

## Host Facts Collection Automation

This repository demonstrates a structured approach to collecting and standardizing Linux host system information using shell scripting and centralized source control. The solution is designed to generate consistent, readable system reports across multiple servers for operational visibility, auditing, and troubleshooting.

A centralized collection of executable `host_facts` scripts is maintained in version control and deployed to target systems. Each script gathers key system details—including hostname, network configuration, CPU and memory resources, and virtualization metadata—and writes the output to a host-specific file in `/tmp`.

Scripts are executed with appropriate privilege escalation to ensure access to system-level information. After execution, generated reports are manually verified to confirm accuracy and consistency across environments, demonstrating reliable data collection and repeatable results.

A collection of executable shell scripts used to gather host-level system facts across multiple servers. Each script is named per host and designed to standardize system information collection for auditing, troubleshooting, and operational visibility, with consistent permissions and ownership enforced.

```
egarrido@dev-performance: ~$ ls -la /usr/local/bin/ | grep host_facts
-rwxr-xr-x. 1 root root 1238 Sep 22 15:11 erickgiron_host_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:11 fasemota_host_facts.sh
-rwxr-xr-x. 1 root root 1266 Sep 22 15:11 fcuffee_host_facts.sh
-rwxr-xr-x. 1 root root 1268 Sep 22 15:11 fetohwo_host_facts.sh
-rwxr-xr-x. 1 root root 1234 Sep 22 15:11 ffotabe_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:11 fholdbrook_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:11 fmolokwu_host_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:11 foni_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:11 fpulla_host_facts.sh
-rwxr-xr-x. 1 root root 1203 Sep 22 15:11 ggoguen_host_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:11 gilbert-pena22_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:11 gkiarie_facts.sh
-rwxr-xr-x. 1 root root 1203 Sep 22 15:11 gmichals_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:11 groussseau_host_facts.sh
-rwxr-xr-x. 1 root root 1236 Sep 22 15:11 gsikalos_host_facts.sh
-rwxr-xr-x. 1 root root 1203 Sep 22 15:11 gthelusma_host_facts.sh
-rwxr-xr-x. 1 root root 1267 Sep 22 15:11 gyeboah_host_facts.sh
-rwxr-xr-x. 1 root root 1202 Sep 22 15:11 haugustin_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:11 hbeaubrun_host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:11 hdiohore_host_facts.sh
-rwxr-xr-x. 1 root root 1209 Sep 22 15:11 hisaac_host_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:11 hjoseph_host_facts.sh
-rwxr-xr-x. 1 root root 1208 Sep 22 15:11 hkabir_hosts_facts.sh
-rwxr-xr-x. 1 root root 1203 Sep 22 15:11 hleung_host_facts.sh
-rwxr-xr-x. 1 root root 1237 Sep 22 15:11 host_fact_mpowell.sh
-rwxr-xr-x. 1 root root 1237 Sep 22 15:11 host_facts_erice.sh
-rwxr-xr-x. 1 root root 1205 Sep 22 15:11 host_fact.sh_DoNotDelete
-rwxr-xr-x. 1 root root 1237 Sep 22 15:11 host_facts_mpowell.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:11 host_facts_ppowell.sh
-rwxr-xr-x. 1 root root 1207 Sep 22 15:11 host_facts.sh
-rwxr-xr-x. 1 root root 1238 Sep 22 15:11 host_facts_ttchabert.sh
```

A host facts report was generated and reviewed, capturing key system details including hostname, IP and MAC addresses, CPU configuration, memory usage, and virtualization metadata. This output provides a standardized snapshot of system state for inventory, auditing, and troubleshooting purposes.

```
[egarrido@dev-app-eg3 tmp]$ cat dev-app-eg3.procore.prod1.txt
#####
Hostname
dev-app-eg3.procore.prod1

#####
IP Addresses
  inet 127.0.0.1/8 scope host lo
  inet6 ::1/128 scope host
  inet 10.1.31.124/32 scope global noprefixroute ens192
  inet6 fe80::de0:3d16:8298:756/64 scope link noprefixroute

#####
MAC Addresses
00:50:56:8b:d4:ac
00:00:00:00:00:00

#####
Number of CPU
CPU(s): 1
NUMA node0 CPU(s): 0
Model name: Intel(R) Xeon(R) CPU E5-2650 0 @ 2.00GHz

#####
Memory
      total        used        free      shared  buff/cache   available
Mem:    764Mi      391Mi      124Mi       3.0Mi       380Mi       373Mi
Swap:    1.9Gi       10Mi       1.9Gi

#####
Manufactuer && Serial Number
  Manufacturer: VMware, Inc.
  Serial Number: VMware-42 0b 28 85 9d 40 0f 0f-95 2b a5 6f d0 c4 8a d6

[egarrido@dev-app-eg3 tmp]$
```

