

NetComm - hardcoded default password: 1a2b3c4d5e

LinkSys Cisco - open wifi network by default. When the user tries to access the admin console it shows a warning message and asks the user to set a password.

Netgear 6200 - unique 14-character long password: festiveship971

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 6 wpaHandshake.hccapx finalWordListNetGear.dict ?d?d?d
hashcat (v5.1.0) starting...
```

Estimate 50 minutes

```
Session.....: hashcat
Status.....: Running
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started...: Tue May 11 21:33:28 2021 (4 mins, 42 secs)
Time.Estimated...: Tue May 11 22:28:55 2021 (50 mins, 45 secs)
Guess.Base.....: File (finalWordListNetGear.dict), Left Side
Guess.Mod.....: Mask (?d?d?d) [3], Right Side
Guess.Queue.Base.: 1/1 (100.00%)
Guess.Queue.Mod..: 1/1 (100.00%)
Speed.#2.....: 823.5 kH/s (44.46ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#3.....: 814.2 kH/s (45.03ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#4.....: 822.7 kH/s (44.36ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#5.....: 824.2 kH/s (44.34ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#*.....: 3284.6 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 922484736/10926977000 (8.44%)
Rejected.....: 0/922484736 (0.00%)
Restore.Point...: 0/10926977 (0.00%)
Restore.Sub.#2...: Salt:0 Amplifier:196-197 Iteration:2816-2944
Restore.Sub.#3...: Salt:0 Amplifier:194-195 Iteration:2048-2176
Restore.Sub.#4...: Salt:0 Amplifier:196-197 Iteration:2432-2560
Restore.Sub.#5...: Salt:0 Amplifier:196-197 Iteration:0-1
Candidates.#2...: frequentceleriac590 -> imperfecttarpaulin590
Candidates.#3...: disgustedhorsecar971 -> frequentcelecoxib971
Candidates.#4...: broadquartzite590 -> disgustedhorsebox590
Candidates.#5...: abaftaa590 -> broadquartz590
Hardware.Mon.#2..: Temp: 81c Fan: 62% Util:100% Core:1620MHz Mem:6500MHz Bus:16
Hardware.Mon.#3..: Temp: 82c Fan: 63% Util: 99% Core:1605MHz Mem:6500MHz Bus:16
Hardware.Mon.#4..: Temp: 78c Fan: 57% Util: 99% Core:1605MHz Mem:6500MHz Bus:16
Hardware.Mon.#5..: Temp: 77c Fan: 57% Util:100% Core:1605MHz Mem:6500MHz Bus:16
```

Actual: 4 minutes

