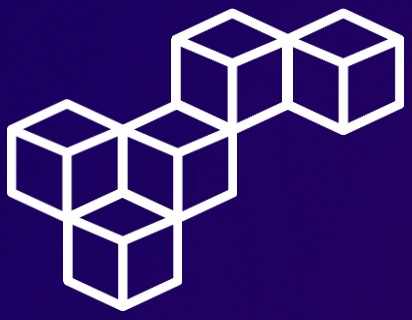
AWS re:Start LAB

Software Management

WEEK 3

aws re/start



Overview

Software management in Linux encompasses critical tasks like updating the system using package managers such as YUM, ensuring software remains current with the latest features and security patches. These tools streamline the process by fetching updates from repositories and applying them across the system automatically, enhancing stability and resilience.

Another vital aspect is the ability to roll back or downgrade packages through package managers like YUM, providing a safety net in case of compatibility issues or unexpected bugs post-update. Additionally, software management includes installing tools like the AWS Command Line Interface (AWS CLI), simplifying cloud resource management by enabling direct interaction with AWS services from the command line, boosting efficiency in cloud environments.

Note: This lab was made using Windows Subsystem for Linux.

Topics covered

- Update the Linux machine using the package manager
- Roll back or downgrade a previously updated package through the package manager
- Install the AWS Command Line Interface (AWS CLI)

Task 1

Use SSH to connect to an Amazon Linux EC2 instance

Initial Preparations

In the AWS Management Console, select the EC2 instance and make note of the **Public IPv4 address**.

Download the **private key file** labsuser.pem. Change to the Downloads directory and modify the permissions on the key to be read-only (r--------).

Connect to the instance using SSH

Establish a connection to the EC2 instance using the ssh command, the key and the instance's public IPv4 address.

```
support@HP-Pavilion-Laptop:~/Downloads$ ssh -i labsuser.pem ec2-user@34.219.59.83
The authenticity of host '34.219.59.83 (34.219.59.83)' can't be established.
ED25519 key fingerprint is SHA256:IMM+wBRVABymrKazfYXGIwerOG+KdJfB6OuxEhss7Ms.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '34.219.59.83' (ED25519) to the list of known hosts.
   ,     #_
   ~\_  ####_        Amazon Linux 2
  ~~  \_#####\
  ~~     \###|       AL2 End of Life is 2025-06-30.
  ~~       \#/ ___
   ~~       V~' '->
    ~~~         /    A newer version of Amazon Linux is available!
      ~~._.   _/
         _/ _/       Amazon Linux 2023, GA and supported until 2028-03-15.
       _/m/'           https://aws.amazon.com/linux/amazon-linux-2023/

[ec2-user@ip-10-0-10-226 ~]$
```

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Task 2

Update your Linux machine

Step 1: Query repositories for available updates

To query repositories for available updates, enter the command sudo yum -y check-update.

```
[ec2-user@ip-10-0-10-226 companyA]$ sudo yum -y check-update
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
[ec2-user@ip-10-0-10-226 companyA]$
```

Step 2: Apply security-related updates

To apply security-related updates, enter the command sudo yum update --security.

```
[ec2-user@ip-10-0-10-226 companyA]$ sudo yum update --security
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
No packages needed for security; 0 packages available
No packages marked for update
[ec2-user@ip-10-0-10-226 companyA]$
```

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Task 2

Update your Linux machine

Step 3: Update packages

To update packages, enter the command sudo yum -y upgrade.

```
[ec2-user@ip-10-0-10-226 companyA]$ sudo yum -y upgrade
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
No packages marked for update
[ec2-user@ip-10-0-10-226 companyA]$
```

