

Lab - Using Log Files in Linux

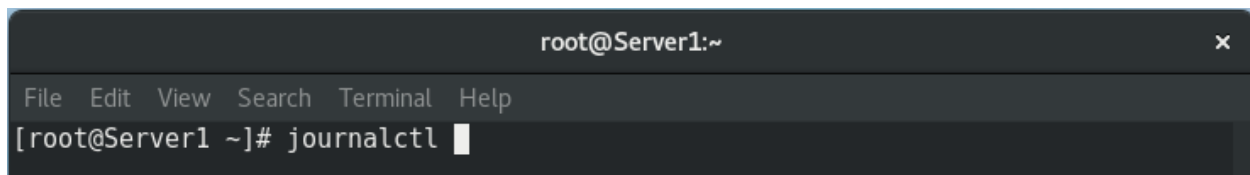
Overview

In this lab, you will learn to troubleshoot errors in a Linux system using the log files. The **Journald** is the new system for managing logs. We can use **journald** to view and determine when a service failed to start.

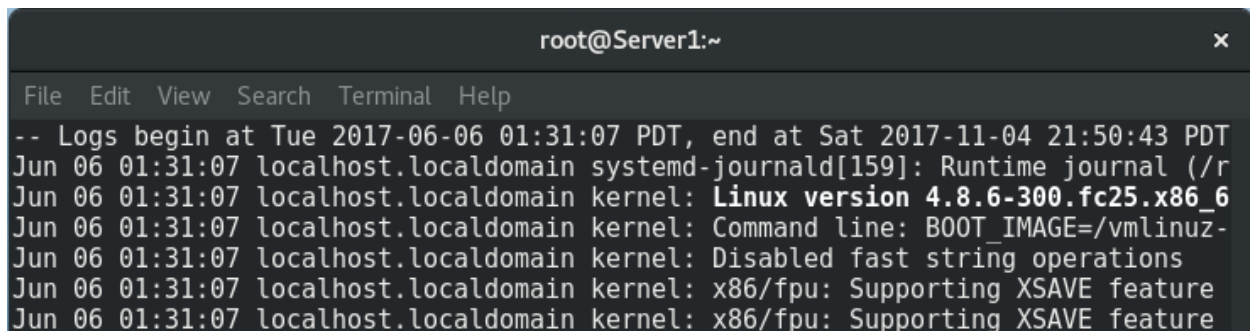
Requirements:

- Log in to the server VM operating system as root
- Open a terminal shell.

Type: **journalctl** (to view every log entry in the system)



```
root@Server1:~  
File Edit View Search Terminal Help  
[root@Server1 ~]# journalctl
```

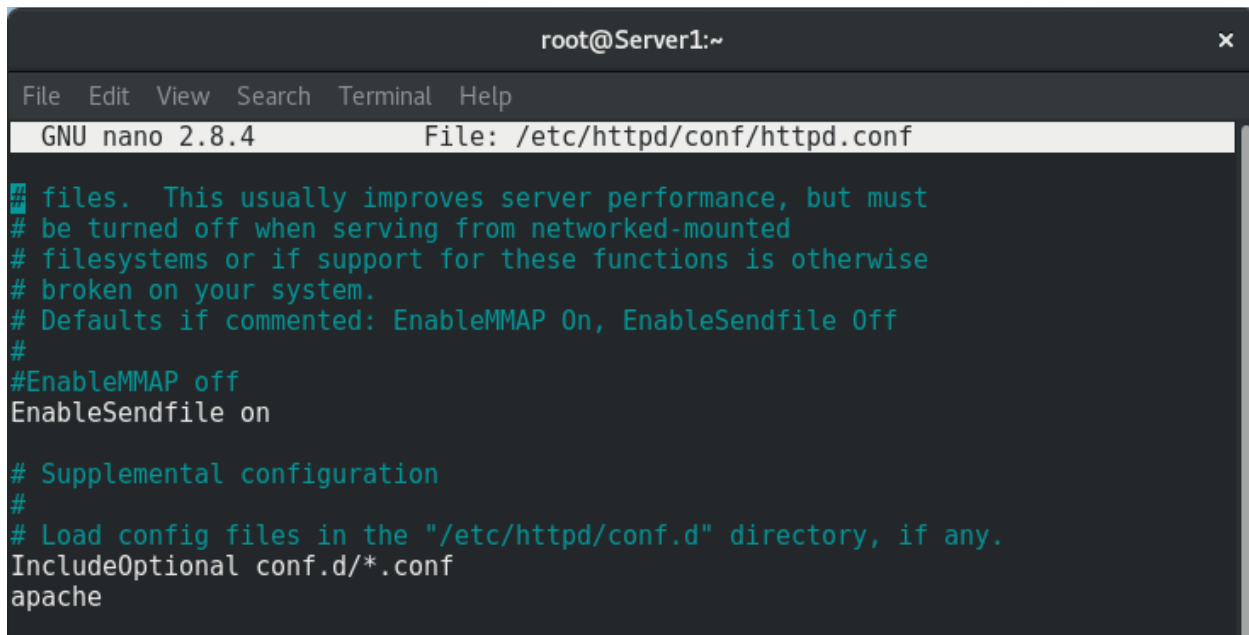


```
root@Server1:~  
File Edit View Search Terminal Help  
-- Logs begin at Tue 2017-06-06 01:31:07 PDT, end at Sat 2017-11-04 21:50:43 PDT  
Jun 06 01:31:07 localhost.localdomain systemd-journald[159]: Runtime journal (/r  
Jun 06 01:31:07 localhost.localdomain kernel: Linux version 4.8.6-300.fc25.x86_6  
Jun 06 01:31:07 localhost.localdomain kernel: Command line: BOOT_IMAGE=/vmlinuz-  
Jun 06 01:31:07 localhost.localdomain kernel: Disabled fast string operations  
Jun 06 01:31:07 localhost.localdomain kernel: x86/fpu: Supporting XSAVE feature  
Jun 06 01:31:07 localhost.localdomain kernel: x86/fpu: Supporting XSAVE feature
```

