

Host Facts Collection Script

Overview

This project documents a Bash script that collects essential Linux host information and writes it to a host-specific output file. The script provides a simple, repeatable way to capture system details for validation and troubleshooting.

What It Does

Gathers hostname, IP and MAC addresses

Collects CPU and memory information

Writes results to /tmp/\$HOSTNAME.txt

Workflow

Updated and verified the script name and permissions

Reviewed script functionality

Added the script to a Git repository

Committed and pushed changes to the remote repository

Verified commit history

Result

Demonstrates Bash scripting fundamentals, Linux permission handling, and basic Git workflows in a system administration context.

Attempted to rename a root-owned script in /home/egarrido/scripts. The initial mv command failed due to insufficient permissions. Re-running the command with sudo succeeded, confirming proper understanding of Linux file ownership, permissions, and privilege escalation.

```
egarrido@dev-app-eg3: ~/scripts
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 theegeologist_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 thenderson_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 thynes_hosts_facts.sh
-rw-r--r--. 1 root root 1203 Sep 22 15:29 tjohnson_host_fact.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:29 tjohnson_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 tloui_host_facts.sh
-rwxr-xr-x. 1 root root 1205 Sep 22 15:29 tlouis_facts.sh
-rw-r--r--. 1 root root 0 Sep 22 15:29 tmp
-rwxr-xr-x. 1 root root 1205 Sep 22 15:29 tmustapha_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:29 TOpierre_host_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:29 tscipio_host_facts.sh
-rwxr-xr-x. 1 root root 1236 Sep 22 15:29 tshank_host_facts.sh
-rwxr-xr-x. 1 root root 1235 Sep 22 15:29 tsint_host_facts.sh
-rw-r--r--. 1 root root 909 Sep 22 15:29 tslan_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 tudell_host_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:29 ubolarinwa_host_facts.sh
-rwxr-xr-x. 1 root root 1207 Sep 22 15:29 ubolarinwa_viti2_host_facts.sh
-rwxr-xr-x. 1 root root 1234 Sep 22 15:29 ucharles_host_facts.sh
-rwxr-xr-x. 1 root root 1268 Sep 22 15:29 ulewis_host_facts.sh
-rwxr-xr-x. 1 root root 1268 Sep 22 15:29 umorales_host.facts.sh
-rwxr-xr-x. 1 root root 1268 Sep 22 15:29 umorales_host_facts.sh
-rw-r--r--. 1 root root 29 Sep 22 15:29 {username}_host_facts.sh
-rw-r--r--. 1 root root 26 Sep 22 15:29 vakam_host.facts.sh
-rwxr-xr-x. 2 root root 22 Sep 22 15:29 vkurteva
-rwxr-xr-x. 1 root root 1268 Sep 22 15:29 vkurteva_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:29 vramirez_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 vwilliams_host_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:29 weltelbany_host_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:29 wmerceda_host_facts.sh
-rwxr-xr-x. 1 root root 1236 Sep 22 15:29 wnap_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:29 wrhoe_host_facts.sh
-rwxr-xr-x. 1 root root 1209 Sep 22 15:29 wzelaya_host_facts.sh
-rwxr-xr-x. 1 root root 1270 Sep 22 15:29 ydokunor_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:29 yezeribe2_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:29 yezeribe_host_facts.sh
-rwxr-xr-x. 1 root root 1235 Sep 22 15:29 ymashayekh_host_facts.sh
-rwxr-xr-x. 1 root root 1234 Sep 22 15:29 yogoji_host_facts.sh
egarrido@dev-app-eg3 scripts]$ pwd
/home/egarrido/scripts
egarrido@dev-app-eg3 scripts]$ mv host_facts.sh egarrido_host_facts.sh
mv: cannot move 'host_facts.sh' to 'egarrido_host_facts.sh': Permission denied
egarrido@dev-app-eg3 scripts]$ sudo mv host_facts.sh egarrido_host_facts.sh
[sudo] password for egarrido:
egarrido@dev-app-eg3 scripts]$
```

