

| Ownership & Permissions       |                          |
|-------------------------------|--------------------------|
| Command                       | Purpose                  |
| <code>ls -l</code>            | View permissions         |
| <code>stat FILE</code>        | Detailed file info       |
| <code>chmod MODE FILE</code>  | Change permissions       |
| <code>chown USER FILE</code>  | Change owner             |
| <code>chgrp GROUP FILE</code> | Change group             |
| <code>umask</code>            | View default permissions |
| <code>umask 022</code>        | Set default permissions  |

| Common Permission Values |                      |
|--------------------------|----------------------|
| 600                      | Owner RW             |
| 644                      | Owner RW, Others R   |
| 700                      | Owner RWX            |
| 755                      | Owner RWX, Others RX |
| 777                      | Everyone RWX (Avoid) |

| ACL (Access Control Lists)              |                 |
|-----------------------------------------|-----------------|
| Command                                 | Purpose         |
| <code>getfacl FILE</code>               | View ACL        |
| <code>setfacl -m u:USER:rwX FILE</code> | Add ACL         |
| <code>setfacl -x u:USER FILE</code>     | Remove ACL      |
| <code>setfacl -b FILE</code>            | Remove all ACLs |

| Attributes                  |                  |
|-----------------------------|------------------|
| Command                     | Purpose          |
| <code>lsattr</code>         | View attributes  |
| <code>chattr +i FILE</code> | Immutable        |
| <code>chattr -i FILE</code> | Remove immutable |
| <code>chattr +a FILE</code> | Append only      |

| Reference Box                                                                                                                                                         |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| r = Read<br>w = Write<br>x = Execute<br>4 = Read<br>2 = Write<br>1 = Execute<br>-----<br>SUID = Run as Owner<br>SGID = Run as Group<br>Sticky = Only Owner Can Delete |  |

| SUID / SGID                     |                 |
|---------------------------------|-----------------|
| Command                         | Purpose         |
| <code>find / -perm -4000</code> | Find SUID files |
| <code>find / -perm -2000</code> | Find SGID files |
| <code>chmod u-s FILE</code>     | Remove SUID     |
| <code>chmod g-s FILE</code>     | Remove SGID     |

| Sticky Bit                |                   |
|---------------------------|-------------------|
| Command                   | Purpose           |
| <code>chmod +t DIR</code> | Set Sticky Bit    |
| <code>chmod -t DIR</code> | Remove Sticky Bit |

| Security Checklist                                                                                                                                    |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Least Privilege<br>Avoid chmod 777<br>Secure ~/.ssh (700)<br>Secure private keys (600)<br>Protect /etc/shadow<br>Audit SUID files<br>Review ownership |  |

