Linux Servers

Classroom Assignment 3 – Services and packaging

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Document your commands or take screenshots. Answer questions in english or finnish.

1. Packages

Clean the package cache first.

I cleaned the cache with command **yum clean all. all** parameter removes plugins, dbcache, metadata, headers, packages, expire-cache and rpmdb

```
[admin@localhost ~]$ sudo yum clean all
Loaded plugins: fastestmirror, langpacks
Repodata is over 2 weeks old. Install yum-cron? Or run: yum makecache fast
Cleaning repos: base extras updates
Cleaning up everything
Cleaning up list of fastest mirrors
```

Find out which repository includes the package mod_ssl. What webserver does it need? What other packages it has as dependencies? What is the version and architecture of the package?

The mod_ssl is a module for apache httpd server.

yum list mod_ssl

The architecture is (x86-64)64bits, version: **2.4.6-40**-el7.centos.4

```
[admin@localhost ~]$ sudo yum list mod_ssl
Loaded plugins: fastestmirror, langpacks
base                                                                    | 3.6 kB  00:00:00
extras                                                                  | 3.4 kB  00:00:00
updates                                                                 | 3.4 kB  00:00:00
(1/4): base/7/x86_64/group_gz                                          | 155 kB  00:00:00
(2/4): extras/7/x86_64/primary_db                                     | 166 kB  00:00:00
(3/4): base/7/x86_64/primary_db                                       | 5.3 MB  00:00:02
(4/4): updates/7/x86_64/primary_db                                    | 8.4 MB  00:00:05
Determining fastest mirrors
 * base: ftp.funet.fi
 * extras: ftp.funet.fi
 * updates: ftp.funet.fi
Available Packages
mod_ssl.x86_64                         1:2.4.6-40.el7.centos.4                        updates
```

The repo provides: httpd, webserver, mod dav, httpd-suexec, httpd-mmn and httpd(x86-64)

Dependensies shown below:

```
[admin@localhost ~]$ repoquery --requires mod_ssl
/bin/cat
/bin/sh
httpd
httpd = 2.4.6-40.el7.centos.4
httpd-mmn = 20120211x8664
libc.so.6(GLIBC_2.4)(64bit)
libcrypto.so.10()(64bit)
libcrypto.so.10(OPENSSL_1.0.1)(64bit)
libcrypto.so.10(OPENSSL_1.0.1_EC)(64bit)
libcrypto.so.10(libcrypto.so.10)(64bit)
libdl.so.2()(64bit)
libpthread.so.0()(64bit)
libssl.so.10()(64bit)
libssl.so.10(libssl.so.10)(64bit)
openssl
openssl-libs >= 1:1.0.1e-37
rtld(GNU_HASH)
```

Install mod_ssl. Are all the packages from the same repository? Why?

repos are base= ftp.funet.fi ,epel= epel.mirror.far.fi ,extras= ftp.funet.fi and upates= ftp.funet.fi . Depends on what you are installing, there are also 3rd party repos for beta version and such. One repo doesn't have everything. Example CentOS Extras is enabled by default and it includes everything that has been tested by the centos development team.

```
C7.1.1503-base/x86_64           CentOS-7.1.1503 - Base              disabled
C7.1.1503-centosplus/x86_64     CentOS-7.1.1503 - CentOSPlus        disabled
C7.1.1503-extras/x86_64         CentOS-7.1.1503 - Extras            disabled
C7.1.1503-fasttrack/x86_64      CentOS-7.1.1503 - CentOSPlus        disabled
C7.1.1503-updates/x86_64        CentOS-7.1.1503 - Updates           disabled
base/7/x86_64                   CentOS-7 - Base                     enabled:   9,007
base-debuginfo/x86_64           CentOS-7 - Debuginfo                disabled
base-source/7                   CentOS-7 - Base Sources             disabled
c7-media                        CentOS-7 - Media                    disabled
centosplus/7/x86_64             CentOS-7 - Plus                     disabled
centosplus-source/7             CentOS-7 - Plus Sources             disabled
cr/7/x86_64                     CentOS-7 - cr                       disabled
epel/x86_64                     Extra Packages for Enterprise Linu enabled: 10,787
epel-debuginfo/x86_64           Extra Packages for Enterprise Linu disabled
epel-source/x86_64              Extra Packages for Enterprise Linu disabled
epel-testing/x86_64             Extra Packages for Enterprise Linu disabled
epel-testing-debuginfo/x86_64   Extra Packages for Enterprise Linu disabled
epel-testing-source/x86_64      Extra Packages for Enterprise Linu disabled
extras/7/x86_64                 CentOS-7 - Extras                   enabled:     393
extras-source/7                 CentOS-7 - Extras Sources           disabled
fasttrack/7/x86_64              CentOS-7 - fasttrack                disabled
updates/7/x86_64                CentOS-7 - Updates                  enabled:   2,560
updates-source/7                CentOS-7 - Updates Sources          disabled
repolist: 22,747
```