Step 4: Install the httpd package

To view the install of httpd and view the history of updates, enter the command sudo yum install httpd –y.

```
[ec2-user@ip-10-0-10-226 companyA]$ sudo yum install httpd -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd

Installed:
  httpd.x86_64 0:2.4.58-1.amzn2

Dependency Installed:
  apr.x86_64 0:1.7.2-1.amzn2                    apr-util.x86_64 0:1.6.3-1.amzn2.0.1          apr-util-bdb.x86_64 0:1.6.3-1.amzn2.0.1
  generic-logos-httpd.noarch 0:18.0.0-4.amzn2   httpd-filesystem.noarch 0:2.4.58-1.amzn2     httpd-tools.x86_64 0:2.4.58-1.amzn2
  mailcap.noarch 0:2.1.41-2.amzn2               mod_http2.x86_64 0:1.15.19-1.amzn2.0.1

Complete!
[ec2-user@ip-10-0-10-226 companyA]$
```

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Task 3

Roll back a package

Step 1: View the history of updates

To view the history of updates, enter the command sudo yum history list.

```
[ec2-user@ip-10-0-10-226 companyA]$ sudo yum history list
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
ID     | Command line             | Date and time    | Action(s)      | Altered
------------------------------------------------------------------------------
     1 | install httpd -y         | 2024-04-10 23:03 | Install        |    9
history list
[ec2-user@ip-10-0-10-226 companyA]$
```

Step 2: View the most recent set of updates

To view the most recent set of updates, enter the command sudo yum history info 1.

```
[ec2-user@ip-10-0-10-226 companyA]$ sudo yum history info 1
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Transaction ID : 1
Begin time     : Wed Apr 10 23:03:03 2024
Begin rpmdb    : 454:f6df14576351a0124a2e0422b738a903339f4a74
End time       :            23:03:04 2024 (1 seconds)
End rpmdb      : 463:b62acf8c3f07944c891676d68b29dd98cd8db1f5
User           : EC2 Default User <ec2-user>
Return-Code    : Success
Command Line   : install httpd -y
Transaction performed with:
    Installed     rpm-4.11.3-48.amzn2.0.3.x86_64 installed
    Installed     yum-3.4.3-158.amzn2.0.7.noarch installed
Packages Altered:
    Dep-Install apr-1.7.2-1.amzn2.x86_64                 @amzn2-core
    Dep-Install apr-util-1.6.3-1.amzn2.0.1.x86_64        @amzn2-core
    Dep-Install apr-util-bdb-1.6.3-1.amzn2.0.1.x86_64    @amzn2-core
    Dep-Install generic-logos-httpd-18.0.0-4.amzn2.noarch @amzn2-core
    Install     httpd-2.4.58-1.amzn2.x86_64              @amzn2-core
    Dep-Install httpd-filesystem-2.4.58-1.amzn2.noarch   @amzn2-core
    Dep-Install httpd-tools-2.4.58-1.amzn2.x86_64        @amzn2-core
    Dep-Install mailcap-2.1.41-2.amzn2.noarch            @amzn2-core
    Dep-Install mod_http2-1.15.19-1.amzn2.0.1.x86_64     @amzn2-core
history info
[ec2-user@ip-10-0-10-226 companyA]$
```