```

61276bd8171d4724bb46c49a7c686111:c0c1c089890f:145f94c4ecc8:Cisco05683:festiveship971
Session.....: hashcat
Status.....: Cracked
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target.....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started.....: Tue May 11 21:33:28 2021 (4 mins, 43 secs)
Time.Estimated...: Tue May 11 21:38:11 2021 (0 secs)
Guess.Base.....: File (finalWordListNetGear.dict), Left Side
Guess.Mod.....: Mask (?d?d?d) [3], Right Side
Guess.Queue.Base.: 1/1 (100.00%)
Guess.Queue.Mod..: 1/1 (100.00%)
Speed.#2.....: 823.5 kH/s (44.46ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#3.....: 814.2 kH/s (45.03ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#4.....: 822.7 kH/s (44.35ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#5.....: 824.2 kH/s (44.34ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.*.....: 3284.6 kH/s
Recovered.....: 1/1 (100.00%) Digests, 1/1 (100.00%) Salts
Progress.....: 927203328/10926977000 (8.49%)
Rejected.....: 0/927203328 (0.00%)
Restore.Point...: 0/10926977 (0.00%)
Restore.Sub.#2...: Salt:0 Amplifier:197-198 Iteration:0-1
Restore.Sub.#3...: Salt:0 Amplifier:194-195 Iteration:0-1
Restore.Sub.#4...: Salt:0 Amplifier:197-198 Iteration:0-1
Restore.Sub.#5...: Salt:0 Amplifier:197-198 Iteration:0-1
Candidates.#2...: frequentcleriac831 -> imperfecttarpaulin831
Candidates.#3...: disgustedhorsecar971 -> frequentcelecoxib971
Candidates.#4...: broadquartzite831 -> disgustedhorsebox831
Candidates.#5...: abaftaa831 -> broadquartz831
Hardware.Mon.#2...: Temp: 81c Fan: 62% Util:100% Core:1635MHz Mem:6500MHz Bus:16
Hardware.Mon.#3...: Temp: 80c Fan: 63% Util:100% Core:1785MHz Mem:6500MHz Bus:16
Hardware.Mon.#4...: Temp: 76c Fan: 57% Util: 87% Core:1725MHz Mem:6500MHz Bus:16
Hardware.Mon.#5...: Temp: 76c Fan: 57% Util: 98% Core:1725MHz Mem:6500MHz Bus:16
Started: Tue May 11 21:32:44 2021
Stopped: Tue May 11 21:38:12 2021

```

Asus AX6600 XT8: [0-9]{8}

Took 38 seconds to exhaust keyspace

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx ?d?d?d?d?d?d?d?d?d
hashcat (v5.1.0) starting...

* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
  You can use --force to override, but do not report related errors.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.

OpenCL Platform #2: NVIDIA Corporation
=====
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU

Session.....: hashcat
Status.....: Exhausted
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target.....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started.....: Tue May 11 21:52:52 2021 (38 secs)
Time.Estimated...: Tue May 11 21:53:30 2021 (0 secs)
Guess.Mask.....: ?d?d?d?d?d?d?d?d [8]
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 853.9 kH/s (75.39ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#3.....: 853.8 kH/s (75.24ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#4.....: 856.0 kH/s (74.86ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#5.....: 868.7 kH/s (84.91ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.*.....: 3432.4 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 100000000/100000000 (100.00%)
Rejected.....: 0/100000000 (0.00%)
Restore.Point....: 5898240/10000000 (58.98%)
Restore.Sub.#2...: Salt:0 Amplifier:9-10 Iteration:0-1
Restore.Sub.#3...: Salt:0 Amplifier:9-10 Iteration:0-1
Restore.Sub.#4...: Salt:0 Amplifier:9-10 Iteration:0-1
Restore.Sub.#5...: Salt:0 Amplifier:9-10 Iteration:0-1
Candidates.#2....: 62809576 -> 67646497
Candidates.#3....: 62116046 -> 67462648
Candidates.#4....: 62740647 -> 67116046
Candidates.#5....: 68806651 -> 67786485
Hardware.Mon.#2..: Temp: 73c Fan: 47% Util:100% Core:1650MHz Mem:6500MHz Bus:16
Hardware.Mon.#3..: Temp: 62c Fan: 43% Util: 0% Core:1440MHz Mem:6500MHz Bus:16
Hardware.Mon.#4..: Temp: 56c Fan: 34% Util: 0% Core:1440MHz Mem:6500MHz Bus:16
Hardware.Mon.#5..: Temp: 57c Fan: 35% Util: 0% Core:1440MHz Mem:6500MHz Bus:16
Started: Tue May 11 21:52:24 2021
Stopped: Tue May 11 21:53:31 2021
```

Orange-XXXX - [2345679ACEF]{8}

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx -1 2345679ACEF ?1?1?1?1?1?1?1?1
hashcat (v5.1.0) starting...

* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
  You can use --force to override, but do not report related errors.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.

