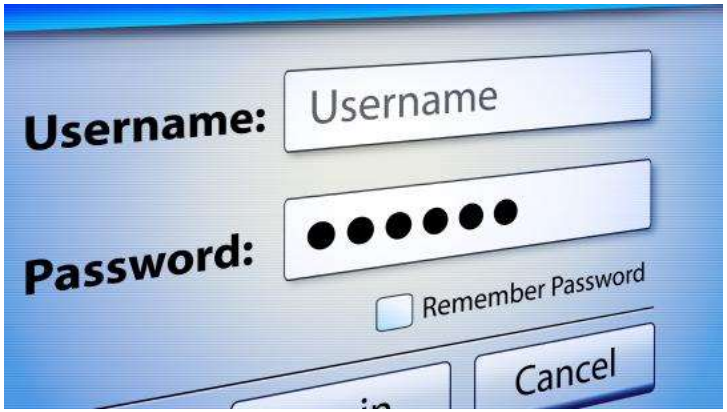
Lab 3. Password Cracking / Putty

Password Cracking

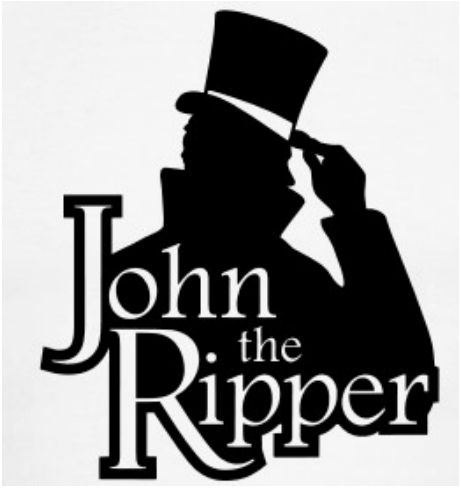
Password Cracking ?

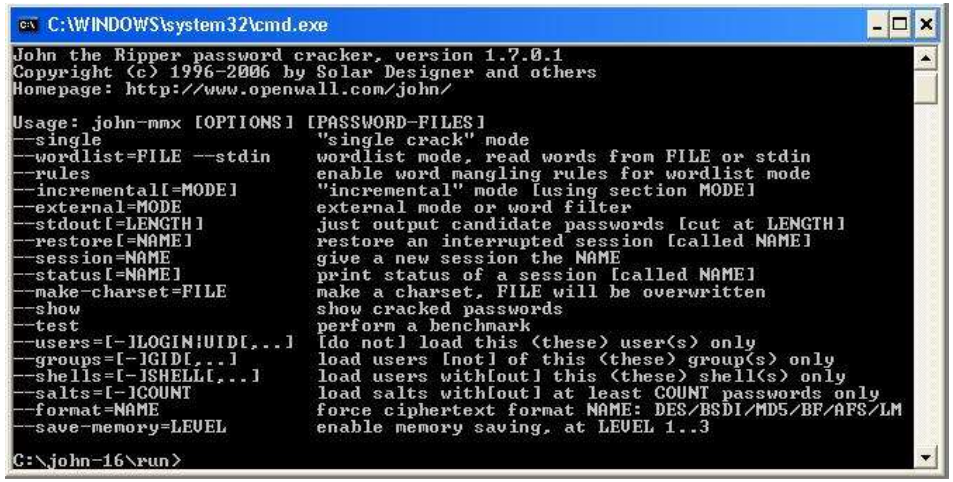



```
c:\gsauditor> gsauditor -set:?d -binary -append -salt:6e4ca656fc53f356293c 613d9
cfc0f751520ad6a28c7bef5cd4ea2179437

        GSAuditor, v0.3 (Nov 26 2008), (c) EvilFingers.com
        ************************************************

        Ansi passwords will be created
        Will use "0123456789" as alphabet
        Starting with "0"
        Ending with "99999999"
        Hash to find is "613d9cfc0f751520ad6a28c7bef5cd4ea2179437"
        The salt is "6e4ca656fc53f356293c" and will be appended in binary format
.
        Press CTRL+C for current statistics (twice quick to terminate)


Password was not found. - last try was "99999999"

Seconds elapsed:18 k/s: 6172839
```