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Task 3

Roll back a package

Step 3: Downgrade a package

To downgrade a package that has been updated, enter the command sudo yum -y history undo 1.

```
[ec2-user@ip-10-0-10-226 companyA]$ sudo yum -y history undo 1
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Undoing transaction 1, from Wed Apr 10 23:03:03 2024
    Dep-Install apr-1.7.2-1.amzn2.x86_64                 @amzn2-core
    Dep-Install apr-util-1.6.3-1.amzn2.0.1.x86_64        @amzn2-core
    Dep-Install apr-util-bdb-1.6.3-1.amzn2.0.1.x86_64    @amzn2-core
    Dep-Install generic-logos-httpd-18.0.0-4.amzn2.noarch @amzn2-core
    Install     httpd-2.4.58-1.amzn2.x86_64              @amzn2-core
    Dep-Install httpd-filesystem-2.4.58-1.amzn2.noarch   @amzn2-core
    Dep-Install httpd-tools-2.4.58-1.amzn2.x86_64        @amzn2-core
    Dep-Install mailcap-2.1.41-2.amzn2.noarch            @amzn2-core
    Dep-Install mod_http2-1.15.19-1.amzn2.0.1.x86_64     @amzn2-core
```

```
================================================================================================================================
 Package                          Arch                 Version                          Repository                       Size
================================================================================================================================
Removing:
 apr                              x86_64               1.7.2-1.amzn2                    @amzn2-core                     275 k
 apr-util                         x86_64               1.6.3-1.amzn2.0.1                @amzn2-core                     206 k
 apr-util-bdb                     x86_64               1.6.3-1.amzn2.0.1                @amzn2-core                      11 k
 generic-logos-httpd              noarch               18.0.0-4.amzn2                   @amzn2-core                      21 k
 httpd                            x86_64               2.4.58-1.amzn2                   @amzn2-core                     4.2 M
 httpd-filesystem                 noarch               2.4.58-1.amzn2                   @amzn2-core                     366
 httpd-tools                      x86_64               2.4.58-1.amzn2                   @amzn2-core                     168 k
 mailcap                          noarch               2.1.41-2.amzn2                   @amzn2-core                      62 k
 mod_http2                        x86_64               1.15.19-1.amzn2.0.1              @amzn2-core                     382 k

Transaction Summary
================================================================================================================================
Remove  9 Packages
```

```
Removed:
  apr.x86_64 0:1.7.2-1.amzn2                    apr-util.x86_64 0:1.6.3-1.amzn2.0.1       apr-util-bdb.x86_64 0:1.6.3-1.amzn2.0.1
  generic-logos-httpd.noarch 0:18.0.0-4.amzn2   httpd.x86_64 0:2.4.58-1.amzn2             httpd-filesystem.noarch 0:2.4.58-1.amzn2
  httpd-tools.x86_64 0:2.4.58-1.amzn2           mailcap.noarch 0:2.1.41-2.amzn2           mod_http2.x86_64 0:1.15.19-1.amzn2.0.1

Complete!
[ec2-user@ip-10-0-10-226 companyA]$
```

Task 4

Install the AWS CLI on Red Hat Linux

Step 1: Verify that Python is installed

To verify that Python and the pip package manager are already installed, enter the commands python3 --version and pip3 --version.

```
[ec2-user@ip-10-0-10-226 companyA]$ python3 --version
Python 3.7.16
[ec2-user@ip-10-0-10-226 companyA]$ pip3 --version
pip 20.2.2 from /usr/lib/python3.7/site-packages/pip (python 3.7)
[ec2-user@ip-10-0-10-226 companyA]$
```

Step 2: Download the installation file

In order to install the AWS CLI, download the installation file using the curl command. Then, unzip the installer.

```
[ec2-user@ip-10-0-10-226 companyA]$ curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 57.5M  100 57.5M    0     0   257M      0 --:--:-- --:--:-- --:--:--  258M
[ec2-user@ip-10-0-10-226 companyA]$ unzip awscliv2.zip
Archive:  awscliv2.zip
   creating: aws/
   creating: aws/dist/
  inflating: aws/install
```

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Task 4

Install the AWS CLI on Red Hat Linux

Step 3: Run the install program

To run the install program, enter the command sudo ./aws/install.

```
[ec2-user@ip-10-0-10-226 companyA]$ sudo ./aws/install
You can now run: /usr/local/bin/aws --version
[ec2-user@ip-10-0-10-226 companyA]$
```

Step 4: Verify the installation

To verify that the AWS CLI is now working, enter the command aws help.

```
[ec2-user@ip-10-0-10-226 companyA]$ aws help
[ec2-user@ip-10-0-10-226 companyA]$
```

```
AWS()                                                                AWS()



NAME
       aws -

DESCRIPTION
       The  AWS  Command  Line  Interface is a unified tool to manage your AWS
       services.

SYNOPSIS
            aws [options] <command> <subcommand> [parameters]

       Use aws command help for information on a  specific  command.  Use  aws
       help  topics  to view a list of available help topics. The synopsis for
       each command shows its parameters and their usage. Optional  parameters
       are shown in square brackets.
```

