

Experiment 2 - Creating Amazon EC2 Instances - Creating a LAMP Instance in the AWS CLI

AIM: To create a LAMP instance in the AWS CLI.

PROCEDURE:

1. Firstly, type `sudo su` to become the root user.
2. To update all the packages in your instance type “`yum update -y`”.

```
aws
Services
Search for services, features, blogs, docs, and more [Alt+S]
Mumbai KUNDETI NAGA ARAVIND
Resource Groups & Tag Editor

_ _ _ _ _
_ _ _ _ _ Amazon Linux 2 AMI
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https://aws.amazon.com/amazon-linux-2/
4 package(s) needed for security, out of 11 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-41-125 ~]$ sudo su
[root@ip-172-31-41-125 ec2-user]# yum update -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
--> Package amazon-ssm-agent.x86_64 0:3.1.1575.0-1.amzn2 will be updated
--> Package amazon-ssm-agent.x86_64 0:3.1.1732.0-1.amzn2 will be an update
--> Package chrony.x86_64 0:4.0-3.amzn2.0.2 will be updated
--> Package chrony.x86_64 0:4.2-5.amzn2.0.2 will be an update
--> Package dhclient.x86_64 12:4.2.5-79.amzn2.1.1 will be updated
--> Package dhclient.x86_64 12:4.2.5-79.amzn2.1.1 will be an update
--> Package dhcp-common.x86_64 12:4.2.5-77.amzn2.1.6 will be updated
--> Package dhcp-common.x86_64 12:4.2.5-79.amzn2.1.1 will be an update
--> Package dhcp-libs.x86_64 12:4.2.5-77.amzn2.1.6 will be updated
--> Package dhcp-libs.x86_64 12:4.2.5-79.amzn2.1.1 will be an update
--> Package ec2-net-utils.noarch 0:1.7.0-1.amzn2 will be updated
--> Package ec2-net-utils.noarch 0:1.7.1-1.amzn2 will be an update
--> Package gnupg2.x86_64 0:2.0.22-5.amzn2.0.4 will be updated
--> Package gnupg2.x86_64 0:2.0.22-5.amzn2.0.5 will be an update
--> Package kernel.x86_64 0:5.10.135-122.509.amzn2 will be installed
```

```
aws
Services
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--> Package kernel.x86_64 0:5.10.135-122.509.amzn2 will be installed
--> Package kernel-tools.x86_64 0:5.10.130-118.517.amzn2 will be updated
--> Package kernel-tools.x86_64 0:5.10.135-122.509.amzn2 will be an update
--> Package microcode_ctl.x86_64 2:2.1-47.amzn2.0.12 will be updated
--> Package microcode_ctl.x86_64 2:2.1-47.amzn2.0.13 will be an update
--> Package tzdata.noarch 0:2022a-1.amzn2 will be updated
--> Package tzdata.noarch 0:2022c-1.amzn2 will be an update
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package Arch Version Repository Size
=====
Installing:
kernel x86_64 5.10.135-122.509.amzn2 amzn2extra-kernel-5.10 32 M
Updating:
amazon-ssm-agent x86_64 3.1.1732.0-1.amzn2 amzn2-core 24 M
chrony x86_64 4.2-5.amzn2.0.2 amzn2-core 302 k
dhclient x86_64 12:4.2.5-79.amzn2.1.1 amzn2-core 287 k
dhcp-common x86_64 12:4.2.5-79.amzn2.1.1 amzn2-core 177 k
dhcp-libs x86_64 12:4.2.5-79.amzn2.1.1 amzn2-core 132 k
ec2-net-utils noarch 1.7.1-1.amzn2 amzn2-core 21 k
gnupg2 x86_64 2.0.22-5.amzn2.0.5 amzn2-core 1.5 M
kernel-tools x86_64 5.10.135-122.509.amzn2 amzn2extra-kernel-5.10 176 k
microcode_ctl x86_64 2:2.1-47.amzn2.0.13 amzn2-core 299 k
tzdata noarch 2022c-1.amzn2 amzn2-core 481 k
```

KUNDETI NAGA ARAVIND
RA2011028010067

Transaction Summary

Install 1 Package
Upgrade 10 Packages

Total download size: 59 M


Downloading packages:

Delta RPMs disabled because /usr/bin/applydeltarpm not installed.