sudo yum install mod_ssl

```
Installing:
 setroubleshoot-server                           x86_64                          3.2.24-4.el7_2                          updates
Installing for dependencies:
 audit-libs-python                               x86_64                          2.4.1-5.el7                             base
 checkpolicy                                     x86_64                          2.1.12-6.el7                            base
 libcgroup                                       x86_64                          0.41-8.el7                              base
 libsemanage-python                              x86_64                          2.1.10-18.el7                           base
 policycoreutils-python                          x86_64                          2.2.5-20.el7                            base
 python-IPy                                      noarch                          0.75-6.el7                              base
 setools-libs                                    x86_64                          3.3.7-46.el7                            base
 setroubleshoot-plugins                          noarch                          3.0.59-2.el7_2                          updates
Updating for dependencies:
 libsemanage                                     x86_64                          2.1.10-18.el7                           base
 policycoreutils                                 x86_64                          2.2.5-20.el7                            base

Transaction Summary
```

```
Installed:
  mod_ssl.x86_64 1:2.4.6-40.el7.centos.4

Dependency Installed:
  apr.x86_64 0:1.4.8-3.el7
  apr-util.x86_64 0:1.5.2-6.el7
  httpd.x86_64 0:2.4.6-40.el7.centos.4
  httpd-tools.x86_64 0:2.4.6-40.el7.centos.4
  mailcap.noarch 0:2.1.41-2.el7

Complete!
```

2. Provides

What package provides the command sealert (hint: yum provides sealert). What repository is it from?
Install that package.

It provides setroubleshoot-server, it is from base repo.

```
[admin@localhost ~]$ yum provides sealert
Loaded plugins: fastestmirror, langpacks
Determining fastest mirrors
 * base: ftp.funet.fi
 * extras: ftp.funet.fi
 * updates: ftp.funet.fi
base/7/x86_64/filelists_db
extras/7/x86_64/filelists_db
updates/7/x86_64/filelists_db
setroubleshoot-server-3.2.24-1.1.el7.x86_64 : SELinux troubleshoot server
Repo        : base
Matched from:
Filename    : /usr/bin/sealert


setroubleshoot-server-3.2.24-4.el7_2.x86_64 : SELinux troubleshoot server
Repo        : updates
Matched from:
Filename    : /usr/bin/sealert
```

sudo yum install setroubleshoot-server

```
=========================================================================
 Package                      Arch          Version               Repository     Size
=========================================================================
Installing:
 setroubleshoot-server        x86_64        3.2.24-4.el7_2        updates        345 k
Installing for dependencies:
 audit-libs-python            x86_64        2.4.1-5.el7           base            69 k
 checkpolicy                  x86_64        2.1.12-6.el7          base           247 k
 libcgroup                    x86_64        0.41-8.el7            base            64 k
 libsemanage-python           x86_64        2.1.10-18.el7         base            94 k
 policycoreutils-python       x86_64        2.2.5-20.el7          base           435 k
 python-IPy                   noarch        0.75-6.el7            base            32 k
 setools-libs                 x86_64        3.3.7-46.el7          base           485 k
 setroubleshoot-plugins       noarch        3.0.59-2.el7_2        updates        586 k
Updating for dependencies:
 libsemanage                  x86_64        2.1.10-18.el7         base           123 k
 policycoreutils              x86_64        2.2.5-20.el7          base           803 k

Transaction Summary
=========================================================================
```

```
Installed:
  setroubleshoot-server.x86_64 0:3.2.24-4.el7_2

Dependency Installed:
  audit-libs-python.x86_64 0:2.4.1-5.el7
  checkpolicy.x86_64 0:2.1.12-6.el7
  libcgroup.x86_64 0:0.41-8.el7
  libsemanage-python.x86_64 0:2.1.10-18.el7
  policycoreutils-python.x86_64 0:2.2.5-20.el7
  python-IPy.noarch 0:0.75-6.el7
  setools-libs.x86_64 0:3.3.7-46.el7
  setroubleshoot-plugins.noarch 0:3.0.59-2.el7_2

Dependency Updated:
  libsemanage.x86_64 0:2.1.10-18.el7       policycoreutils.x86_64 0:2.2.5-20.el7

Complete!
```

3. EPEL

Install epel-release package. Does this package have a dedicated architecture? Why? Is the EPEL repository enabled by default?