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Task 5

Configure the AWS CLI to connect to your AWS account

Step 1: Set configuration information

Enter the aws configure command for the AWS CLI and enter the following configuration information.

```
[ec2-user@ip-10-0-10-226 companyA]$ aws configure
AWS Access Key ID [None]:
AWS Secret Access Key [None]:
Default region name [None]: us-west-2
Default output format [None]: json
[ec2-user@ip-10-0-10-226 companyA]$
```

Step 2: Edit the credential file

To open the credential file, enter the command sudo nano ~/.aws/credentials and paste the AWS CLI credentials.

```
 GNU nano 2.9.8                        /home/ec2-user/.aws/credentials

[default]
aws_access_key_id=ASIATCKAMXJERWYB4LHT
aws_secret_access_key=Vd8XJsY0dPnGkzGf+UaIHXDxPCepgZGLJcIkM4DQ
aws_session_token=IQoJb3JpZ2luX2VjEP//////////wEaCXVzLXdlc3QtMiJHMEUCIQDIRF8AaWmGWcj28BEliXreg0bIduvnnT3KtibFLgKpywIgTdgZ2wNps0eM0HwEZnrVLqbJP$

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos  M-U Undo  M-A Mark Text  M-] To Bracket
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell  ^_ Go To Line M-E Redo  M-6 Copy Text  M-W WhereIs Next
```

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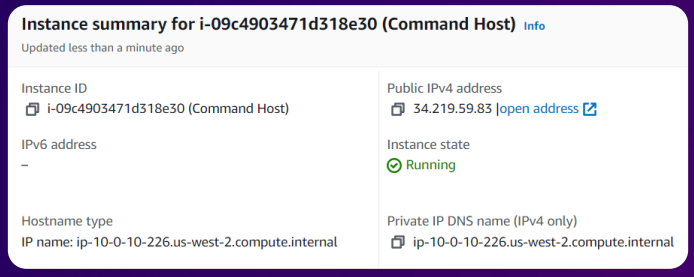
Task 5

Configure the AWS CLI to connect to your AWS account

Step 3: Copy the instance ID

Open the AWS Management Console, and copy the Instance ID for the **Command Host** instance.



Step 4: Describe the instance attributes

Enter the following comand to describe the instance attributes.

```
[ec2-user@ip-10-0-10-226 companyA]$ aws ec2 describe-instance-attribute --instance-id i-09c4903471d318e30 --attribute instanceType
{
    "InstanceId": "i-09c4903471d318e30",
    "InstanceType": {
        "Value": "t3.micro"
    }
}
[ec2-user@ip-10-0-10-226 companyA]$
```

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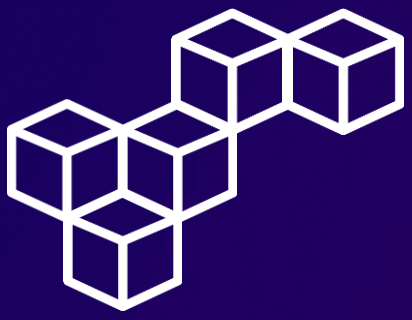

Conclusions

YUM package manager
YUM (Yellowdog Updater Modified) is a powerful package manager for RPM-based Linux distributions, simplifying software installation, updates, and dependency management.

The yum install command
The yum install command is used to install new software packages and dependencies on a Linux system, making it easy to add new functionality or tools.

The yum upgrade command
The yum upgrade command upgrades all installed packages to their latest versions, ensuring system software is up to date with the latest features and security patches.

The yum update command
The yum update command performs a system-wide update, including software packages and dependencies, keeping the entire system current and secure.

The yum history command
The yum history command provides a detailed history of package transactions, allowing users to review and manage past installations, upgrades, and removals, aiding in troubleshooting and system maintenance.

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