(1/11): chrony-4.2-5.amzn2.0.2.x86_64.rpm	302 kB	00:00:00
(2/11): dhclient-4.2.5-79.amzn2.1.1.x86_64.rpm	287 kB	00:00:00
(3/11): dhcp-common-4.2.5-79.amzn2.1.1.x86_64.rpm	177 kB	00:00:00
(4/11): dhcp-libs-4.2.5-79.amzn2.1.1.x86_64.rpm	132 kB	00:00:00
(5/11): ec2-net-utils-1.7.1-1.amzn2.noarch.rpm	21 kB	00:00:00
(6/11): gnupg2-2.0.22-5.amzn2.0.5.x86_64.rpm	1.5 MB	00:00:00
(7/11): microcode_ctl-2.1-47.amzn2.0.13.x86_64.rpm	299 kB	00:00:00
(8/11): tzdata-2022c-1.amzn2.noarch.rpm	481 kB	00:00:00
(9/11): kernel-tools-5.10.135-122.509.amzn2.x86_64.rpm	176 kB	00:00:00
(10/11): amazon-ssm-agent-3.1.1732.0-1.amzn2.x86_64.rpm	24 MB	00:00:00
(11/11): kernel-5.10.135-122.509.amzn2.x86_64.rpm	32 MB	00:00:00

Total 56 MB/s | 59 MB 00:00:01

  Services [Alt+S]

 Resource Groups & Tag Editor

Verifying	: ec2-net-utils-1.7.1-1.amzn2.noarch	5/21
Verifying	: 12:dhcp-common-4.2.5-79.amzn2.1.1.x86_64	6/21
Verifying	: kernel-5.10.135-122.509.amzn2.x86_64	7/21
Verifying	: amazon-ssm-agent-3.1.1732.0-1.amzn2.x86_64	8/21
Verifying	: kernel-tools-5.10.135-122.509.amzn2.x86_64	9/21
Verifying	: tzdata-2022c-1.amzn2.noarch	10/21
Verifying	: chrony-4.2-5.amzn2.0.2.x86_64	11/21
Verifying	: gnupg2-2.0.22-5.amzn2.0.4.x86_64	12/21
Verifying	: 12:dhcp-libs-4.2.5-77.amzn2.1.6.x86_64	13/21
Verifying	: 12:dhclient-4.2.5-77.amzn2.1.6.x86_64	14/21
Verifying	: kernel-tools-5.10.130-118.517.amzn2.x86_64	15/21
Verifying	: 12:dhcp-common-4.2.5-77.amzn2.1.6.x86_64	16/21
Verifying	: tzdata-2022a-1.amzn2.noarch	17/21
Verifying	: chrony-4.0-3.amzn2.0.2.x86_64	18/21
Verifying	: 2:microcode_ctl-2.1-47.amzn2.0.12.x86_64	19/21
Verifying	: ec2-net-utils-1.7.0-1.amzn2.noarch	20/21
Verifying	: amazon-ssm-agent-3.1.1575.0-1.amzn2.x86_64	21/21

Installed:
kernel.x86_64 0:5.10.135-122.509.amzn2

Updated:

amazon-ssm-agent.x86_64 0:3.1.1732.0-1.amzn2	chrony.x86_64 0:4.2-5.amzn2.0.2	dhclient.x86_64 12:4.2.5-79.amzn2.1.1	dhcp-common.x86_64 12:4.2.5-79.amzn2.1.1
dhcp-libs.x86_64 12:4.2.5-79.amzn2.1.1	ec2-net-utils.noarch 0:1.7.1-1.amzn2	gnupg2.x86_64 0:2.0.22-5.amzn2.0.5	kernel-tools.x86_64 0:5.10.135-122.509.amzn2
microcode_ctl.x86_64 2:2.1-47.amzn2.0.13	tzdata.noarch 0:2022c-1.amzn2		

Complete!