Type: nano /etc/httpd/conf/httpd.conf

Tip: Use your page down key to scroll through the file one page at a time until you reach the bottom.

Type: Hit the **End** key on the keyboard and type any word (**apache**) at the bottom of the file.



```
root@Server1:~
File Edit View Search Terminal Help
GNU nano 2.8.4 File: /etc/httpd/conf/httpd.conf

# files. This usually improves server performance, but must
# be turned off when serving from networked-mounted
# filesystems or if support for these functions is otherwise
# broken on your system.
# Defaults if commented: EnableMMAP On, EnableSendfile Off
#
#EnableMMAP off
EnableSendfile on

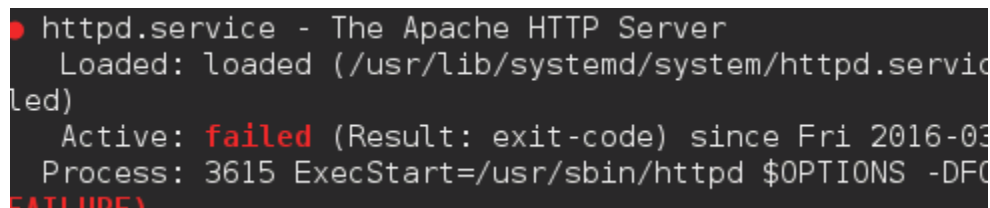
# Supplemental configuration
#
# Load config files in the "/etc/httpd/conf.d" directory, if any.
IncludeOptional conf.d/*.conf
apache
```

Type: **Ctrl + X** to Exit. Type **'y'** to save the changes. Hit enter to close the editor.

Type: **systemctl stop httpd** (stops the Apache server)

Type: **systemctl start httpd** (attempts to start the Apache Server)

Type: **systemctl status httpd** (See that the Apache did not start)



```
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; vendor preset: en
   Active: failed (Result: exit-code) since Fri 2016-03-18 12:00:00 CEST; 1m
   Process: 3615 ExecStart=/usr/sbin/httpd $OPTIONS -DFOREGROUND (code=exi
  (FAILURE)
```

Type: **journalctl -u httpd** and hit the **End** key on the keyboard.

(View error messages generated by the Apache server & see that it tell you there is an error on line 354 in the configuration file)

```
root@Server1:~
File Edit View Search Terminal Help
-- Logs begin at Tue 2017-06-06 01:31:07 PDT, end at Sat 2017-11-04 21:56:09 PDT. --
Aug 26 00:13:57 Server1 systemd[1]: Starting The Apache HTTP Server...
Aug 26 00:14:13 Server1 httpd[2401]: AH00558: httpd: Could not reliably determine the server's fully qualified domain name, using fe
Aug 26 00:14:23 Server1 systemd[1]: Started The Apache HTTP Server.
Aug 26 07:21:38 Server1 systemd[1]: Stopping The Apache HTTP Server...
Aug 26 07:21:43 Server1 systemd[1]: Stopped The Apache HTTP Server.
-- Reboot --
Aug 29 18:14:01 Server1 systemd[1]: httpd.service: Unit cannot be reloaded because it is inactive.
-- Reboot --
Nov 04 21:56:09 Server1 systemd[1]: Starting The Apache HTTP Server...
Nov 04 21:56:09 Server1 httpd[3163]: AH00526: Syntax error on line 354 of /etc/httpd/conf/httpd.conf:
Nov 04 21:56:09 Server1 httpd[3163]: Invalid command 'apache', perhaps misspelled or defined by a module not included in the server
Nov 04 21:56:09 Server1 systemd[1]: httpd.service: Main process exited, code=exited, status=1/FAILURE
Nov 04 21:56:09 Server1 systemd[1]: Failed to start The Apache HTTP Server.
Nov 04 21:56:09 Server1 systemd[1]: httpd.service: Unit entered failed state.
Nov 04 21:56:09 Server1 systemd[1]: httpd.service: Failed with result 'exit-code'.
```

