including GCC itself.

In order for GCC to run, all of these other packages have to first be installed on this system. In addition to having these packages installed, we also have to upgrade two packages that are already installed on the system. They are there, but they're too old.

We need updated software in order for GCC to run. It tells us down here that we need to install eight packages: seven of which are actual dependent packages, one of which is GCC. We also need to upgrade these two packages.

It's going to take about 36 MB of download to do this. I'll press 'y' and hit Enter, and then all the necessary packages will be downloaded.

This is the beauty of DNF--and YUM for that matter. If I were doing this with RPM, I would first have to manually calculate all the dependencies, and then I'd have to manually locate the appropriate dependent packages and then manually install them. Only after having done all that would I be able to install GCC.

I'll tell you that sometimes the dependency chain gets very, very long. I have had situations where I've tried to install a single package with RPM and ended up needing to install 30 or more dependent packages in order to get just that one package I wanted installed. It is very frustrating. Letting YUM or DNF do it for you is the way to go.

All right, GCC is now installed on the system. Here is a list of all the packages that were installed in order to install GCC, including GCC itself right here. Here are our packages that were upgraded.

Uninstall a Package With DNF 5:04-5:54

Just as you can install a package with DNF, you can also uninstall a package with DNF. You enter 'dnf erase', and then the name of the package that you don't want to have installed on the system anymore--the one you want to uninstall. In this case, let's uninstall 'gcc'. Enter.

Notice when it does this that GCC is going to be removed. In addition, all of the dependent packages that were installed when GCC was installed, that have no other dependencies--meaning no other packages are dependent upon them--will be removed as well.

In this situation, these packages were installed when GCC was installed. No other packages on the system need these packages, so there is no point in leaving them on there. We are going to remove all of them. It's going to remove about 98 MB of files. Let's go ahead and say, "Yes, please uninstall it." and GCC has been removed.

That's it for this demonstration.

Summary 5:54-6:09

In this demo, we talked about installing packages with the DNF utility. We talked about what DNF is. We then used DNF to view a list of available packages. We used DNF to view information about a single package. We installed a package with DNF and then we uninstalled a package with DNF.
