

Understanding /etc/passwd File Format

Can you explain **/etc/passwd** file format for Linux and UNIX operating systems?

The diagram illustrates the /etc/passwd file format for the 'oracle' user. The line of text is: `oracle:x:1021:1020:Oracle user:/data/network/oracle:/bin/bash`. Below this line, seven arrows point down to numbers 1 through 7, indicating the fields: 1. Username (oracle), 2. Password (x), 3. User ID (1021), 4. Group ID (1020), 5. User ID Info (Oracle user), 6. Home directory (/data/network/oracle), and 7. Command/shell (/bin/bash).

(Fig.01: /etc/passwd file format – click to enlarge)

1. **Username:** It is used when user logs in. It should be between 1 and 32 characters in length.
2. **Password:** An x character indicates that encrypted password is stored in /etc/shadow file.
3. **User ID (UID):** Each user must be assigned a user ID (UID). UID 0 (zero) is reserved for root and UIDs 1-99 are reserved for other predefined accounts. Further UID 100-999 are reserved by system for administrative and system accounts/groups.
4. **Group ID (GID):** The primary group ID (stored in /etc/group file)
5. **User ID Info:** The comment field. It allow you to add extra information about the users such as user's full name, phone number etc. This field use by finger command.
6. **Home directory:** The absolute path to the directory the user will be in when they log in. If this directory does not exists then users directory becomes /
7. **Command/shell:** The absolute path of a command or shell (/bin/bash). Typically, this is a shell. Please note that it does not have to be a shell.