Type the letter **q** or **Ctrl+c** on the keyboard to return to the CLI.

Go back and remove the word added to the `/etc/httpd/conf/httpd.conf` **file** and re-save the file (Steps 5-7).

Type: **clear** on the terminal window.

Type: **journalctl -u httpd -f**

```
root@Server1:~
File Edit View Search Terminal Help
[root@Server1 ~]# journalctl -u httpd -f
-- Logs begin at Tue 2017-06-06 01:31:07 PDT. --
Nov 04 21:56:09 Server1 systemd[1]: Starting The Apache HTTP Server...
Nov 04 21:56:09 Server1 httpd[3163]: AH00526: Syntax error on line 354 of /etc/httpd/conf/httpd.conf:
Nov 04 21:56:09 Server1 httpd[3163]: Invalid command 'apache', perhaps misspelled or defined by a module not included in the server
configuration
Nov 04 21:56:09 Server1 systemd[1]: httpd.service: Main process exited, code=exited, status=1/FAILURE
Nov 04 21:56:09 Server1 systemd[1]: Failed to start The Apache HTTP Server.
Nov 04 21:56:09 Server1 systemd[1]: httpd.service: Unit entered failed state.
Nov 04 21:56:09 Server1 systemd[1]: httpd.service: Failed with result 'exit-code'.
Nov 04 22:04:48 Server1 systemd[1]: Starting The Apache HTTP Server...
Nov 04 22:04:49 Server1 httpd[3345]: AH00558: httpd: Could not reliably determine the server's fully qualified domain name, using 19
2.168.145.136. Set the 'ServerName' directive globally to suppress this message
Nov 04 22:04:49 Server1 systemd[1]: Started The Apache HTTP Server.
```

(to go to the bottom of the journal log)

Type: **systemctl --failed** (to see any failed (for each service that failed above))

```
root@Server1:~
File Edit View Search Terminal Help
[root@Server1 ~]# systemctl --failed
UNIT                                LOAD    ACTIVE SUB    DESCRIPTION
● lm_sensors.service loaded failed failed Hardware Monitoring Sensors

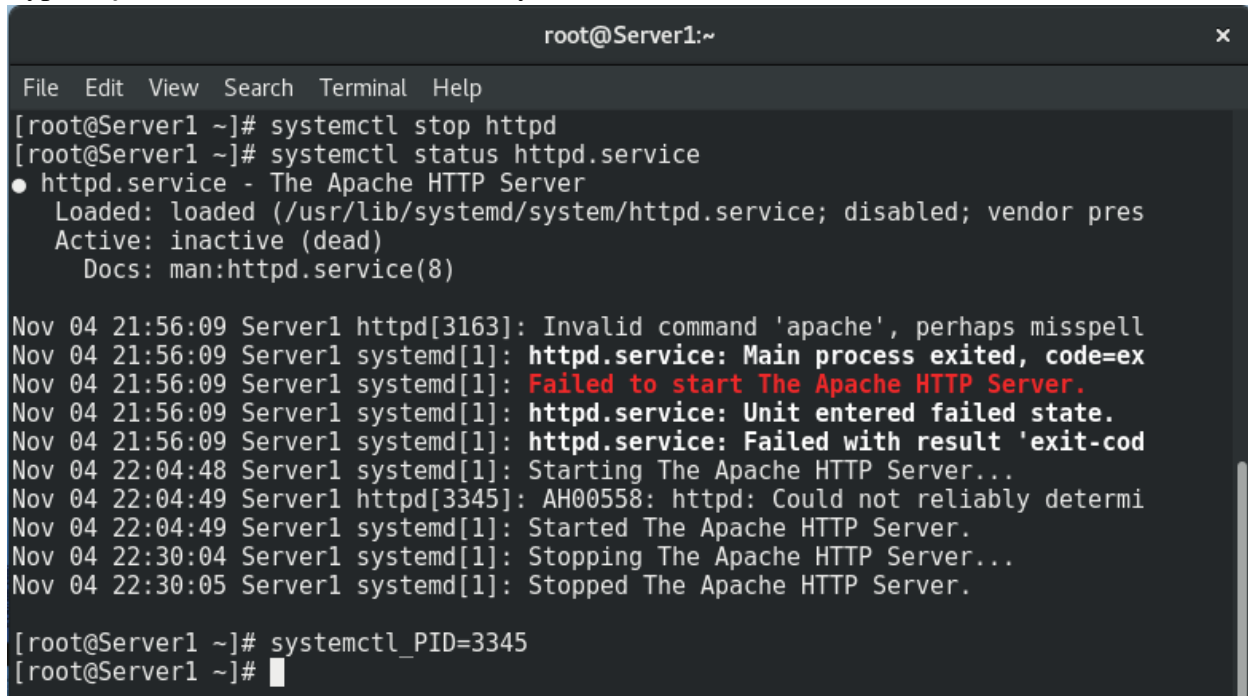
LOAD    = Reflects whether the unit definition was properly loaded.
ACTIVE  = The high-level unit activation state, i.e. generalization of SUB.
SUB      = The low-level unit activation state, values depend on unit type.

1 loaded units listed. Pass --all to see loaded but inactive units, too.
To show all installed unit files use 'systemctl list-unit-files'.
[root@Server1 ~]#
```

