Linux Application Packages
Searching for and Using the Latest Versions

Help document for BCCS355 Capstone Project

Typical AWS cloud projects require a web front-end and a decoupled data tier. **But** for BCCS355 Cloud Capstone Project, in the lab's **as-found** state, the **database** has not yet been decoupled. It is actually installed on the same instance as the web front-end!
Added challenge: In fact **you need to set up this as-found state** for the project. After that you move onto the rest of the project.

Below I show some basic steps on how to use yum commands to install web, php and database application packages - similar to the project's "as-found" state. **However** over time these instructions will obviously need updating. Names and versions of the application packages that are available in yum will change, depending what distro and version of Linux that you are on.

This means you will need to learn how to search to find updated packages. You can use "yum list" with wildcards to search, or you may need to search for technical support articles online to find suitable updates.

The yum install commands below worked to set up "as-found" state as of June 2023. If they no longer work for you, you will need to research how to update the yum install commands to find the latest app packages. This is common for many courses so *we hope you are getting somewhat familiar with researching solution updates.*

Here are two examples of using yum *to search for an updated package:*
```
sudo yum list php*mysql*
sudo yum list *mariadb*server*
```

Setup of Web PHP and Mysql

Note: This is only the initial setup. You will need to do more than this to achieve the as-found state of BCCS355 Capstone Project.


```
sudo yum update -y && sudo yum upgrade -y && sudo yum install -y httpd
```

```
Installed:
  apr-1.7.2-2.amzn2023.0.2.x86_64
  apr-util-1.6.3-1.amzn2023.0.1.x86_64
  apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64
  generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
  httpd-2.4.56-1.amzn2023.x86_64
  httpd-core-2.4.56-1.amzn2023.x86_64
  httpd-filesystem-2.4.56-1.amzn2023.noarch
  httpd-tools-2.4.56-1.amzn2023.x86_64
  libbrotli-1.0.9-4.amzn2023.0.2.x86_64
  mailcap-2.1.49-3.amzn2023.0.3.noarch
  mod_http2-2.0.11-2.amzn2023.x86_64
  mod_lua-2.4.56-1.amzn2023.x86_64

Complete!
[ec2-user@ip-172-31-86-244 ~]$
```

sudo yum install -y php8.1.x86_64

```
Installed:
  libxslt-1.1.34-5.amzn2023.0.2.x86_64
  nginx-filesystem-1:1.22.1-1.amzn2023.0.3.noarch
  php8.1-8.1.16-1.amzn2023.0.1.x86_64
  php8.1-cli-8.1.16-1.amzn2023.0.1.x86_64
  php8.1-common-8.1.16-1.amzn2023.0.1.x86_64
  php8.1-fpm-8.1.16-1.amzn2023.0.1.x86_64
  php8.1-mbstring-8.1.16-1.amzn2023.0.1.x86_64
  php8.1-opcache-8.1.16-1.amzn2023.0.1.x86_64
  php8.1-pdo-8.1.16-1.amzn2023.0.1.x86_64
  php8.1-xml-8.1.16-1.amzn2023.0.1.x86_64

Complete!
[ec2-user@ip-172-31-86-244 ~]$
```

sudo yum install -y php8.1-mysqlnd.x86_64

```
Installed:
  php8.1-mysqlnd-8.1.16-1.amzn2023.0.1.x86_64

Complete!
[ec2-user@ip-172-31-86-244 ~]$
```

sudo yum install -y mariadb105-server.x86_64

```
[ec2-user@ip-172-31-32-250 ~]$ sudo yum install -y mariadb105-server.x86_64
Last metadata expiration check: 11:43:57 ago on Thu Aug 31 22:23:46 2023.
Dependencies resolved.
================================================================================
 Package              Arch    Version                    Repository      Size
================================================================================
Installing:
 mariadb105-server    x86_64  3:10.5.18-1.amzn2023.0.1   amazonlinux   10 M
Installing dependencies:
 mariadb-connector-c  x86_64  3.1.13-1.amzn2023.0.3      amazonlinux  196 k
 mariadb-connector-c-config
                      noarch  3.1.13-1.amzn2023.0.3      amazonlinux  9.2 k
 mariadb105           x86_64  3:10.5.18-1.amzn2023.0.1   amazonlinux  1.6 M
 mariadb105-common    x86_64  3:10.5.18-1.amzn2023.0.1   amazonlinux   31 k
```

```
perl-DBD-MariaDB-1.22-1.amzn2023.0.4.x86_64
perl-DBI-1.643-7.amzn2023.0.3.x86_64
perl-Data-Dumper-2.174-460.amzn2023.0.2.x86_64
perl-File-Copy-2.34-477.amzn2023.0.5.noarch
perl-FileHandle-2.03-477.amzn2023.0.5.noarch
perl-Math-BigInt-1:1.9998.18-458.amzn2023.0.2.noarch
perl-Math-Complex-1.59-477.amzn2023.0.5.noarch
perl-Sys-Hostname-1.23-477.amzn2023.0.5.x86_64
perl-base-2.27-477.amzn2023.0.5.noarch

Complete!
[ec2-user@ip-172-31-32-250 ~]$ 
```

Verifying installed php version

```
php --version
```

```
[ec2-user@ip-172-31-86-244 ~]$ php --version
PHP 8.1.16 (cli) (built: Feb 14 2023 18:59:41) (NTS gcc x86_64)
Copyright (c) The PHP Group
Zend Engine v4.1.16, Copyright (c) Zend Technologies
    with Zend OPcache v8.1.16, Copyright (c), by Zend Technologies
[ec2-user@ip-172-31-86-244 ~]$
```

Starting Services

```
sudo systemctl enable httpd.service
sudo systemctl start httpd.service
```