OpenCL Platform #2: NVIDIA Corporation
=====
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
```

Took 75 seconds to exhaust

```
Session.....: hashcat
Status.....: Exhausted
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target.....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started.....: Tue May 11 21:58:12 2021 (1 min, 15 secs)
Time.Estimated....: Tue May 11 21:59:27 2021 (0 secs)
Guess.Mask.....: ?1?1?1?1?1?1?1 [8]
Guess.Charset....: -1 2345679ACEF, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 822.4 kH/s (40.50ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#3.....: 824.1 kH/s (40.80ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#4.....: 829.6 kH/s (40.49ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#5.....: 845.9 kH/s (43.85ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.*.....: 3322.0 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 21435881/21435881 (100.00%)
Rejected.....: 0/21435881 (0.00%)
Restore.Point....: 15335424/19487171 (78.69%)
Restore.Sub.#2...: Salt:0 Amplifier:10-11 Iteration:0-1
Restore.Sub.#3...: Salt:0 Amplifier:10-11 Iteration:0-1
Restore.Sub.#4...: Salt:0 Amplifier:10-11 Iteration:0-1
Restore.Sub.#5...: Salt:0 Amplifier:10-11 Iteration:0-1
Candidates.#2....: E525975F -> EF6E7F7F
Candidates.#3....: E42654CF -> E992395F
Candidates.#4....: E3296AE6 -> E52654CF
Candidates.#5....: EE74CF7A -> E32C42A6
Hardware.Mon.#2..: Temp: 79c Fan: 57% Util: 99% Core:1665MHz Mem:6500MHz Bus:16
Hardware.Mon.#3..: Temp: 67c Fan: 57% Util: 0% Core:1440MHz Mem:6500MHz Bus:16
Hardware.Mon.#4..: Temp: 62c Fan: 49% Util: 0% Core:1440MHz Mem:6500MHz Bus:16
Hardware.Mon.#5..: Temp: 63c Fan: 49% Util: 0% Core:1440MHz Mem:6500MHz Bus:16
Started: Tue May 11 21:57:43 2021
Stopped: Tue May 11 21:59:28 2021
```

VMXXXXXXXX-2G \[abcdefghijklmnopqrstuvwxyz\] Length 8 i and o omitted.

VMXXXXXXXX-5G \[abcdefghijklmnopqrstuvwxyz\] Length 8 i and o omitted.

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx -1 abcdefghijklmnopqrstuvwxyz ?1?1?1?1?1?1?1?1
hashcat (v5.1.0) starting...

* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
  You can use --force to override, but do not report related errors.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.
=====
OpenCL Platform #2: NVIDIA Corporation
=====
## build custom
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
```

Estimate: 9 hours

```
Session.....: hashcat
Status.....: Running
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target.....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started.....: Tue May 11 22:01:19 2021 (1 min, 10 secs)
Time.Estimated...: Wed May 12 07:05:25 2021 (9 hours, 2 mins)
Guess.Mask.....: ?1?1?1?1?1?1?1?1 [8]
Guess.Charset....: -1 abcdefghijklmnopqrstuvwxyz, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 843.6 kH/s (87.80ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#3.....: 835.7 kH/s (88.88ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#4.....: 843.7 kH/s (87.87ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#5.....: 848.9 kH/s (87.52ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.*.....: 3371.9 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 231211008/110075314176 (0.21%)
Rejected.....: 0/231211008 (0.00%)
Restore.Point....: 5898240/4586471424 (0.13%)
Restore.Sub.#2...: Salt:0 Amplifier:1-2 Iteration:2560-2816
Restore.Sub.#3...: Salt:0 Amplifier:1-2 Iteration:512-768
Restore.Sub.#4...: Salt:0 Amplifier:1-2 Iteration:2560-2816
Restore.Sub.#5...: Salt:0 Amplifier:1-2 Iteration:3840-4095
Candidates.#2....: margnuss -> mqxdyfan
Candidates.#3....: marvbger -> mqxvpwer
Candidates.#4....: marancer -> mqxcdcer
Candidates.#5....: marvdsta -> mqxvqsta
Hardware.Mon.#2..: Temp: 80c Fan: 58% Util:100% Core:1635MHz Mem:6500MHz Bus:16
Hardware.Mon.#3..: Temp: 80c Fan: 59% Util:100% Core:1605MHz Mem:6500MHz Bus:16
Hardware.Mon.#4..: Temp: 76c Fan: 52% Util:100% Core:1635MHz Mem:6500MHz Bus:16
Hardware.Mon.#5..: Temp: 76c Fan: 52% Util:100% Core:1635MHz Mem:6500MHz Bus:16
```


SkyXXXXXX: [A-Z]{8}

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx -1 ?u ?l?l?l?l?l?l?l?l
hashcat (v5.1.0) starting...
* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
  You can use --force to override, but do not report related errors.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.