Stop the httpd using the systemctl command.

To see any errors related to the process ID of a failed service, we can use the run the `Systemctl status httpd.service` to capture the process id.

Type: **systemctl _PID=3615** (to see any errors related to the Process ID)

A terminal window titled 'root@Server1:~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
[root@Server1 ~]# systemctl stop httpd
[root@Server1 ~]# systemctl status httpd.service
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor pres
   Active: inactive (dead)
     Docs: man:httpd.service(8)

Nov 04 21:56:09 Server1 httpd[3163]: Invalid command 'apache', perhaps misspell
Nov 04 21:56:09 Server1 systemd[1]: httpd.service: Main process exited, code=ex
Nov 04 21:56:09 Server1 systemd[1]: Failed to start The Apache HTTP Server.
Nov 04 21:56:09 Server1 systemd[1]: httpd.service: Unit entered failed state.
Nov 04 21:56:09 Server1 systemd[1]: httpd.service: Failed with result 'exit-cod
Nov 04 22:04:48 Server1 systemd[1]: Starting The Apache HTTP Server...
Nov 04 22:04:49 Server1 httpd[3345]: AH00558: httpd: Could not reliably determi
Nov 04 22:04:49 Server1 systemd[1]: Started The Apache HTTP Server.
Nov 04 22:30:04 Server1 systemd[1]: Stopping The Apache HTTP Server...
Nov 04 22:30:05 Server1 systemd[1]: Stopped The Apache HTTP Server.

[root@Server1 ~]# systemctl _PID=3345
[root@Server1 ~]#
```

Go to the **httpd.conf** file and remove /fix the error.

Retry to start the. **systemctl start httpd**

Check the status of the service to see if it starts correctly. **systemctl status httpd**

```

root@Server1:~
File Edit View Search Terminal Help
[root@Server1 ~]# systemctl start httpd
[root@Server1 ~]# systemctl status httpd.service
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: di
   Active: active (running) since Sat 2017-11-04 22:39:42 PDT; 11s ago
     Docs: man:httpd.service(8)
   Main PID: 4164 (httpd)
   Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/
   Tasks: 47 (limit: 19660)
   CGroup: /system.slice/httpd.service
           └─4164 /usr/sbin/httpd -DFOREGROUND
             └─4172 /usr/sbin/httpd -DFOREGROUND
               └─4173 /usr/sbin/httpd -DFOREGROUND
                 └─4174 /usr/sbin/httpd -DFOREGROUND
                   └─4175 /usr/sbin/httpd -DFOREGROUND
                     └─4176 /usr/sbin/httpd -DFOREGROUND

Nov 04 22:39:42 Server1 systemd[1]: Starting The Apache HTTP Server...
Nov 04 22:39:42 Server1 httpd[4164]: AH00558: httpd: Could not reliably determine the
Nov 04 22:39:42 Server1 systemd[1]: Started The Apache HTTP Server.
lines 1-18/18 (END)

