1. The 1 , 5 and 6 at the start of the encrypted password tells us what kind of encryptions used for the given password.
    1. 6 - sha512crypt
    2. 1 - md5crypt
    3. 5 - sha256crypt

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2. Solved passwords

Encrypted Value	Username	Password
mininet:$1$5Eoezy7I$.VJenqu1p0dV5Mz9dgMUl1:18669:0:99999:7:::	mininet	abc123
mininet:1g71DCBTA$s/cam3SJH7durom75TQsg1:18669:0:99999:7:::	mininet	abc123
mininet:1xyz$QGRT6EC68PAevKfQTrH.R.:18669:0:99999:7:::	mininet	123
mininet: 5xyz$ehTgzoqZJoYafQ3t4TtYVEGoQY4SVGt1mdTO.50RTg8:18669:0:99999: 7:::	mininet	abc123
mininet:5xyz$U0/kksFZb83yCu3nlyb7MxpNfcgzCyjJ1FVpsfRFm/ 3:18669:0:99999:7:::	mininet	123
mininet:6xyz$73Q3Z.l5kN5BNAGMmP5IKozhqw3Zhj8bqQuJy3.Wf44.I3/ nkSnzPMeX6rozvFiDHgi2Dlt/BOc/lt14/2PH91:18669:0:99999:7:::	mininet	123
mininet: 6ef1sghnYWVUtOQbY$kDSOb6NBTLtGnvMOQNrFOuVhP5OKg.wlenPx6wm XtVQl0dlmsL29Qc7nh3eM3ptyLXr6YxirYmER8GQVwkBMH.:18669:0:99999:7:::	mininet	abc123
mininet:6ZC73DXWZVvXkBLm/ $G7aNXdZ1yMUV5.CutZMislgYeapymRWDBVXXrexAoqWMK4qJMTdIKirLeslb G0UblQvn7YO7wTvtT65YstpLB.:18669:0:99999:7:::	mininet	mininet

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3. I used Hashcat for decrypting the passwords. This software guesses the password, hashes it and then compares the hashes. If the hashes match then the password is found else we continue searching. The software has various attack modes like dictionary attack, masking attack, combinator attack, etc. It does not detect the type of hashing on its own, we need to specify it in the command.

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4. A good password should be something that is easy for us to remember. Should contains a mixture of lowercase and uppercase letters. Should also contain special characters and numeric values. The length of the password should be at least 12 characters long or more. If using words that can be found in dictionary then change a few characters in the middle to special characters.

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