OpenCL Platform #2: NVIDIA Corporation
=====
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
```

Estimate: 17 hours

```
Session.....: hashcat
Status.....: Running
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started...: Tue May 11 22:05:14 2021 (49 secs)
Time.Estimated...: Wed May 12 15:12:32 2021 (17 hours, 6 mins)
Guess.Mask.....: ?l?l?l?l?l?l?l?l [8]
Guess.Charset...: -1 ?u, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 848.3 kH/s (87.41ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#3.....: 840.2 kH/s (88.48ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#4.....: 846.9 kH/s (87.33ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#5.....: 852.6 kH/s (87.12ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.*.....: 3388.0 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 163971072/208827064576 (0.08%)
Rejected.....: 0/163971072 (0.00%)
Restore.Point...: 1179648/8031810176 (0.01%)
Restore.Sub.#2...: Salt:0 Amplifier:9-10 Iteration:1024-1280
Restore.Sub.#3...: Salt:0 Amplifier:8-9 Iteration:3840-4095
Restore.Sub.#4...: Salt:0 Amplifier:9-10 Iteration:768-1024
Restore.Sub.#5...: Salt:0 Amplifier:9-10 Iteration:1792-2048
Candidates.#2...: TSDHVVHAN -> TYMGKTAN
Candidates.#3...: PBLNEZAN -> PDGQMWAN
Candidates.#4...: TTUKKTAN -> TCCGAPON
Candidates.#5...: TNIKMCAN -> TMBHVVHAN
Hardware.Mon.#2...: Temp: 78c Fan: 54% Util:100% Core:1635MHz Mem:6500MHz Bus:16
Hardware.Mon.#3...: Temp: 79c Fan: 56% Util:100% Core:1605MHz Mem:6500MHz Bus:16
Hardware.Mon.#4...: Temp: 74c Fan: 48% Util:100% Core:1650MHz Mem:6500MHz Bus:16
Hardware.Mon.#5...: Temp: 74c Fan: 49% Util:100% Core:1635MHz Mem:6500MHz Bus:16
```

belkin.XXXX: [0-9A-F]{8}

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx -1 ABCDEF
?d ?1?1?1?1?1?1?1?1
hashcat (v5.1.0) starting...

* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
  You can use --force to override, but do not report related errors.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.

OpenCL Platform #2: NVIDIA Corporation
=====
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
```

Estimate: 20 minutes

```
Session.....: hashcat
Status.....: Quit
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target.....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started.....: Tue May 11 22:50:17 2021 (32 secs)
Time.Estimated...: Tue May 11 23:11:12 2021 (20 mins, 23 secs)
Guess.Mask.....: ?1?1?1?1?1?1?1?1 [8]
Guess.Charset....: -1 ABCDEF?d, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 856.1 kH/s (86.44ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#3.....: 848.9 kH/s (87.04ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#4.....: 854.8 kH/s (86.47ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#5.....: 863.1 kH/s (85.83ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.*.....: 3422.8 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 108527616/4294967296 (2.53%)
Rejected.....: 0/108527616 (0.00%)
Restore.Point....: 1179648/268435456 (0.44%)
Restore.Sub.#2...: Salt:0 Amplifier:7-8 Iteration:0-1
Restore.Sub.#3...: Salt:0 Amplifier:7-8 Iteration:0-1
Restore.Sub.#4...: Salt:0 Amplifier:7-8 Iteration:0-1
Restore.Sub.#5...: Salt:0 Amplifier:7-8 Iteration:0-1
Candidates.#2....: 82345A00 -> 8F6E7BCA
Candidates.#3....: 82345E34 -> 8F6E7F34
Candidates.#4....: 82345BCA -> 8F6E7C34
Candidates.#5....: 82345723 -> 8F6E7355
Hardware.Mon.#2...: Temp: 72c Fan: 47% Util: 97% Core:1845MHz Mem:6500MHz Bus:16
Hardware.Mon.#3...: Temp: 74c Fan: 49% Util:100% Core:1800MHz Mem:6500MHz Bus:16
Hardware.Mon.#4...: Temp: 68c Fan: 40% Util:100% Core:1650MHz Mem:6500MHz Bus:16
Hardware.Mon.#5...: Temp: 67c Fan: 39% Util:100% Core:1875MHz Mem:6500MHz Bus:16
```