The /tmp directory was reviewed to verify the presence of generated host fact output files alongside standard system and service runtime artifacts. The host-specific report file was successfully created and stored, confirming proper data collection and output handling during host facts gathering.

```
egarrido@dev-performance-eg3 scripts]$ cd..
-bash: cd..: command not found
[egarrido@dev-performance-eg3 scripts]$ cd /tmp
[egarrido@dev-performance-eg3 tmp]$ ll
total 20
-rw-r--r--. 1 egarrido egarrido 926 Sep 22 15:17 dev-performance-eg3.procore.prod1.txt
drwx----- 2 root root 20 Sep 21 12:18 krbcc427qq1pa
drwx----- 2 root root 20 Sep 21 12:16 krbcc7kvilidb
drwx----- 2 root root 20 Sep 21 11:38 krbcc8lf6dv8d
drwx----- 2 root root 20 Sep 21 12:46 krbccfp79gap_
drwx----- 3 root root 17 Sep 21 16:41 systemd-private-2fd7c5a53f4f4a218582b88e2d427ae5-chr
onyd.service-ptTZA2
drwx----- 3 root root 17 Sep 21 16:41 systemd-private-2fd7c5a53f4f4a218582b88e2d427ae5-dbu
s-broker.service-560M14
drwx----- 3 root root 17 Sep 21 16:41 systemd-private-2fd7c5a53f4f4a218582b88e2d427ae5-htt
pd.service-9DqSLi
drwx----- 3 root root 17 Sep 21 16:41 systemd-private-2fd7c5a53f4f4a218582b88e2d427ae5-kdu
mp.service-a3Mj8e
drwx----- 3 root root 17 Sep 21 16:41 systemd-private-2fd7c5a53f4f4a218582b88e2d427ae5-sys
temd-logind.service-pqV6sa
-rw-r--r--. 1 root root 863 Sep 21 12:18 tmp2sa3d5j8
-rw----- 1 root root 0 Sep 21 12:18 tmp2sa3d5j8.ipabkp
-rw-r--r--. 1 root root 863 Sep 21 12:46 tmpd20r0pdr
-rw----- 1 root root 0 Sep 21 12:46 tmpd20r0pdr.ipabkp
-rw-r--r--. 1 root root 863 Sep 21 11:38 tmpprgcb0ovk
-rw----- 1 root root 0 Sep 21 11:38 tmpprgcb0ovk.ipabkp
-rw-r--r--. 1 root root 863 Sep 21 12:16 tmppwfkcg1rj
-rw----- 1 root root 0 Sep 21 12:16 tmppwfkcg1rj.ipabkp
drwx----- 2 root root 6 Sep 21 10:45 vmware-root_866-2722763301
drwx----- 2 root root 6 Sep 21 14:52 vmware-root_884-2688554034
drwx----- 2 root root 6 Sep 20 21:01 vmware-root_915-4022177651
[egarrido@dev-performance-eg3 tmp]$
```

A host facts report was generated for the performance environment, capturing network configuration, hardware details, memory usage, and virtualization metadata. This confirms consistent and repeatable system information collection across environments for auditing and operational visibility.

```
egarrido@dev-performance-4 X + v
dev-performance-eg3.procure.prod1

#####
IP Addresses
  inet 127.0.0.1/8 scope host lo
  inet6 ::1/128 scope host
  inet 10.1.31.135/23 brd 10.1.31.255 scope global noprefixroute ens192
  inet6 fe80::4f24:3568:5f56:3834/64 scope link noprefixroute

#####
MAC Addresses
00:50:56:8b:7b:00
00:00:00:00:00:00

#####
Number of CPU
CPU(s): 1
NUMA node0 CPU(s): 0
Model name: Intel(R) Xeon(R) CPU E5-2650 0 @ 2.00GHz

#####
Memory
      total      used      free      shared  buff/cache   available
Mem:    764Mi    420Mi    140Mi      3.0Mi     331Mi     344Mi
Swap:   1.8Gi     1.0Mi    1.8Gi

#####
Manufactuer && Serial Number
  Manufacturer: VMware, Inc.
  Serial Number: VMware-42 0b 96 26 71 c8 48 b3-59 b9 2a 1a d6 c8 54 e1

[egarrido@dev-performance-eg3 tmp]$
```



A GitLab repository was cloned onto the target host using HTTPS authentication. An initial authentication failure was resolved by using valid credentials, after which the repository cloned successfully, confirming access and proper source control integration on the system.

```
egarrido@dev-app-eg3:~$ sudo git clone https://gitlab.com/procoreplusmd/scripts.git
[sudo] password for egarrido:
Sorry, try again.
[sudo] password for egarrido:
Cloning into 'scripts' ...
Username for 'https://gitlab.com': egarrido3066
Password for 'https://egarrido3066@gitlab.com':
remote: HTTP Basic: Access denied. If a password was provided for Git authentication, the password was incorrect or you're required to use a token instead of a password. If a token was provided, it was either incorrect, expired, or improperly scoped. See https://gitlab.com/help/topics/git/troubleshooting_git.md#error-on-git-fetch-http-basic-access-denied
fatal: Authentication failed for 'https://gitlab.com/procoreplusmd/scripts.git/'
egarrido@dev-app-eg3 ~]$ sudo git clone https://gitlab.com/procoreplusmd/scripts.git
Cloning into 'scripts' ...
Username for 'https://gitlab.com': edwardgarrido3066
Password for 'https://edwardgarrido3066@gitlab.com':
remote: Enumerating objects: 1393, done.
remote: Counting objects: 100% (209/209), done.
remote: Compressing objects: 100% (208/208), done.
remote: Total 1393 (delta 112), reused 0 (delta 0), pack-reused 1184 (from 1)
Receiving objects: 100% (1393/1393), 11.56 MiB | 14.01 MiB/s, done.
Resolving deltas: 100% (634/634), done.
egarrido@dev-app-eg3 ~]$
```

