RHEL7: How to get started with package groups.

Presentation

The package groups are a well-known feature of the **yum** command to group multiple packages under a single name.

Even though **yum** will be replaced with **dnf** in future releases of **RHEL**, the syntax and features will stay the same (at least this is the case in **Fedora 22** where you can replace **yum** with **dnf** without any problem).

Three kinds of package groups exist:

- **environment** package groups describe a **type of global configuration** containing other package groups: Minimal Install, Compute Node, Infrastructure Server, GNOME Desktop, etc.
- **top-level** package groups bring a set of package groups belonging to the **same domain**: Security Tools, Development Tools, System Administration Tools, etc.
- **simple** package groups contain packages on a **particular topic**: web-server, network-file-system-client, etc.

Also, inside a package group, there are potentially three different categories:

- **mandatory** package groups/packages are always installed.
- **default** package groups/packages are normally installed except if specified otherwise.
- **optional** package groups/packages are only installed on demand.

Note: While some **yum** subcommands **groupinfo**, **grouplist** and **groupinstall** were written with only one word in **RHEL 6**, **RHEL 7** now accepts one or two words: **yum groupinfo**/**yum group info**, **yum grouplist**/**yum group list**, **yum groupinstall**/**yum group install**, etc.

Package Group Management

To get the list of all the environment and top-level package groups, type:

```
# yum group list ids
Loaded plugins: fastestmirror, langpacks
There is no installed groups file.
Maybe run: yum groups mark convert (see man yum)
Loading mirror speeds from cached hostfile
...
Available environment groups:
 Minimal Install (minimal)
 Compute Node (compute-node-environment)
 Infrastructure Server (infrastructure-server-environment)
 File and Print Server (file-print-server-environment)
 Basic Web Server (web-server-environment)
 Virtualization Host (virtualization-host-environment)
```

```
 Server with GUI (graphical-server-environment)
 GNOME Desktop (gnome-desktop-environment)
 KDE Plasma Workspaces (kde-desktop-environment)
 Development and Creative Workstation (developer-workstation-environment)
Available Groups:
 Compatibility Libraries (compat-libraries)
 Console Internet Tools (console-internet)
 Development Tools (development)
 Graphical Administration Tools (graphical-admin-tools)
 Legacy UNIX Compatibility (legacy-unix)
 Scientific Support (scientific)
 Security Tools (security-tools)
 Smart Card Support (smart-card)
 System Administration Tools (system-admin-tools)
 System Management (system-management)
Done
```

Note1: By specifying the **ids** option, you get the system name of each package group between parenthesis. This name, called the **Group ID**, is easier to use because generally shorter and without any spaces. It is also the name used by **Kickstart** during the installation.
Note2: To get the list of all the package groups, you need to add the **hidden** argument: **# yum group list ids hidden**
Note3: With the **Group ID**, you don't need to use the **group** subcommand anymore, at least for the **install** and **remove** options:

- **yum install @security-tools** = **yum group install security-tools**
- **yum remove @^web-server-environment** = **yum group remove web-server-environment**
- the **@^** prefix is reserved for **environment** groups.

To list the packages in an **environment** group (here "**Minimal Install**"), type:

```
# yum group info "Minimal Install"
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
...
Environment Group: Minimal Install
  Environment-Id: minimal
  Description: Basic functionality.
  Mandatory Groups:
     +core
  Optional Groups:
     +debugging
```

Note1: The **core** package group contains the smallest possible installation, also called **Minimal Install**.
Note2: The **base** package group, with the help of the **core** package group, allows to build a basic installation, also called **Infrastructure Server**.

To get the list of the packages belonging to a package group (here "**Web Server**"), type:

```
# yum group info "Web Server"
Loaded plugins: fastestmirror, langpacks
```

```
Loading mirror speeds from cached hostfile
...
Group: Web Server
  Group-Id: web-server
  Description: Allows the system to act as a web server, and run Perl and Python web applications.
  Mandatory Packages:
     +httpd
  Default Packages:
     +crypto-utils
     +httpd-manual
     +mod_fcgid
     +mod_ssl
  Optional Packages:
     certmonger
     libmemcached
     memcached
     mod_auth_kerb
     mod_auth_mellon
     mod_nss
     mod_revocator
     mod_security
     mod_security_crs
     perl-CGI
     perl-CGI-Session
     python-memcached
     squid
```

Note: The **+** indicates which packages will be installed.

To install a package group (here "**Web Server**"), type:

```
# yum group install "Web Server"
```

Now, if we request some information about the **Web Server** package group, we get:

```
# yum group info "Web Server"
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
...
Group: Web Server
  Group-Id: web-server
  Description: Allows the system to act as a web server, and run Perl and Python web applications.
  Mandatory Packages:
     =httpd
  Default Packages:
     =crypto-utils
     =httpd-manual
     =mod_fcgid
     =mod_ssl
  Optional Packages:
     certmonger
```

```
   libmemcached
   memcached
   mod_auth_kerb
   mod_auth_mellon
   mod_nss
   mod_revocator
   mod_security
   mod_security_crs
   perl-CGI
   perl-CGI-Session
   python-memcached
   squid
```

Note: The **=** indicates installed packages as a part of the package group.

To install all the packages belonging to a package group (here **“Web Server”**), type:

```
# yum --setopt=group_package_types=mandatory,default,optional groupinstall "Web Server"
```

Source: RHEL 7 System Administrator’s guide.