BELL#### - \[0-9A-F\] Len: 10

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx -1 ABCDEF?d ?1?1?1?1?1?1?1?1?1?1
hashcat (v5.1.0) starting...

* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
  You can use --force to override, but do not report related errors.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.

OpenCL Platform #2: NVIDIA Corporation
=====
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
```

Estimate: 3 days 19 hours

```
Session.....: hashcat
Status.....: Running
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target.....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started.....: Tue May 11 22:40:22 2021 (3 mins, 20 secs)
Time.Estimated...: Sat May 15 18:17:19 2021 (3 days, 19 hours)
Guess.Mask.....: ?1?1?1?1?1?1?1?1?1?1 [10]
Guess.Charset....: -1 ABCDEF?d, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 835.8 kH/s (88.19ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#3.....: 825.4 kH/s (89.50ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#4.....: 834.7 kH/s (88.36ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#5.....: 837.8 kH/s (88.31ms) @ Accel:16 Loops:256 Thr:1024 Vec:1
Speed.#*.....: 3333.7 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 662962176/1099511627776 (0.06%)
Rejected.....: 0/662962176 (0.00%)
Restore.Point....: 34209792/68719476736 (0.05%)
Restore.Sub.#2...: Salt:0 Amplifier:13-14 Iteration:2304-2560
Restore.Sub.#3...: Salt:0 Amplifier:11-12 Iteration:3328-3584
Restore.Sub.#4...: Salt:0 Amplifier:13-14 Iteration:1792-2048
Restore.Sub.#5...: Salt:0 Amplifier:13-14 Iteration:3840-4095
Candidates.#2....: D234525000 -> DF6E718789
Candidates.#3....: A234538789 -> AF6E768789
Candidates.#4....: D234518789 -> DF6E726789
Candidates.#5....: D234560789 -> DF6E782123
Hardware.Mon.#2..: Temp: 81c Fan: 61% Util:100% Core:1620MHz Mem:6500MHz Bus:16
Hardware.Mon.#3..: Temp: 82c Fan: 62% Util:100% Core:1590MHz Mem:6500MHz Bus:16
Hardware.Mon.#4..: Temp: 77c Fan: 56% Util:100% Core:1605MHz Mem:6500MHz Bus:16
Hardware.Mon.#5..: Temp: 78c Fan: 56% Util:100% Core:1620MHz Mem:6500MHz Bus:16
```

For [0-9A-Z]{8}

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx -1 ?u?d ?
1?1?1?1?1?1?1?1 # Run [[Hashcat]]
hashcat (v5.1.0) starting...
* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
You can use --force to override, but do not report related errors.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.
OpenCL Platform #2: NVIDIA Corporation
=====
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
```