실습 사용 tool

- John the ripper
  - 간단히 암호화 된 password 를 알아낼 수 있는 tool
  - 윈도우/리눅스 버전 지원





John the ripper 설치

- http://www.openwall.com/john/

John the Ripper is free and Open Source software, distributed primarily in source code form. If you would rather use a commercial product tailored for your specific operating system, please consider John the Ripper *Pro*, which is distributed primarily in the form of "native" packages for the target operating systems and in general is meant to be easier to install and use while delivering optimal performance.

Proceed to **John the Ripper *Pro*** homepage for your OS:

- John the Ripper *Pro* for Linux
- John the Ripper *Pro* for Mac OS X
- **On Windows, consider Hash Suite** (developed by a contributor to John the Ripper)
- On Android, consider Hash Suite Droid

Download the latest John the Ripper jumbo release (release notes) or development snapshot:

- 1.9.0-jumbo-1 sources in tar.xz, 33 MB (signature) or tar.gz, 43 MB (signature)
- **1.9.0-jumbo-1 64-bit Windows binaries in 7z, 22 MB (signature) or zip, 63 MB (signature)**
- **1.9.0-jumbo-1 32-bit Windows binaries in 7z, 21 MB (signature) or zip, 61 MB (signature)**
- Development source code in GitHub repository (download as tar.gz or zip)

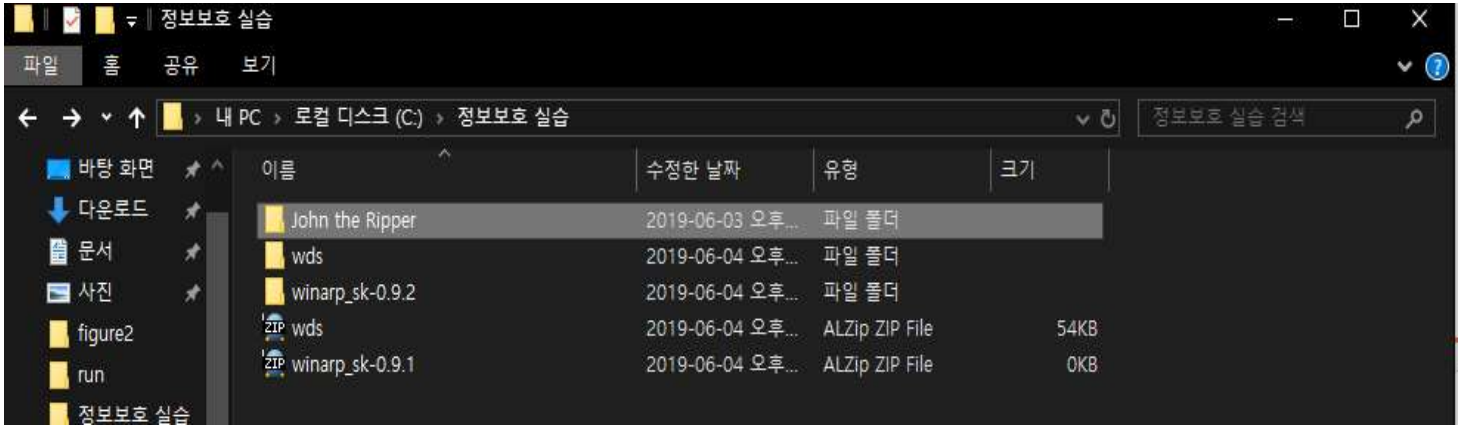
Download the latest John the Ripper core release (release notes):

- 1.9.0 core sources in tar.xz, 8.6 MB (signature) or tar.gz, 13 MB (signature)
- Development source code in CVS repository