3. To install Apache server in linux, type “yum install httpd”.

```
aws Services Q Search for services, features, blogs, docs, and more [Alt+S] Mumbai KUNDETI NAGA ARAVIND
Resource Groups & Tag Editor
[root@ip-172-31-41-125 ec2-user]# yum install httpd
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core | 3.7 kB 00:00:00
Resolving Dependencies
--> Running transaction check
--> Package httpd.x86_64 0:2.4.54-1.amzn2 will be installed
--> Processing Dependency: httpd-tools = 2.4.54-1.amzn2 for package: httpd-2.4.54-1.amzn2.x86_64
--> Processing Dependency: httpd filesystem = 2.4.54-1.amzn2 for package: httpd-2.4.54-1.amzn2.x86_64
--> Processing Dependency: system-logos-httpd for package: httpd-2.4.54-1.amzn2.x86_64
--> Processing Dependency: mod_http2 for package: httpd-2.4.54-1.amzn2.x86_64
--> Processing Dependency: httpd filesystem for package: httpd-2.4.54-1.amzn2.x86_64
--> Processing Dependency: /etc/mime.types for package: httpd-2.4.54-1.amzn2.x86_64
--> Processing Dependency: libaprutil-1.so.0()(64bit) for package: httpd-2.4.54-1.amzn2.x86_64
--> Processing Dependency: libapr-1.so.0()(64bit) for package: httpd-2.4.54-1.amzn2.x86_64
--> Running transaction check
--> Package apr.x86_64 0:1.7.0-9.amzn2 will be installed
--> Package apr-util.x86_64 0:1.6.1-5.amzn2.0.2 will be installed
--> Processing Dependency: apr-util-bdb(x86-64) = 1.6.1-5.amzn2.0.2 for package: apr-util-1.6.1-5.amzn2.0.2.x86_64
--> Package generic-logos-httpd.noarch 0:18.0.0-4.amzn2 will be installed
--> Package httpd filesystem.noarch 0:2.4.54-1.amzn2 will be installed
--> Package httpd-tools.x86_64 0:2.4.54-1.amzn2 will be installed
--> Package mailcap.noarch 0:2.1.41-2.amzn2 will be installed
--> Package mod_http2.x86_64 0:1.15.19-1.amzn2.0.1 will be installed
--> Running transaction check
--> Package apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2 will be installed
--> Finished Dependency Resolution
```