Estimate: 9 days 19 hours

```
Session.....: hashcat
Status.....: Quit
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target.....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started.....: Tue May 11 22:45:37 2021 (1 min, 7 secs)
Time.Estimated...: Fri May 21 18:31:02 2021 (9 days, 19 hours)
Guess.Mask.....: ?1?1?1?1?1?1?1?1 [8]
Guess.Charset....: -1 ?u?d, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 834.2 kH/s (44.25ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#3.....: 821.5 kH/s (44.80ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#4.....: 832.8 kH/s (44.25ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#5.....: 835.4 kH/s (44.18ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#*.....: 3323.9 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 220594176/2821109907456 (0.01%)
Rejected.....: 0/220594176 (0.00%)
Restore.Point....: 1179648/78364164096 (0.00%)
Restore.Sub.#2...: Salt:0 Amplifier:11-12 Iteration:0-1
Restore.Sub.#3...: Salt:0 Amplifier:10-11 Iteration:0-1
Restore.Sub.#4...: Salt:0 Amplifier:11-12 Iteration:0-1
Restore.Sub.#5...: Salt:0 Amplifier:11-12 Iteration:0-1
Candidates.#2....: S25SBY12 -> SQLHYBER
Candidates.#3....: M2TQ6000 -> MQNSRDON
Candidates.#4....: S2MZ2234 -> SQYXVY12
Candidates.#5....: S2V1WESS -> SQMNMONA
Hardware.Mon.#2...: Temp: 79c Fan: 59% Util: 94% Core:1725MHz Mem:6500MHz Bus:16
Hardware.Mon.#3...: Temp: 80c Fan: 60% Util:100% Core:1620MHz Mem:6500MHz Bus:16
Hardware.Mon.#4...: Temp: 75c Fan: 53% Util: 99% Core:1635MHz Mem:6500MHz Bus:16
Hardware.Mon.#5...: Temp: 75c Fan: 54% Util: 84% Core:1770MHz Mem:6500MHz Bus:16
```

Estimate: 9 days

```

Session.....: hashcat
Status.....: Running
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started...: Tue May 11 22:08:02 2021 (1 min, 9 secs)
Time.Estimated...: Fri May 21 18:04:14 2021 (9 days, 19 hours)
Guess.Mask.....: ?1?1?1?1?1?1?1?1 [8]
Guess.Charset...: -1 ?u?d, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 832.2 kH/s (44.38ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#3.....: 823.5 kH/s (44.93ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#4.....: 831.3 kH/s (44.29ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#5.....: 834.3 kH/s (44.18ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.*.....: 3321.4 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 227672064/2821109907456 (0.01%)
Rejected.....: 0/227672064 (0.00%)
Restore.Point...: 1179648/78364164096 (0.00%)
Restore.Sub.#2...: Salt:0 Amplifier:12-13 Iteration:3584-3712
Restore.Sub.#3...: Salt:0 Amplifier:12-13 Iteration:1536-1664
Restore.Sub.#4...: Salt:0 Amplifier:12-13 Iteration:3328-3456
Restore.Sub.#5...: Salt:0 Amplifier:13-14 Iteration:0-128
Candidates.#2....: B25SBY12 -> BQLHYBER
Candidates.#3....: B2TQ6000 -> BQNSRDON
Candidates.#4....: B2MZ2234 -> BQYXVY12
Candidates.#5....: A2V1WESS -> AQNMNMONA
Hardware.Mon.#2..: Temp: 80c Fan: 59% Util:100% Core:1635MHz Mem:6500MHz Bus:16
Hardware.Mon.#3..: Temp: 81c Fan: 60% Util:100% Core:1590MHz Mem:6500MHz Bus:16
Hardware.Mon.#4..: Temp: 77c Fan: 54% Util:100% Core:1635MHz Mem:6500MHz Bus:16
Hardware.Mon.#5..: Temp: 77c Fan: 54% Util:100% Core:1650MHz Mem:6500MHz Bus:16

```

CenturyLinkXXX: [0-9a-f]{14}

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx -1 abcdef
?d ?1?1?1?1?1?1?1?1?1?1?1?1?1?1?1?1
hashcat (v5.1.0) starting...
* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.
OpenCL Platform #2: NVIDIA Corporation
=====
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
```

Estimate: 600+ years