Get John the Ripper apparel at 0-Day Clothing and support the project

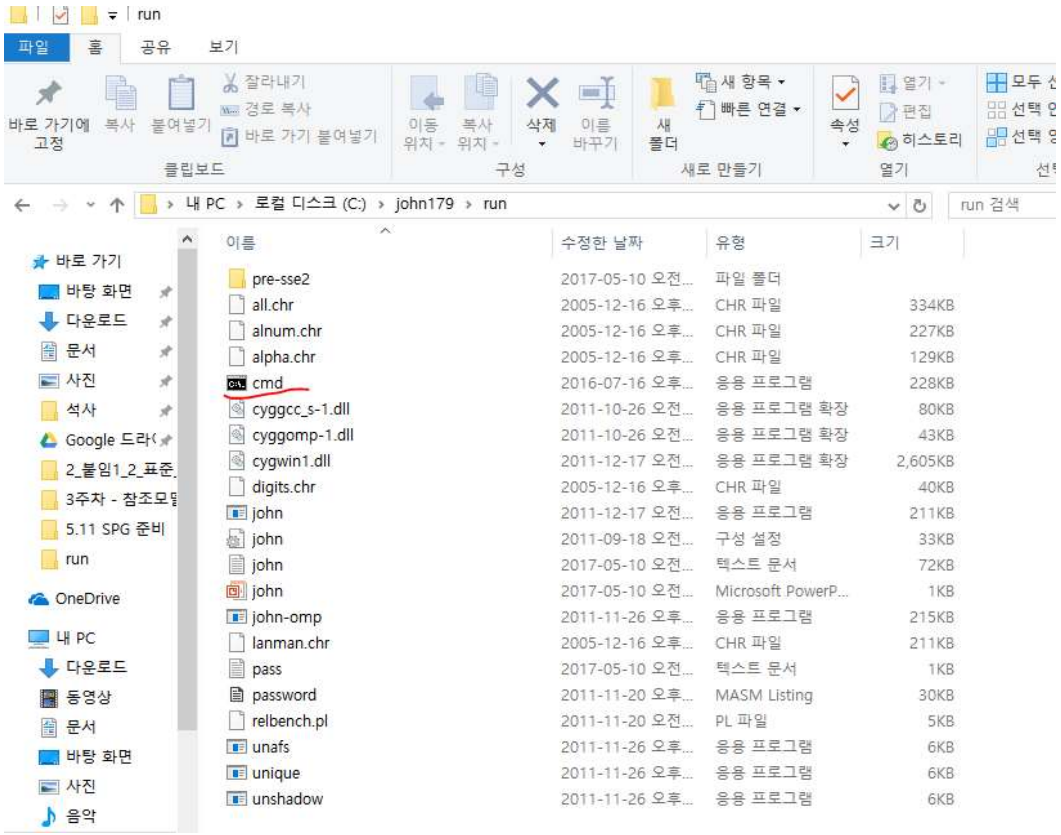
John the ripper 사용

- 압축 해제



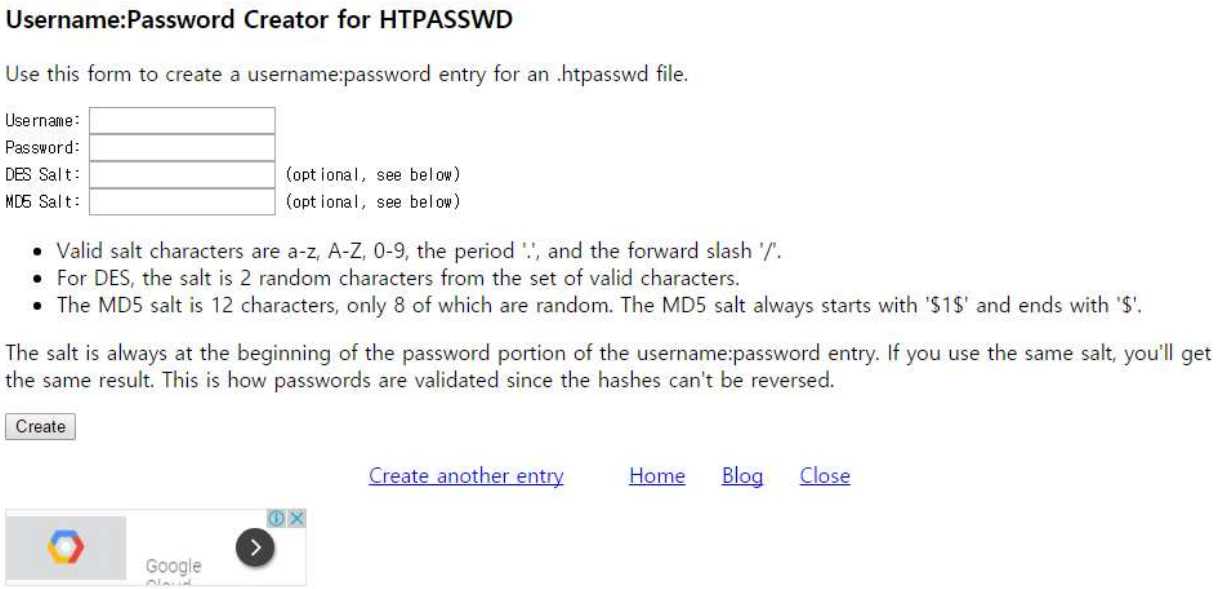
John the ripper 사용

- John₩run 폴더 내 CMD 복사



Password 파일 생성

- sherylcanter.com/encrypt.php



Username:Password Creator for HTPASSWD

Use this form to create a username:password entry for an .htpasswd file.

Username:
Password:
DES Salt: (optional, see below)
MD5 Salt: (optional, see below)