4. To install mysql or mariadb type “yum install mariadb mariadb-server”.

```
aws Services Q Search for services, features, blogs, docs, and more [Alt+S] Mumbai KUNDETI NAGA ARAVIND
Resource Groups & Tag Editor
[root@ip-172-31-41-125 ec2-user]# yum install mariadb mariadb-server
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
--> Package mariadb.x86_64 1:5.5.68-1.amzn2 will be installed
--> Package mariadb-server.x86_64 1:5.5.68-1.amzn2 will be installed
--> Processing Dependency: perl-DBI for package: 1:mariadb-server-5.5.68-1.amzn2.x86_64
--> Processing Dependency: perl-DBD-MySQL for package: 1:mariadb-server-5.5.68-1.amzn2.x86_64
--> Processing Dependency: perl(Data::Dumper) for package: 1:mariadb-server-5.5.68-1.amzn2.x86_64
--> Processing Dependency: perl(DBI) for package: 1:mariadb-server-5.5.68-1.amzn2.x86_64
--> Running transaction check
--> Package perl-DBD-MySQL.x86_64 0:4.023-6.amzn2 will be installed
--> Package perl-DBI.x86_64 0:1.627-4.amzn2.0.2 will be installed
--> Processing Dependency: perl(RPC::PlServer) >= 0.2001 for package: perl-DBI-1.627-4.amzn2.0.2.x86_64
--> Processing Dependency: perl(RPC::PlClient) >= 0.2000 for package: perl-DBI-1.627-4.amzn2.0.2.x86_64
--> Package perl-Data-Dumper.x86_64 0:2.145-3.amzn2.0.2 will be installed
--> Running transaction check
--> Package perl-PlRPC.noarch 0:0.2020-14.amzn2 will be installed
--> Processing Dependency: perl(Net::Daemon) >= 0.13 for package: perl-PlRPC-0.2020-14.amzn2.noarch
--> Processing Dependency: perl(Net::Daemon::Test) for package: perl-PlRPC-0.2020-14.amzn2.noarch
--> Processing Dependency: perl(Net::Daemon::Log) for package: perl-PlRPC-0.2020-14.amzn2.noarch
--> Processing Dependency: perl(Compress::Zlib) for package: perl-PlRPC-0.2020-14.amzn2.noarch
--> Running transaction check
--> Package perl-IO-Compress.noarch 0:2.061-2.amzn2 will be installed
--> Processing Dependency: perl(Compress::Raw::Zlib) >= 2.061 for package: perl-IO-Compress-2.061-2.amzn2.noarch
--> Processing Dependency: perl(Compress::Raw::Bzip2) >= 2.061 for package: perl-IO-Compress-2.061-2.amzn2.noarch
--> Package perl-Net-Daemon.noarch 0:0.48-5.amzn2 will be installed
--> Running transaction check

i-094a1ab71a9687525 (aravindkundeti)
PublicIPs: 3.110.33.53 PrivateIPs: 172.31.41.125
```

5. To install php, type “yum install php php-mysql”.

```
aws Services Search for services, features, blogs, docs, and more [Alt+S] Mumbai KUNDETI NAGA ARAVIND
Resource Groups & Tag Editor
[root@ip-172-31-41-125 ec2-user]# yum install php php-mysql
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Package php-mysql is obsoleted by php-mysqldb, trying to install php-mysqldb-5.4.16-46.amzn2.0.2.x86_64 instead
Resolving Dependencies
--> Running transaction check
--> Package php.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
--> Processing Dependency: php-cli(x86-64) = 5.4.16-46.amzn2.0.2 for package: php-5.4.16-46.amzn2.0.2.x86_64
--> Processing Dependency: php-common(x86-64) = 5.4.16-46.amzn2.0.2 for package: php-5.4.16-46.amzn2.0.2.x86_64
--> Package php-mysqldb.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
--> Processing Dependency: php-pdo(x86-64) = 5.4.16-46.amzn2.0.2 for package: php-mysqldb-5.4.16-46.amzn2.0.2.x86_64
--> Running transaction check
--> Package php-cli.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
--> Package php-common.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
--> Processing Dependency: libzip.so.2() (64bit) for package: php-common-5.4.16-46.amzn2.0.2.x86_64
--> Package php-pdo.x86_64 0:5.4.16-46.amzn2.0.2 will be installed
--> Running transaction check
--> Package libzip010-compat.x86_64 0:0.10.1-9.amzn2.0.5 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package Arch Version Repository Size
=====
Installing:
php x86_64 5.4.16-46.amzn2.0.2 amzn2-core 1.4 M
php-mysqldb x86_64 5.4.16-46.amzn2.0.2 amzn2-core 172 k
Installing for dependencies:
```