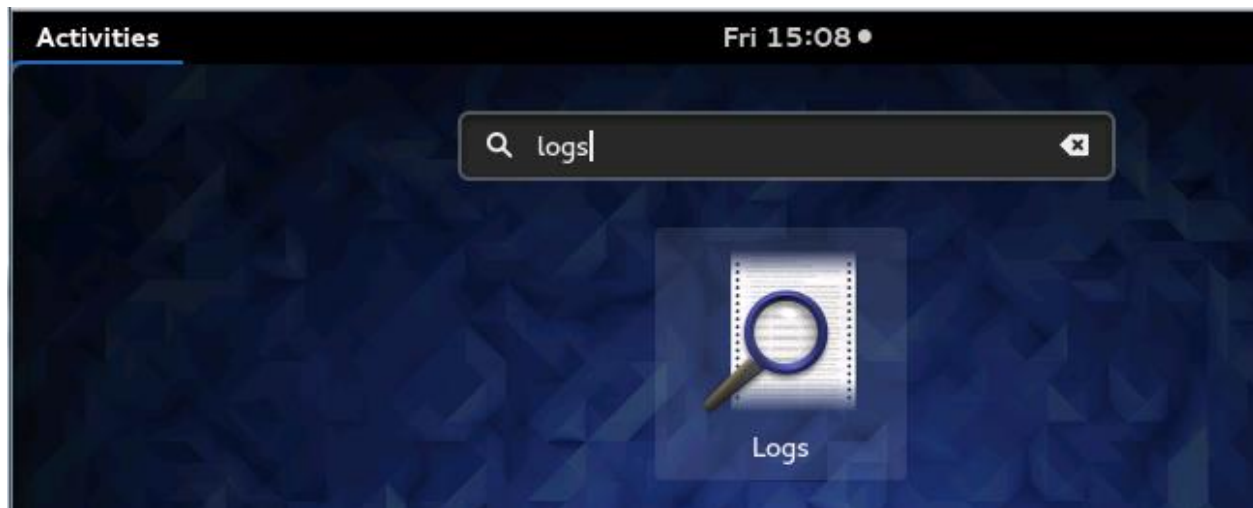
```

There is a GUI interface for the Logs utility in Linux.

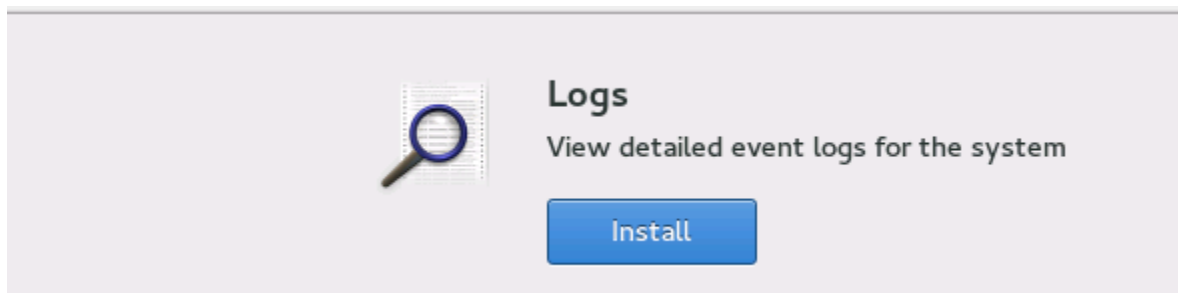
Logs			
13:36 - 15:01			
Important	Other	pam_unix(gdm-password:auth): auth could not iden...	15:01
	Other	pam_unix(gdm-password:auth): conversation failed	15:01
All	Other	Failed to start The Apache HTTP Server.	13:48
	Applications	[pulseaudio] bluez5-util.c: GetManagedObjects() ...	13:42
Applications	Applications	Cannot access vdaagent virtio channel /dev/virtio...	13:42
	Other	Error probing device: Error sending ATA command ...	13:37
System	Other	Cannot access vdaagent virtio channel /dev/virtio...	13:37
	Other	internal error: QEMU / QMP failed: Could not acc...	13:37
Security	Other	internal error: QEMU / QMP failed: Could not acc...	13:37
	Other	Failed to start Network Manager Wait Online.	13:37
Hardware	Other	AMD Processor family 21: Please use the edac_mce...	13:36
	System	nsc-ircc, Wrong chip version 00	13:36
	Hardware	piix4_smbus 0000:00:07.3: SMBus Host Controller ...	13:36
	Hardware	sd 2:0:0:0: [sda] Assuming drive cache: write th...	13:36

It must be installed to use – minimize any open windows.

Click on **Activities** and enter to word **logs** in the search window.



Click on the icon for Logs and if it says Install, click the install button.



End of the lab!