This view confirms the successful rename of the host facts script. The updated file (egarrido_host_facts.sh) now appears alongside other user-specific scripts, verifying that the rename completed correctly and follows the established naming convention.

```
egarrido@dev-app-eg3: ~/scr
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 eabaafe_host_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:29 eaboud_host_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:29 eadex_host_facts.sh
-rwxr-xr-x. 1 root root 1206 Sep 22 15:29 edwomoh_hosts_facts.sh
-rwxr-xr-x. 1 root root 1207 Sep 22 15:29 eelaiho_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 efrancois_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 egalloway_host_facts.sh
-rwxr-xr-x. 1 root root 1207 Sep 22 15:29 egarrido_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 erickgiron_host_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:29 fasemota_host_facts.sh
-rwxr-xr-x. 1 root root 1266 Sep 22 15:29 fcuffee_host_facts.sh
-rwxr-xr-x. 1 root root 1268 Sep 22 15:29 fetohwo_host_facts.sh
-rwxr-xr-x. 1 root root 1234 Sep 22 15:29 ffotabe_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 fholdbrook_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 fmolokwu_host_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:29 foni_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 fpulla_host_facts.sh
-rwxr-xr-x. 1 root root 1203 Sep 22 15:29 ggoguen_host_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:29 gilbert-pena22_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:29 gkiarie_facts.sh
-rwxr-xr-x. 1 root root 1203 Sep 22 15:29 gmichals_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 grouseau_host_facts.sh
-rwxr-xr-x. 1 root root 1236 Sep 22 15:29 gsikalos_host_facts.sh
-rw-r--r--. 1 root root 1203 Sep 22 15:29 gthelusma_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:29 gyeboah_host_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:29 haugustin_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 hbeaubrun_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 hdiohore_host_facts.sh
-rwxr-xr-x. 1 root root 1209 Sep 22 15:29 hisaac_host_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:29 hjoseph_host_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:29 hkabir_hosts_facts.sh
-rwxr-xr-x. 1 root root 1203 Sep 22 15:29 hleung_host_facts.sh
-rw-r--r--. 1 root root 1237 Sep 22 15:29 host_fact_mpowell.sh
-rwxr-xr-x. 1 root root 1237 Sep 22 15:29 host_facts_erice.sh
-rwxr-xr-x. 1 root root 1205 Sep 22 15:29 host_fact.sh_DoNotDelete
-rwxr-xr-x. 1 root root 1237 Sep 22 15:29 host_facts_mpowell.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 host_facts_ppowell.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 host_facts_ttchabert.sh
-rwxr-xr-x. 1 root root 1268 Sep 22 15:29 hpremaratne_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 hromero_hosts_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:29 ihualngo_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 jboone_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:29 jbrowser_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:29 jcooke_host_facts.sh
```

This step shows the `egarrido_host_facts.sh` script being reviewed after renaming. The script collects system information—including hostname, IP addresses, MAC addresses, CPU details, and memory usage—and writes the output to a host-specific file in `/tmp` using the `$HOSTNAME` variable.

```
-rwxr-xr-x. 1 root root 1267 Sep 22 15:29 yezeribe2_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:29 yezeribe_host_facts.sh
-rwxr-xr-x. 1 root root 1235 Sep 22 15:29 ymashayekh_host_facts.sh
-rwxr-xr-x. 1 root root 1234 Sep 22 15:29 yogoji_host_facts.sh
[egarrido@dev-app-eg3 scripts]$ date >> "/tmp/$HOSTNAME.txt"
>
> ^C
[egarrido@dev-app-eg3 scripts]$ date >> "/tmp/$HOSTNAME.txt"
^C
[egarrido@dev-app-eg3 scripts]$ date >> "/tmp/$HOSTNAME.txt"
> ^C
[egarrido@dev-app-eg3 scripts]$ cat egarrido_host_facts.sh
#!/bin/bash

# This script will gather hosts facts

echo "#####" >> "/tmp/$HOSTNAME.txt"
echo "Hostname" >> "/tmp/$HOSTNAME.txt"
hostname >> "/tmp/$HOSTNAME.txt"
echo "" >> "/tmp/$HOSTNAME.txt"

echo "#####" >> "/tmp/$HOSTNAME.txt"
echo "IP Addresses" >> "/tmp/$HOSTNAME.txt"
ip a | grep inet >> "/tmp/$HOSTNAME.txt"
echo "" >> "/tmp/$HOSTNAME.txt"

echo "#####" >> "/tmp/$HOSTNAME.txt"
echo "MAC Addresses" >> "/tmp/$HOSTNAME.txt"
cat /sys/class/net/*/address >> "/tmp/$HOSTNAME.txt"
echo "" >> "/tmp/$HOSTNAME.txt"

echo "#####" >> "/tmp/$HOSTNAME.txt"
echo "Number of CPU" >> "/tmp/$HOSTNAME.txt"
lscpu | grep "CPU(s):" >> "/tmp/$HOSTNAME.txt"
lscpu | grep "Model name" >> "/tmp/$HOSTNAME.txt"
echo "" >> "/tmp/$HOSTNAME.txt"

echo "#####" >> "/tmp/$HOSTNAME.txt"
echo "Memory" >> "/tmp/$HOSTNAME.txt"
free -h >> "/tmp/$HOSTNAME.txt"
echo "" >> "/tmp/$HOSTNAME.txt"
```


