

Automation for SSL Certificate Renewal: Post 4 of 5 [Script]

```
#!/bin/bash
```

```
# -----
```

```
# Script Name: ssh_certificate_lets_encrypt.sh
```

```
# Author: Shiivam Agnihotri
```

```
# Date: (12 March 2024)
```

```
# Description: Validate and Renew SSL certificate using Let's Encrypt.
```

```
# -----
```

```
# Define domain and email variables
```

```
DOMAIN="devops-ocean.com"
```

```
EMAIL="contact@devops-ocean.com"
```

```
# Define the path to the Let's Encrypt script
```

```
LE_SCRIPT="/usr/bin/certbot"
```

```
# Define the path to the SSL certificate
```

```
CERTIFICATE_PATH="/etc/letsencrypt/live/$DOMAIN/fullchain.pem"
```

```
# Define the path to the certificate renewal log file
```

```
LOG_FILE="/var/log/certbot-renewal.log"
```

```
# Check if the certificate needs renewal
```

```
if ! $LE_SCRIPT renew --dry-run > $LOG_FILE 2>&1; then
```

```
    # Certificate needs renewal, execute renewal
```

```
    echo "$(date +"%Y-%m-%d %H:%M:%S") - Certificate for $DOMAIN needs renewal" >>
```

```
$LOG_FILE
```

```
# Execute certificate renewal
```

```
$LE_SCRIPT renew --noninteractive --agree-tos --email $EMAIL >> $LOG_FILE 2>&1
```

```
# Check if renewal was successful
if [ $? -eq 0 ]; then
    echo "$(date +"%Y-%m-%d %H:%M:%S") - Certificate for $DOMAIN successfully renewed"
>> $LOG_FILE
    # Restart web server to apply changes
    systemctl restart nginx
else
    echo "$(date +"%Y-%m-%d %H:%M:%S") - Certificate renewal for $DOMAIN failed" >>
$LOG_FILE
fi
else
    # Certificate doesn't need renewal
    echo "$(date +"%Y-%m-%d %H:%M:%S") - Certificate for $DOMAIN is up to date, no renewal
needed" >> $LOG_FILE
fi
```

Explanation

#!/bin/bash: This line is called a shebang and indicates that the script should be executed using the Bash shell.

Comments: Lines starting with # are comments and are ignored by the shell. They are used to provide information about the script, such as its purpose, author, and date.

Domain and Email Configuration:

The script begins by defining variables for the domain name (DOMAIN) for which the SSL certificate is issued and the email address (EMAIL) associated with the certificate.

Let's Encrypt Script Path:

The script specifies the path to the Let's Encrypt script (certbot). This script is responsible for certificate management, including renewal.

Certificate Path:

The path to the SSL certificate (CERTIFICATE_PATH) is defined. This certificate path is typically where Let's Encrypt stores the certificate files.

Log File Path:

A path to a log file (LOG_FILE) is specified. This log file will contain information about the certificate renewal process.

Checking Certificate Renewal:

The script uses the --dry-run option with certbot to check if the certificate needs renewal. This option performs a test renewal without actually updating the certificate.

Certificate Renewal Process:

If the dry-run indicates that renewal is needed, the script executes the certificate renewal process non-interactively (--noninteractive), agreeing to the Let's Encrypt terms of service (--agree-tos) and providing the email address for notifications (--email).

Handling Renewal Outcome:

If the renewal process is successful, the script logs the event and restarts the web server to apply the changes.

If the renewal fails, the script logs the failure.

Logging:

Throughout the script, various actions and outcomes are logged to the log file specified earlier. This helps in tracking the certificate renewal process and troubleshooting any issues

If you want to execute this script on every Sunday at 6pm then you can update like this in crontab:

```
0 18 * * 0 /path/to/your/script.sh
```

You can customize it as per your need.

Explanation:

0: Minute (0 represents 6pm)

18: Hour (24-hour format; 18 corresponds to 6pm)

*****: Day of month (ignored since we specify day of week)

*****: Month (ignored since we specify day of week)

0: Day of week (0 or 7 both represent Sunday)

`/path/to/your/script.sh`: The path to your script file

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