

CS2032 - Cloud Computing (Ciclo 2024-2)

Logs o Registros

Semana 7 - Taller 1: Logs

ELABORADO POR: GERALDO COLCHADO

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2. Concepto: Logs
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5. Cierre

Objetivo del taller 1:

Logs

- Entender qué es un Log
- Aprender a registrar Logs en formato estándar
- Aprender a consultar Logs

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Concepto: Logs

*“Un log es un **registro secuencial y cronológico** de las **operaciones** realizadas por un **sistema informático**”*

*“Los archivos log o log file, por tanto, almacenan **información detallada acerca del funcionamiento normal y las anomalías de sistemas**, aplicaciones o servidores, lo que los convierte en indispensables para supervisar y **diagnosticar posibles contratiempos**, así como para garantizar la **seguridad informática**”*

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Ejercicio 1:

Registrar Logs

- **Paso 1:** Instale la librería de python para registrar logs:

```
pip3 install loguru
```

- **Paso 2:** Cree un repositorio “ingesta” en github y suba los archivos indicados por el docente
- **Paso 3:** En la “MV Pruebas” haga un git clone del repositorio “ingesta”

Ejercicio 1:

Registrar Logs

- **Paso 4:** Ejecute en **primer plano** y analice salida en pantalla versus código fuente

```
:~/ingesta (main) $ python3 ingesta01.py
2024-09-29 15:27:07.865 | INFO      | __main__:<module>:5 - ingesta01 - Server started successfully.
2024-09-29 15:27:07.865 | WARNING  | __main__:<module>:6 - ingesta01 - Invalid configuration detected.
2024-09-29 15:27:07.866 | ERROR    | __main__:<module>:7 - ingesta01 - Failed to connect to the database.
2024-09-29 15:27:07.866 | CRITICAL | __main__:<module>:8 - ingesta01 - Unexpected system error occurred. Shutting down.
2024-09-29 15:27:07.866 | SUCCESS  | __main__:<module>:9 - ingesta01 - Data processing completed successfully.
~/ingesta (main) $
```

```
1  from loguru import logger
2
3  id = "ingesta01"
4
5  logger.info(id + " - " + "Server started successfully.")
6  logger.warning(id + " - " + "Invalid configuration detected.")
7  logger.error(id + " - " + "Failed to connect to the database.")
8  logger.critical(id + " - " + "Unexpected system error occurred. Shutting down.")
9  logger.success(id + " - " + "Data processing completed successfully.")
```


Ejercicio 1:

Registrar Logs

- **Paso 5:** Cree la carpeta “logs”, agregue permisos de ejecución a “ingesta-start.sh” y ejecuta en **segundo plano**. Verifique que se hayan creado los archivos de logs:

```
:~/ingesta (main) $ ./ingesta-start.sh
nohup: nohup: nohup: nohup: nohup: redirecting stderr to stdout
redirecting stderr to stdout
redirecting stderr to stdout
redirecting stderr to stdout
redirecting stderr to stdout
:~/ingesta (main) $
```

```
:~/ingesta/logs (main) $ ls -l
total 20
-rw-rw-r-- 1 ubuntu ubuntu 540 Sep 29 15:32 ingesta01.log
-rw-rw-r-- 1 ubuntu ubuntu 540 Sep 29 15:32 ingesta02.log
-rw-rw-r-- 1 ubuntu ubuntu 540 Sep 29 15:32 ingesta03.log
-rw-rw-r-- 1 ubuntu ubuntu 540 Sep 29 15:32 ingesta04.log
-rw-rw-r-- 1 ubuntu ubuntu 540 Sep 29 15:32 ingesta05.log
:~/ingesta/logs (main) $
```

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Ejercicio 2:

Consultar Logs

- **Paso 1:** Instale esta aplicación en ubuntu para consultar logs:

```
sudo apt update
```

```
sudo apt install lnav
```

Ejercicio 2:

Consultar Logs

- **Paso 2:** Ingrese a lnav en directorio “logs” y visualice todos los logs cronológicamente

```
:~/ingesta/logs (main) $ lnav .
```

```
Sun Sep 29 15:41:02 UTC ingesta05.log:: generic_log:: LOG
2024-09-29 15:32:41.783 | INFO | __main__:<module>:5 - ingesta05 - Server started successfully.
2024-09-29 15:32:41.785 | INFO | __main__:<module>:5 - ingesta04 - Server started successfully.
2024-09-29 15:32:41.785 | WARNING | __main__:<module>:6 - ingesta04 - Invalid configuration detected.
2024-09-29 15:32:41.785 | ERROR | __main__:<module>:7 - ingesta04 - Failed to connect to the database.
2024-09-29 15:32:41.785 | CRITICAL | __main__:<module>:8 - ingesta04 - Unexpected system error occurred. Shutting down.
2024-09-29 15:32:41.785 | SUCCESS | __main__:<module>:9 - ingesta04 - Data processing completed successfully.
2024-09-29 15:32:41.786 | INFO | __main__:<module>:5 - ingesta01 - Server started successfully.
2024-09-29 15:32:41.786 | INFO | __main__:<module>:5 - ingesta02 - Server started successfully.
2024-09-29 15:32:41.786 | WARNING | __main__:<module>:6 - ingesta02 - Invalid configuration detected.
2024-09-29 15:32:41.786 | WARNING | __main__:<module>:6 - ingesta01 - Invalid configuration detected.
2024-09-29 15:32:41.786 | ERROR | __main__:<module>:7 - ingesta01 - Failed to connect to the database.
2024-09-29 15:32:41.786 | CRITICAL | __main__:<module>:8 - ingesta01 - Unexpected system error occurred. Shutting down.
2024-09-29 15:32:41.786 | SUCCESS | __main__:<module>:9 - ingesta01 - Data processing completed successfully.
2024-09-29 15:32:41.787 | WARNING | __main__:<module>:6 - ingesta05 - Invalid configuration detected.
2024-09-29 15:32:41.787 | ERROR | __main__:<module>:7 - ingesta02 - Failed to connect to the database.
2024-09-29 15:32:41.787 | ERROR | __main__:<module>:7 - ingesta05 - Failed to connect to the database.
2024-09-29 15:32:41.787 | CRITICAL | __main__:<module>:8 - ingesta02 - Unexpected system error occurred. Shutting down.
2024-09-29 15:32:41.787 | CRITICAL | __main__:<module>:8 - ingesta05 - Unexpected system error occurred. Shutting down.
2024-09-29 15:32:41.787 | SUCCESS | __main__:<module>:9 - ingesta05 - Data processing completed successfully.
2024-09-29 15:32:41.787 | SUCCESS | __main__:<module>:9 - ingesta02 - Data processing completed successfully.
2024-09-29 15:32:41.788 | INFO | __main__:<module>:5 - ingesta03 - Server started successfully.
2024-09-29 15:32:41.789 | WARNING | __main__:<module>:6 - ingesta03 - Invalid configuration detected.
2024-09-29 15:32:41.789 | ERROR | __main__:<module>:7 - ingesta03 - Failed to connect to the database.
2024-09-29 15:32:41.789 | CRITICAL | __main__:<module>:8 - ingesta03 - Unexpected system error occurred. Shutting down.
2024-09-29 15:32:41.789 | SUCCESS | __main__:<module>:9 - ingesta03 - Data processing completed successfully.

— Last message: 8 minutes and 9 seconds ago; Files: 5; Error rate: 1.22/min; Time span: 006 —
Filters :: Press TAB to edit
L0 100% ? :View Help
Press e/E to move forward/backward through error messages
```

Ejercicio 2:

Consultar Logs - Con SQL

- **Paso 3:** Muestre todos los logs. Ejecute query con ;
select log_time, log_level, col_1 as log_message from logline;