6. Type “yum search php” to see all the packages installed in the server.

```
aws Services Search for services, features, blogs, docs, and more [Alt+S] Mumbai KUNDETI NAGA ARAVIND
Resource Groups & Tag Editor
[root@ip-172-31-41-125 ec2-user]# yum search php
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
===== N/S matched: php =====
graphviz-php.x86_64 : PHP extension for graphviz
php.x86_64 : PHP scripting language for creating dynamic web sites
php-bcmath.x86_64 : A module for PHP applications for using the bcmath library
php-cli.x86_64 : Command-line interface for PHP
php-common.x86_64 : Common files for PHP
php-dba.x86_64 : A database abstraction layer module for PHP applications
php-devel.x86_64 : Files needed for building PHP extensions
php-embedded.x86_64 : PHP library for embedding in applications
php-enchanted.x86_64 : Enchant spelling extension for PHP applications
php-fpm.x86_64 : PHP FastCGI Process Manager
php-gd.x86_64 : A module for PHP applications for using the gd graphics library
php-intl.x86_64 : Internationalization extension for PHP applications
php-ldap.x86_64 : A module for PHP applications that use LDAP
php-mbstring.x86_64 : A module for PHP applications which need multi-byte string handling
php-mysql.x86_64 : A module for PHP applications that use MySQL databases
php-mysqldb.x86_64 : A module for PHP applications that use MySQL databases
php-odbc.x86_64 : A module for PHP applications that use ODBC databases
php-pdo.x86_64 : A database access abstraction module for PHP applications
php-pear.noarch : PHP Extension and Application Repository framework
php-pgsql.x86_64 : A PostgreSQL database module for PHP
php-process.x86_64 : Modules for PHP script using system process interfaces
php-pspell.x86_64 : A module for PHP applications for using pspell interfaces
php-recode.x86_64 : A module for PHP applications for using the recode library
php-snmp.x86_64 : A module for PHP applications that query SNMP-managed devices
php-soap.x86_64 : A module for PHP applications that use the SOAP protocol
```

7. Enabling the mariadb server.


```
[root@ip-172-31-41-125 ec2-user]# systemctl start mariadb
[root@ip-172-31-41-125 ec2-user]# systemctl enable mariadb
Created symlink from /etc/systemd/system/multi-user.target.wants/mariadb.service to /usr/lib/systemd/system/mariadb.service.
[root@ip-172-31-41-125 ec2-user]#
[root@ip-172-31-41-125 ec2-user]#
```


8. After enabling httpd (apache server) , go to the directory where cd /var/www/html/
9. Go to vim and type "<?php phpinfo(); ?>".

```
[root@ip-172-31-41-125 ec2-user]# cd /var/www/html/
[root@ip-172-31-41-125 html]# ls
[root@ip-172-31-41-125 html]# pwd
/var/www/html
[root@ip-172-31-41-125 html]#
[root@ip-172-31-41-125 html]#
[root@ip-172-31-41-125 html]#
[root@ip-172-31-41-125 html]#
[root@ip-172-31-41-125 html]#
[root@ip-172-31-41-125 html]#
[root@ip-172-31-41-125 html]#
[root@ip-172-31-41-125 html]# vim index.php
```

Copy the public ip address or public domain name from the console and paste in the web browser.

OUTPUT:

PHP Version 5.4.16	
	
System	Linux ip-172-31-32-239.ap-south-1.compute.internal 5.10.130-118.517.amzn2.x86_64 #1 SMP Wed Jul 13 16:51:52 UTC 2022 x86_64
Build Date	Oct 31 2019 18:35:17
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc
Loaded Configuration File	/etc/php.ini
Scan this dir for additional .ini files	/etc/php.d
Additional .ini files parsed	/etc/php.d/curl.ini, /etc/php.d/fileinfo.ini, /etc/php.d/json.ini, /etc/php.d/mysqld.ini, /etc/php.d/mysqld_mysql.ini, /etc/php.d/mysqld_mysqli.ini, /etc/php.d/pdo.ini, /etc/php.d/pdo_mysqld.ini, /etc/php.d/pdo_sqlite.ini, /etc/php.d/phar.ini, /etc/php.d/sqlite3.ini, /etc/php.d/zip.ini
PHP API	20100412
PHP Extension	20100525
Zend Extension	220100525
Zend Extension Build	API220100525,NTS
PHP Extension Build	API20100525,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	disabled
Zend Memory Manager	enabled
Zend Multibyte	disabled

RESULT:

LAMP instance was successfully created and executed in AWS CLI.