- Valid salt characters are a-z, A-Z, 0-9, the period '.', and the forward slash '/'.
- For DES, the salt is 2 random characters from the set of valid characters.
- The MD5 salt is 12 characters, only 8 of which are random. The MD5 salt always starts with '1' and ends with '$'.

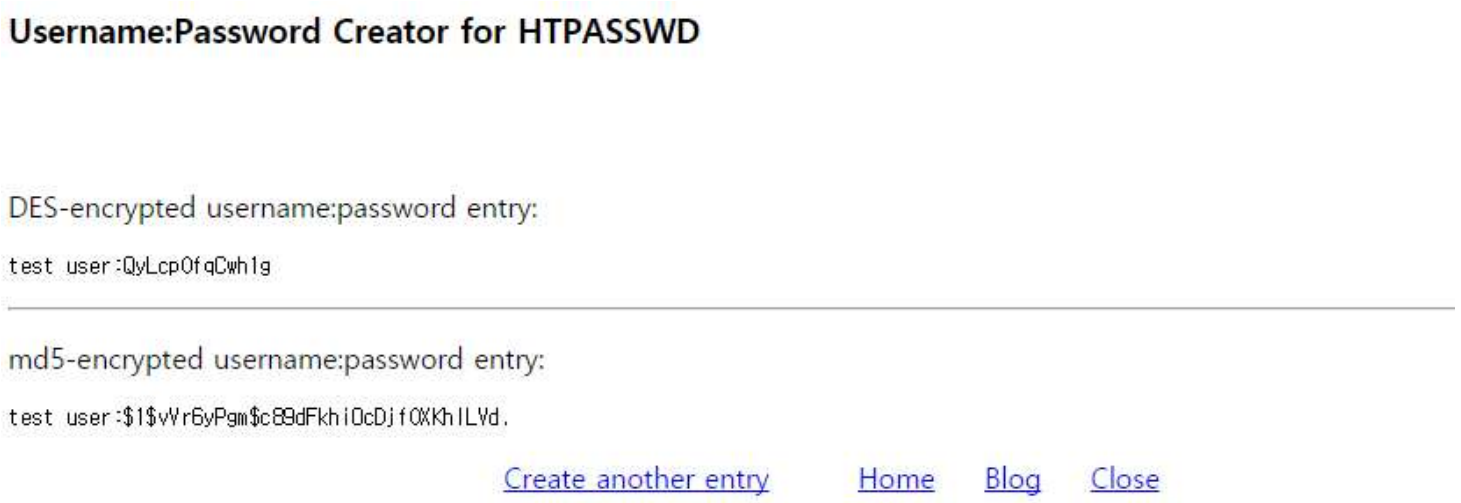
The salt is always at the beginning of the password portion of the username:password entry. If you use the same salt, you'll get the same result. This is how passwords are validated since the hashes can't be reversed.