Sun Sep 29 15:47:04 UTC			
log_time	log_level	log_message	
2024-09-29 15:32:41.783	info	5 - ingesta05 - Server started successfully	
2024-09-29 15:32:41.785	info	5 - ingesta04 - Server started successfully	
2024-09-29 15:32:41.785	warning	6 - ingesta04 - Invalid configuration detected	
2024-09-29 15:32:41.785	error	7 - ingesta04 - Failed to connect to the database	
2024-09-29 15:32:41.785	critical	8 - ingesta04 - Unexpected system error occurred. Shutting down	
2024-09-29 15:32:41.786	info	5 - ingesta01 - Server started successfully	
2024-09-29 15:32:41.786	info	5 - ingesta02 - Server started successfully	
2024-09-29 15:32:41.786	warning	6 - ingesta02 - Invalid configuration detected	
2024-09-29 15:32:41.786	warning	6 - ingesta01 - Invalid configuration detected	
2024-09-29 15:32:41.786	error	7 - ingesta01 - Failed to connect to the database	
2024-09-29 15:32:41.786	critical	8 - ingesta01 - Unexpected system error occurred. Shutting down	
2024-09-29 15:32:41.787	warning	6 - ingesta05 - Invalid configuration detected	
2024-09-29 15:32:41.787	error	7 - ingesta02 - Failed to connect to the database	
2024-09-29 15:32:41.787	error	7 - ingesta05 - Failed to connect to the database	
2024-09-29 15:32:41.787	critical	8 - ingesta02 - Unexpected system error occurred. Shutting down	
2024-09-29 15:32:41.787	critical	8 - ingesta05 - Unexpected system error occurred. Shutting down	
2024-09-29 15:32:41.788	info	5 - ingesta03 - Server started successfully	
2024-09-29 15:32:41.789	warning	6 - ingesta03 - Invalid configuration detected	
2024-09-29 15:32:41.789	error	7 - ingesta03 - Failed to connect to the database	
2024-09-29 15:32:41.789	critical	8 - ingesta03 - Unexpected system error occurred. Shutting down	

Ejercicio 2:

Consultar Logs - Con SQL

- **Paso 4:** Muestre todos los logs “error” y “critical”. Ejecute query con ;
select log_time, log_level, col_1 as log_message from logline where log_level in ('error', 'critical');

Sun Sep 29 15:50:24 UTC			
log_time	log_level	log_message	
2024-09-29 15:32:41.785	error	7 - ingesta04 - Failed to connect to the database	
2024-09-29 15:32:41.785	critical	8 - ingesta04 - Unexpected system error occurred. Shutting down	
2024-09-29 15:32:41.786	error	7 - ingesta01 - Failed to connect to the database	
2024-09-29 15:32:41.786	critical	8 - ingesta01 - Unexpected system error occurred. Shutting down	
2024-09-29 15:32:41.787	error	7 - ingesta02 - Failed to connect to the database	
2024-09-29 15:32:41.787	error	7 - ingesta05 - Failed to connect to the database	
2024-09-29 15:32:41.787	critical	8 - ingesta02 - Unexpected system error occurred. Shutting down	
2024-09-29 15:32:41.787	critical	8 - ingesta05 - Unexpected system error occurred. Shutting down	
2024-09-29 15:32:41.789	error	7 - ingesta03 - Failed to connect to the database	
2024-09-29 15:32:41.789	critical	8 - ingesta03 - Unexpected system error occurred. Shutting down	

Ejercicio 2:

Consultar Logs - Con SQL

- **Paso 5:** Muestre todos los logs de “ingesta01”. Ejecute query con ;
select log_time, log_level, col_1 as log_message from logline where log_message like '%ingesta01%';

Sun Sep 29 15:52:01 UTC		
log_time	log_level	log_message
2024-09-29 15:32:41.786	info	5 - ingesta01 - Server started successfully
2024-09-29 15:32:41.786	warning	6 - ingesta01 - Invalid configuration detected
2024-09-29 15:32:41.786	error	7 - ingesta01 - Failed to connect to the database
2024-09-29 15:32:41.786	critical	8 - ingesta01 - Unexpected system error occurred. Shutting down

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Cierre:

Logs - Qué aprendimos?

- Entender qué es un Log
- Aprender a registrar Logs en formato estándar
- Aprender a consultar Logs

Gracias

Elaborado por docente: Geraldo Colchado