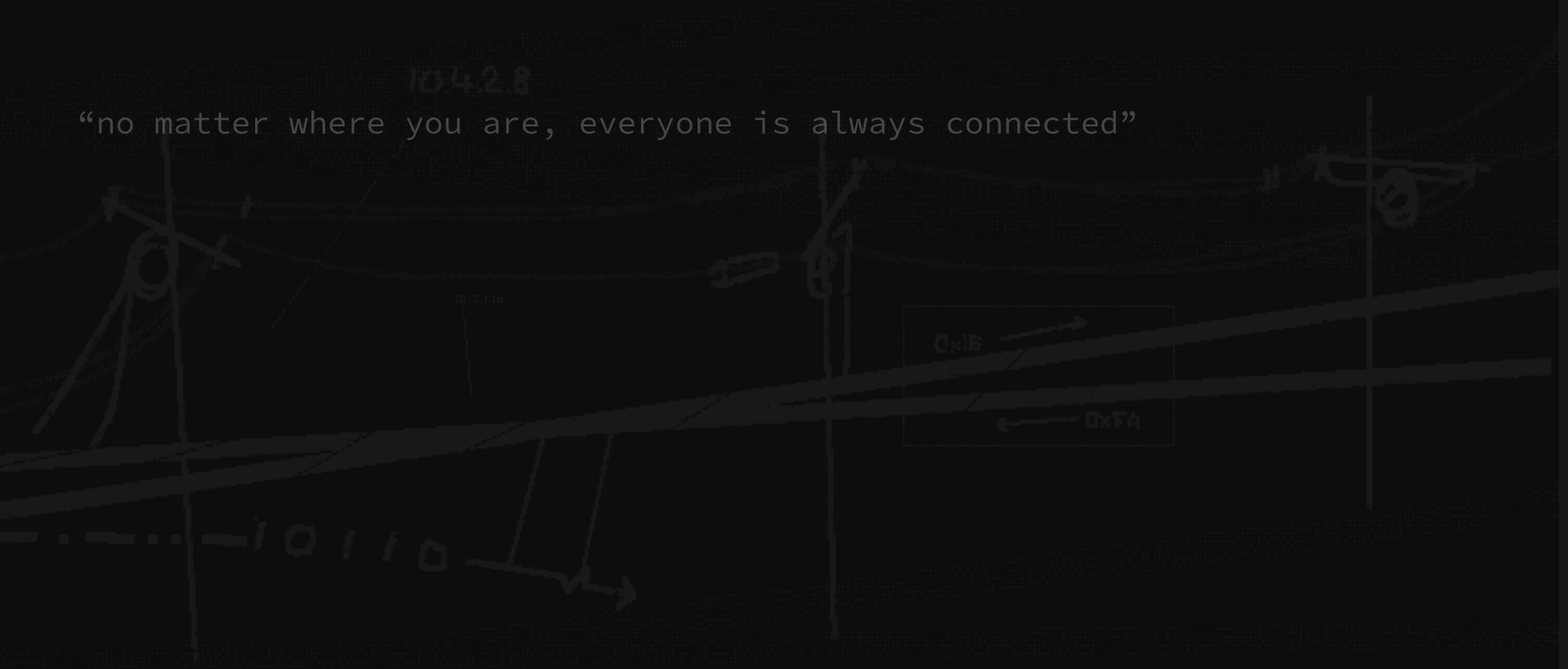
“no matter where you are, everyone is always connected”

04



Users and Groups

Users on Linux

Linux has *system* users and *regular* users
- System users aren't users that log in, rather are used by programs to do system functions
- Regular users are users that log in.

Each user on a system typically have the following:
- A username and User ID (UID)
- A password
- A primary group and Group ID (GID)
- Associated secondary groups the user is part of
- A home directory
- A preferred login shell

Adding and Removing Users

in terminal

```
# useradd alan

# userdel alan
```

The following commands are used to add and remove a user to the system. Here, we add and remove the user *alan* to the system.

Grouping People Together

in terminal

```
# groupadd people

# groupadd people
```

The following commands can be used to add and remove groups to the system.

You may be asked to add and remove groups *or* to add and remove users to and from groups.

The /etc/ Triad

Three files on the system, the *group*, *passwd*, and *shadow* files, hold special information about users.

/etc/group defines user and user groups

/etc/passwd defines UIDs, GIDs, shells, and home directories

/etc/shadow defines user password hashes

The *group* File

in file */etc/group*

```
people:x:2000:alan,sebastian,james
```

group name | *GID* | *group members*

We are looking at an example group entry in /etc/group.

Take a look at the format of the file. Notice the group name, GID, and the group users are all in one line.

Adding and Removing Users to Groups

in terminal

```
# gpasswd --add alan people
# gpasswd --delete alan people

# usermod --append -G people alan
# usermod --remove -G people alan
```

You may edit the users in a group directly through the /etc/group file.

However, you may also do this through commands. Here are two different methods to add user *alan* to group *people*.

The *passwd* File

in file */etc/passwd*

```
alan:x:1020:1020::/home/alan:/bin/bash
```

user name | *UID* | *GID* | *home directory* | *login shell*

We are looking at an example user entry in /etc/passwd.

Again, take note of the format and see what information is stored in the file for each user.

The *shadow* File

in file */etc/passwd*

```
alan:$6$aaabbb ... yyyzzz:14090:10:99999:7:::
```

user name	*password hash*	*last change date*	*min*	*max*	*warn*

We are looking at an example user entry in /etc/shadow.

Note the presence of the encrypted password hash. This is critical information that must be secured.

Changing Ones Password

in terminal

```
# passwd alan
```

This command allows you to change someones password.

Insecure passwords are
- Short (<10 chars)
- Simple (only lowercase… etc.)
- Easily guessable (all words… etc.)

Login Defaults

in file */etc/login.defs*

```
PASS_MAX_DAYS        90
PASS_MIN_DAYS        7
PASS_WARN_AGE        15

ENCRYPT_METHOD       SHA512
#MD5_CRYPT_ENAB      NO

SYS_UID_MIN          100
SYS_UID_MAX          999
UID_MIN              1000
UID_MAX              60000
```

The *login.defs* file can be used to set default settings for new users. Here are some important configurations.

Login Defaults

in file */etc/login.defs*

```
SYS_GID_MIN             100
SYS_GID_MAX             999
GID_MIN                 1000
GID_MAX                 60000
```

The *login.defs* file can be used to set default settings for new users. Here are some important configurations.

Recap

You should know how to add and remove users and groups, and how to add and remove users to/from groups:

- useradd
- userdel
- groupadd
- groupdel
- groupmod

You should be familiar with auditing user configuration files:

/etc/shadow /etc/passwd /etc/group /etc/login.defs

You should be able to change a user’s password.