This step shows the host facts script being copied into a Git repository, staged, committed, and pushed to the remote repository. The process confirms correct file placement, version control usage, and successful synchronization with the remote GitLab repository. a

```
egarrido@dev-app-eg3:~/eg3$ git clone https://gitlab.com:edwardgarrido3066/egarrido_host_facts.git
Cloning into 'egarrido_host_facts' ...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.
[egarrido@dev-app-eg3 ~]$ cd egarrido_host_facts
[egarrido@dev-app-eg3 egarrido_host_facts]$ cp ~/script/egarrido_host_facts.sh
cp: missing destination file operand after '/home/egarrido/script/egarrido_host_facts.sh'
Try 'cp --help' for more information.
[egarrido@dev-app-eg3 egarrido_host_facts]$ cp ~/scripts/egarrido_host_facts.sh
cp: missing destination file operand after '/home/egarrido/scripts/egarrido_host_facts.sh'
Try 'cp --help' for more information.
[egarrido@dev-app-eg3 egarrido_host_facts]$ sudo cp ~/scripts/egarrido_host_facts.sh
cp: missing destination file operand after '/home/egarrido/scripts/egarrido_host_facts.sh'
Try 'cp --help' for more information.
[egarrido@dev-app-eg3 egarrido_host_facts]$ cp ~/scripts/egarrido_host_facts.sh .
[egarrido@dev-app-eg3 egarrido_host_facts]$ git add egarrido_host_facts.sh
[egarrido@dev-app-eg3 egarrido_host_facts]$ git commit -m "Add egarrido_host_facts.sh"
[main def33e1] Add egarrido_host_facts.sh
Committer: Edward Garrido <egarrido@dev-app-eg3.procure.prod1>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

1 file changed, 40 insertions(+)
create mode 100755 egarrido_host_facts.sh
[egarrido@dev-app-eg3 egarrido_host_facts]$ git push origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 601 bytes | 150.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To gitlab.com:edwardgarrido3066/egarrido_host_facts.git
 d484540..def33e1  main -> main
[egarrido@dev-app-eg3 egarrido_host_facts]$
```

This step verifies that the host facts script was successfully committed and pushed to the remote repository. After resolving command syntax errors, the Git commit history was reviewed using `git log --oneline`, confirming the latest commit (Add `egarrido_host_facts.sh`) is present on both the local and remote main branch.

```
egarrido@dev-app-eg3:~/egarrido$ cp ~/scripts/egarrido_host_facts.sh /home/egarrido/script/egarrido_host_facts.sh
cp: missing destination file operand after '/home/egarrido/script/egarrido_host_facts.sh'
Try 'cp --help' for more information.
[egarrido@dev-app-eg3 egarrido_host_facts]$ cp ~/scripts/egarrido_host_facts.sh /home/egarrido/scripts/egarrido_host_facts.sh
cp: missing destination file operand after '/home/egarrido/scripts/egarrido_host_facts.sh'
Try 'cp --help' for more information.
[egarrido@dev-app-eg3 egarrido_host_facts]$ sudo cp ~/scripts/egarrido_host_facts.sh /home/egarrido/scripts/egarrido_host_facts.sh
cp: missing destination file operand after '/home/egarrido/scripts/egarrido_host_facts.sh'
Try 'cp --help' for more information.
[egarrido@dev-app-eg3 egarrido_host_facts]$ cp ~/scripts/egarrido_host_facts.sh .
[egarrido@dev-app-eg3 egarrido_host_facts]$ git add egarrido_host_facts.sh
[egarrido@dev-app-eg3 egarrido_host_facts]$ git commit -m "Add egarrido_host_facts.sh"
[main def33e1] Add egarrido_host_facts.sh
Committer: Edward Garrido <egarrido@dev-app-eg3.procore.prod1>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

1 file changed, 40 insertions(+)
create mode 100755 egarrido_host_facts.sh
[egarrido@dev-app-eg3 egarrido_host_facts]$ git push origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 601 bytes | 150.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To gitlab.com:edwardgarrido3066/egarrido_host_facts.git
   d484540..def33e1  main -> main
[egarrido@dev-app-eg3 egarrido_host_facts]$ git log --oneline -n 3
fatal: unrecognized argument: --oneline
[egarrido@dev-app-eg3 egarrido_host_facts]$ sudo git log --oneline -n 3
[sudo] password for egarrido:
fatal: unrecognized argument: --oneline
[egarrido@dev-app-eg3 egarrido_host_facts]$ sudo git log --oneline -n 3
def33e1 (HEAD -> main, origin/main, origin/HEAD) Add egarrido_host_facts.sh
d484540 Initial commit
[egarrido@dev-app-eg3 egarrido_host_facts]$
```

Summary

This project focuses on developing and managing a Bash-based host facts collection script in a Linux environment. The script gathers essential system information such as hostname, IP and MAC addresses, CPU details, and memory usage, and writes the output to a host-specific file for easy identification and review.

The workflow demonstrates practical system administration skills, including working with file ownership and permissions, safely renaming and managing scripts, and validating script behavior through direct inspection. The project also incorporates version control best practices by staging, committing, and pushing changes to a remote Git repository, followed by verification of the commit history.

Overall, this project highlights foundational Linux administration, scripting, and Git skills through an end-to-end, real-world workflow suitable for automation and troubleshooting tasks.