Epel= noarch which means that its not depended on the platform architecture and can be istalled on any.

Extra packages is enabled as default

```
[admin@localhost ~]$ sudo yum install epel-release
```

```
Install  1 Package

Total download size: 14 k
Installed size: 24 k
Is this ok [y/d/N]: y
Downloading packages:
epel-release-7-6.noarch.rpm                                    |  14 kB   00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : epel-release-7-6.noarch                                          1/1
  Verifying  : epel-release-7-6.noarch                                          1/1

Installed:
  epel-release.noarch 0:7-6

Complete!
```

4. Systemctl

As you installed the mod_ssl, it installed the webserver automatically. What is the service name for the web server? What is the current status of the service? (systemctl status <webservername>)

It installed the httpd.service:

```
[admin@localhost ~]$ systemctl status httpd
httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled)
   Active: inactive (dead)
     Docs: man:httpd(8)
           man:apachectl(8)
```

Start the webserver and enable it so it is started at every boot.

```
[admin@localhost ~]$ sudo systemctl enable httpd.service
ln -s '/usr/lib/systemd/system/httpd.service' '/etc/systemd/system/multi-user.target.wants/httpd.service'
[admin@localhost ~]$ sudo chkconfig httpd on
Note: Forwarding request to 'systemctl enable httpd.service'.
[admin@localhost ~]$ sudo apachectl start
[admin@localhost ~]$ systemctl status httpd
httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled)
   Active: active (running) since Thu 2016-10-13 21:08:16 EEST; 20s ago
     Docs: man:httpd(8)
           man:apachectl(8)
 Main PID: 4864 (httpd)
   Status: "Total requests: 0; Current requests/sec: 0; Current traffic:   0 B/sec"
   CGroup: /system.slice/httpd.service
           ├─4864 /usr/sbin/httpd -DFOREGROUND
           ├─4865 /usr/sbin/httpd -DFOREGROUND
           ├─4866 /usr/sbin/httpd -DFOREGROUND
           ├─4867 /usr/sbin/httpd -DFOREGROUND
           ├─4868 /usr/sbin/httpd -DFOREGROUND
           └─4869 /usr/sbin/httpd -DFOREGROUND
```

5. Kernel

Check your current kernel version with uname –r. Update the kernel and take note of the new kernel version. Why does the kernel version shown in uname –r not change?

```
[admin@localhost ~]$ uname -r
3.10.0-229.el7.x86_64
```

```
[admin@localhost ~]$ sudo yum -y update kernel
```

```
Installed:
  kernel.x86_64 0:3.10.0-327.36.1.el7

Updated:
  initscripts.x86_64 0:9.49.30-1.el7_2.3

Dependency Updated:
  dracut.x86_64 0:033-360.el7_2.1
  dracut-config-rescue.x86_64 0:033-360.el7_2.1
  dracut-network.x86_64 0:033-360.el7_2.1
  kmod.x86_64 0:20-8.el7_2
  libgudev1.x86_64 0:219-19.el7_2.13
  linux-firmware.noarch 0:20150904-43.git6ebf5d5.el7
  systemd.x86_64 0:219-19.el7_2.13
  systemd-libs.x86_64 0:219-19.el7_2.13
  systemd-python.x86_64 0:219-19.el7_2.13
  systemd-sysv.x86_64 0:219-19.el7_2.13

Complete!
```

The system needs to be restarted before the new kernel takes over.

After reboot:

```
[admin@localhost ~]$ uname -r
3.10.0-327.36.2.el7.x86_64
```

6. Updates

Update the rest of the system. NEVER cancel the update when it is installing packages (Canceling when it is downloading is ok as no packages are yet installed)

Reboot and check that there are no new updates pending.

```
[admin@localhost ~]$ sudo yum update
```
After reboot:
```
[admin@localhost ~]$ sudo yum update
[sudo] password for admin:
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
 * base: centos.mirror.far.fi
 * epel: epel.mirror.far.fi
 * extras: centos.mirror.far.fi
 * updates: centos.mirror.far.fi
No packages marked for update
```