```

Session.....: hashcat
Status.....: Quit
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target.....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started.....: Tue May 11 22:57:04 2021 (22 secs)
Time.Estimated...: Thu Apr 12 21:23:22 2688 (666 years, 336 days)
Guess.Mask.....: ?1?1?1?1?1?1?1?1?1?1?1?1 [14]
Guess.Charset....: -1 abcdef?d, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 856.7 kH/s (42.93ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#3.....: 851.3 kH/s (43.32ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#4.....: 852.4 kH/s (43.09ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#5.....: 863.4 kH/s (42.48ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.*.....: 3423.8 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 70778880/72057594037927936 (0.00%)
Rejected.....: 0/70778880 (0.00%)
Restore.Point....: 0/4503599627370496 (0.00%)
Restore.Sub.#2...: Salt:0 Amplifier:15-16 Iteration:0-1
Restore.Sub.#3...: Salt:0 Amplifier:15-16 Iteration:0-1
Restore.Sub.#4...: Salt:0 Amplifier:15-16 Iteration:0-1
Restore.Sub.#5...: Salt:0 Amplifier:15-16 Iteration:0-1
Candidates.#2....: 6abe1199999999 -> 6f6f5569999999
Candidates.#3....: 6abe1999999999 -> 6f6f5455699999
Candidates.#4....: 6abe1323456666 -> 6f6f5069999999
Candidates.#5....: 6abe1512345666 -> 6f6f5800000000
Hardware.Mon.#2..: Temp: 65c Fan: 36% Util:100% Core:1785MHz Mem:6500MHz Bus:16
Hardware.Mon.#3..: Temp: 67c Fan: 38% Util: 99% Core:1815MHz Mem:6500MHz Bus:16
Hardware.Mon.#4..: Temp: 60c Fan: 33% Util: 98% Core:1755MHz Mem:6500MHz Bus:16
Hardware.Mon.#5..: Temp: 59c Fan: 35% Util: 99% Core:1815MHz Mem:6500MHz Bus:16

```

Password pattern: [0-9a-zA-Z]{8}

```

root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx -1 ?d?l?u ?
1?1?1?1?1?1?1?1
hashcat (v5.1.0) starting...
* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
You can use --force to override, but do not report related errors.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.

OpenCL Platform #2: NVIDIA Corporation
=====
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU

```

```

Session.....: hashcat
Status.....: Running
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started....: Tue May 11 23:14:56 2021 (19 secs)
Time.Estimated...: Sat May 27 04:16:27 2023 (2 years, 15 days)
Guess.Mask.....: ?1?1?1?1?1?1?1?1 [8]
Guess.Charset....: -1 ?d?l?u, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 850.1 kH/s (43.23ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#3.....: 838.7 kH/s (43.68ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#4.....: 847.4 kH/s (43.27ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#5.....: 854.9 kH/s (42.86ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#*.....: 3391.1 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 61341696/218340105584896 (0.00%)
Rejected.....: 0/61341696 (0.00%)
Restore.Point....: 0/3521614606208 (0.00%)
Restore.Sub.#2...: Salt:0 Amplifier:13-14 Iteration:2176-2304
Restore.Sub.#3...: Salt:0 Amplifier:13-14 Iteration:1536-1664
Restore.Sub.#4...: Salt:0 Amplifier:13-14 Iteration:2048-2176
Restore.Sub.#5...: Salt:0 Amplifier:13-14 Iteration:2560-2688
Candidates.#2....: karierin -> kgYzzane
Candidates.#3....: k8Rfusan -> kMuF0000
Candidates.#4....: kfLwonan -> k1Tnkerd
Candidates.#5....: kS9IGINA -> ks9T0000
Hardware.Mon.#2..: Temp: 70c Fan: 41% Util:100% Core:1650MHz Mem:6500MHz Bus:16
Hardware.Mon.#3..: Temp: 72c Fan: 43% Util: 99% Core:1650MHz Mem:6500MHz Bus:16
Hardware.Mon.#4..: Temp: 65c Fan: 35% Util:100% Core:1665MHz Mem:6500MHz Bus:16
Hardware.Mon.#5..: Temp: 65c Fan: 35% Util:100% Core:1680MHz Mem:6500MHz Bus:16

```

Vergin Media Hub 3.0: [0-9a-z-A-Z]{12}

BT hub6: [0-9a-z-A-Z]{12}

BT Smart Hub - Type A: [0-9a-z-A-Z]{12}

Keyspace too large for hashcat to even attempt