A centralized collection of executable host facts scripts was deployed on the system, with standardized naming and permissions. These scripts are designed to gather consistent system information per host, supporting automated inventory, auditing, and troubleshooting across the environment.

```
egarrido@dev-app-eg3:~/scr
```

-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	grousseau_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	1207	Sep 22 15:29	host_facts.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

The `host_facts.sh` script was executed successfully with elevated privileges, generating a host-specific system facts report in `/tmp`. The output file confirms proper script execution and successful collection of system information.

```
egarrido@dev-app-eg3/tmp X + v
[egarrido@dev-app-eg3 scripts]$ ./host_facts.sh
[sudo] password for egarrido:
[egarrido@dev-app-eg3 scripts]$ cd /tmp
[egarrido@dev-app-eg3 tmp]$ ll
total 16
-rw-r--r--. 1 egarrido egarrido 900 Sep 22 15:40 dev-app-eg3.procore.prod1.txt
drwx----- 2 root root 20 Sep 21 12:59 krbcc49n_cbyi
drwx----- 2 root root 20 Sep 21 10:54 krbccfrtj1l7f
drwx----- 2 root root 20 Sep 21 10:59 krbccgs_pmfr
drwx----- 3 root root 17 Sep 21 13:00 systemd-private-aa22ae9d7fde403d94f62965264a4f11-chr
onyd.service-qQZiGp
drwx----- 3 root root 17 Sep 21 10:44 systemd-private-aa22ae9d7fde403d94f62965264a4f11-dbu
s-broker.service-wV42N0
drwx----- 3 root root 17 Sep 21 10:44 systemd-private-aa22ae9d7fde403d94f62965264a4f11-kdu
mp.service-oU7SR4
drwx----- 3 root root 17 Sep 21 10:44 systemd-private-aa22ae9d7fde403d94f62965264a4f11-sys
temd-logind.service-6zSs8U
-rw-r--r--. 1 root root 855 Sep 21 10:54 tmpc8_qdzjw
-rw----- 1 root root 0 Sep 21 10:54 tmpc8_qdzjw.ipabkp
-rw-r--r--. 1 root root 855 Sep 21 10:59 tmpxa1qb1z4
-rw----- 1 root root 0 Sep 21 10:59 tmpxa1qb1z4.ipabkp
-rw-r--r--. 1 root root 855 Sep 21 12:59 tmpyknnm85a
-rw----- 1 root root 0 Sep 21 12:58 tmpyknnm85a.ipabkp
drwx----- 2 root root 6 Sep 21 10:44 vmware-root_836-2722107930
drwx----- 2 root root 6 Sep 20 23:55 vmware-root_879-4013723248
[egarrido@dev-app-eg3 tmp]$
```



The generated host facts file was reviewed and confirmed to contain accurate system details, including hostname, network configuration, CPU and memory information, and virtualization metadata, validating successful data collection by the host facts script.

```
[egarrido@dev-app-eg3 tmp]$ cat dev-app-eg3.procore.prod1.txt
#####
Hostname
dev-app-eg3.procore.prod1

#####
IP Addresses
  inet 127.0.0.1/8 scope host lo
  inet6 ::1/128 scope host
  inet 10.1.31.124/32 scope global noprefixroute ens192
  inet6 fe80::de0:3d16:8298:756/64 scope link noprefixroute

#####
MAC Addresses
00:50:56:8b:d4:ac
00:00:00:00:00:00

#####
Number of CPU
CPU(s): 1
NUMA node0 CPU(s): 0
Model name: Intel(R) Xeon(R) CPU E5-2650 0 @ 2.00GHz

#####
Memory


|       | total | used  | free  | shared | buff/cache | available |
|-------|-------|-------|-------|--------|------------|-----------|
| Mem:  | 764Mi | 391Mi | 124Mi | 3.0Mi  | 380Mi      | 373Mi     |
| Swap: | 1.9Gi | 10Mi  | 1.9Gi |        |            |           |



#####
Manufactuer && Serial Number
  Manufacturer: VMware, Inc.
  Serial Number: VMware-42 0b 28 85 9d 40 0f 0f-95 2b a5 6f d0 c4 8a d6

[egarrido@dev-app-eg3 tmp]$
```

## Summary

This project automates the collection of Linux host system information using standardized shell scripts. Each script gathers key details such as hostname, network configuration, CPU, memory, and virtualization data, and outputs a host-specific report for auditing, troubleshooting, and operational visibility