

This Bash script performs log rotation and backup for the 'syslog' log file on an hourly basis.

### Variable Definitions:

- `log_dir="/var/log"`: Specifies the log directory where log files are located.
- `backup_dir="/backup/logs"`: Defines the backup directory where rotated log files will be stored.
- `one_hour=$(date -d "1 hour ago" "+%Y%m%d%H%M%S")`: Calculates a timestamp for one hour ago in the format YYYYMMDDHHMMSS. This timestamp will be used for renaming the log file and compressing it.

### 'rotate\_and\_backup\_logs' Function:

- `log_file="syslog"`: Specifies the log file to be rotated (in this case, syslog).
- `current_hour=$(date "+%H")`: Retrieves the current hour using the %H format.

### Log Rotation and Backup:

- The script checks if the log file ("`$log_dir/$log_file`") exists.
- If the log file exists, it performs the following actions:
  - Renames the existing log file by appending the timestamp calculated for one hour ago ("`$one_hour`") to its name.
  - Creates a new empty log file with the same name as the original log file.
  - Compresses the old log file from one hour ago ("`$log_file.$one_hour`") using the `gzip` command.
  - Moves the compressed log file to the specified backup directory ("`$backup_dir/"`)
- If the log file does not exist, it prints an error message indicating that the log file was not found.

### Hourly Rotation Loop:

- The script runs in an infinite loop (`while true;`) to continuously rotate logs every hour.
- Inside the loop, it calls the 'rotate\_and\_backup\_logs' function to perform log rotation and backup.
- After each rotation, the script sleeps for 3600 seconds (1 hour) using `sleep 3600` command before rotating logs again.

### Exit Code:

`exit 0`: This line is used to explicitly specify a successful exit status (exit code 0) for the script.