```
Integer overflow detected in keyspace of mask: ?1?1?1?1?1?1?1?1?1?1?1
```


To have a better estimate, let's try the same pattern but shorter
[0-9a-z-A-Z]{10}

```
root@localhost:~# hashcat -d 2,3,4,5 -m 2500 -w 3 --status -a 3 wpaHandshake.hccapx -1 ?d?l?u ?
1?1?1?1?1?1?1?1?1?1
hashcat (v5.1.0) starting...

* Device #1: Not a native Intel OpenCL runtime. Expect massive speed loss.
  You can use --force to override, but do not report related errors.
OpenCL Platform #1: The pocl project
=====
* Device #1: pthread-Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz, skipped.

OpenCL Platform #2: NVIDIA Corporation
=====
* Device #2: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #3: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #4: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
* Device #5: Quadro RTX 6000, 6047/24190 MB allocatable, 72MCU
```

Estimate: Next big bang

```
Session.....: hashcat
Status.....: Running
Hash.Type.....: WPA-EAPOL-PBKDF2
Hash.Target.....: Cisco05683 (AP:c0:c1:c0:89:89:0f STA:14:5f:94:c4:ec:c8)
Time.Started.....: Tue May 11 23:35:58 2021 (1 min, 20 secs)
Time.Estimated...: Sun Dec 26 02:18:14 9965 (7944 years, 228 days)
Guess.Mask.....: ?1?1?1?1?1?1?1?1?1?1 [10]
Guess.Charset....: -1 ?d?l?u, -2 Undefined, -3 Undefined, -4 Undefined
Guess.Queue.....: 1/1 (100.00%)
Speed.#2.....: 838.1 kH/s (44.17ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#3.....: 829.7 kH/s (44.68ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#4.....: 836.4 kH/s (44.26ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#5.....: 843.5 kH/s (43.97ms) @ Accel:16 Loops:128 Thr:1024 Vec:1
Speed.#*.....: 3347.7 kH/s
Recovered.....: 0/1 (0.00%) Digests, 0/1 (0.00%) Salts
Progress.....: 263061504/839299365868340224 (0.00%)
Rejected.....: 0/263061504 (0.00%)
Restore.Point....: 0/13537086546263552 (0.00%)
Restore.Sub.#2...: Salt:0 Amplifier:56-57 Iteration:640-768
Restore.Sub.#3...: Salt:0 Amplifier:55-56 Iteration:2432-2560
Restore.Sub.#4...: Salt:0 Amplifier:56-57 Iteration:256-384
Restore.Sub.#5...: Salt:0 Amplifier:56-57 Iteration:2176-2304
Candidates.#2....: 0fLwonaner -> 01Tnkerder
Candidates.#3....: Varieriner -> VgYzzanere
Candidates.#4....: 08Rfusaner -> 0MuF000000
Candidates.#5....: 0S9IGINAND -> 0s9T000000
Hardware.Mon.#2..: Temp: 80c Fan: 58% Util:100% Core:1635MHz Mem:6500MHz Bus:16
Hardware.Mon.#3..: Temp: 80c Fan: 58% Util: 99% Core:1620MHz Mem:6500MHz Bus:16
Hardware.Mon.#4..: Temp: 76c Fan: 52% Util:100% Core:1635MHz Mem:6500MHz Bus:16
Hardware.Mon.#5..: Temp: 76c Fan: 52% Util: 99% Core:1635MHz Mem:6500MHz Bus:16
```