Create

Create another entry Home Blog Close

Password 파일 생성

- sherylcanter.com/encrypt.php



Password 파일 생성

- Txt 파일로 생성 후 저장

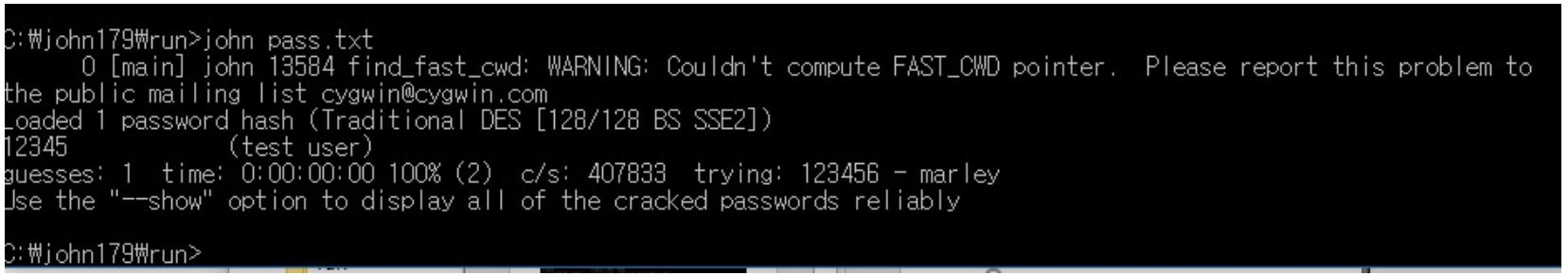
Password Cracking 실행

- Cmd - john

Password Cracking 실행

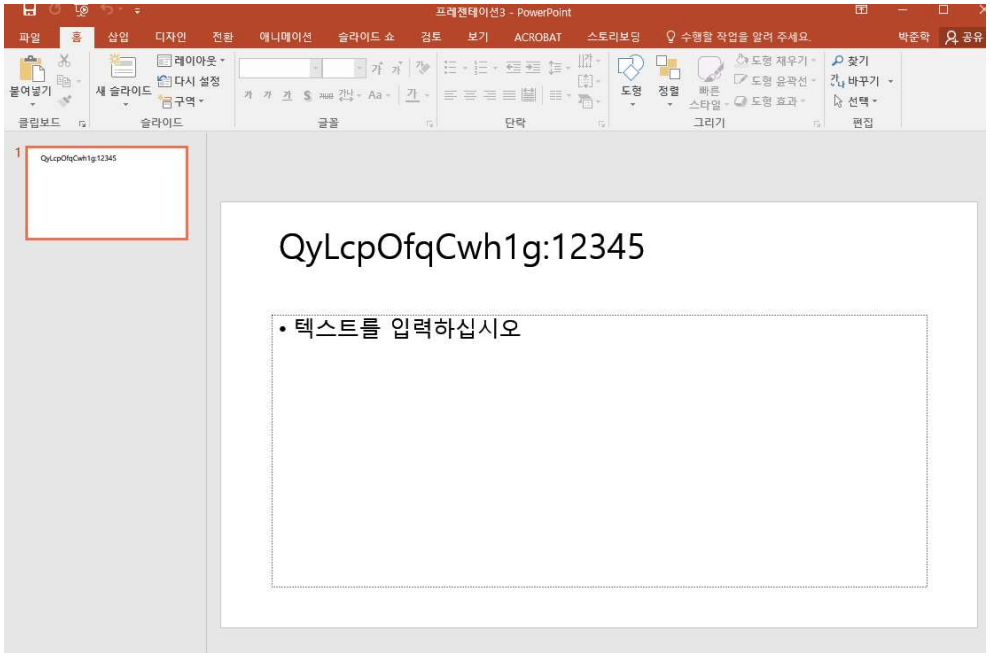
- Cmd – john 파일명

- 계정/패스워드 일치 확인



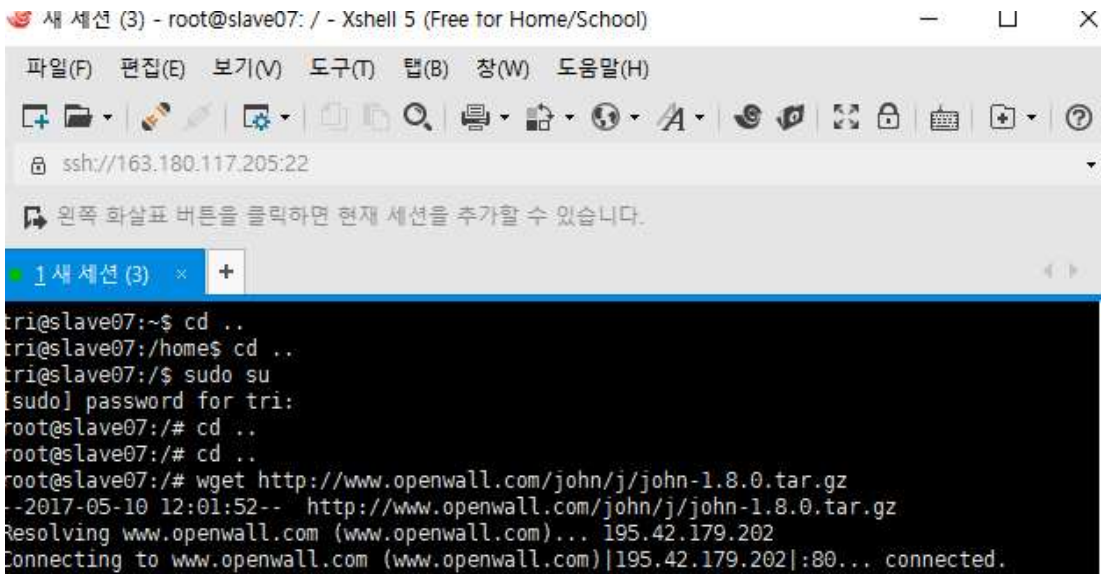
주의 사항

- 재 사용시 run 폴더에 john.pot 파일 삭제



John the ripper - Linux

- Apt-get install john
- wget http://openwall.com/john/j/john-1.8.0.tar.gz



John the ripper - Linux

- 압축 해제

```
root@slave07:/# tar zxvf john-1.8.0.tar.gz
john-1.8.0/README
john-1.8.0/doc/CHANGES
john-1.8.0/doc/CONFIG
john-1.8.0/doc/CONTACT
john-1.8.0/doc/COPYING
john-1.8.0/doc/CREDITS
john-1.8.0/doc/EXAMPLES
john-1.8.0/doc/EXTERNAL
john-1.8.0/doc/FAQ
john-1.8.0/doc/INSTALL
john-1.8.0/doc/LICENSE
```

John the ripper - Linux

- 디렉토리 이동 후 make

- cd john-1.8.0/src

```
sco-x86-any-gcc          SCO, x86, gcc
sco-x86-any-cc           SCO, x86, cc
tru64-alpha              Tru64 (Digital UNIX, OSF/1), Alpha
aix-ppc32                AIX, PowerPC 32-bit
macosx-x86-64            Mac OS X 10.5+, Xcode 3.0+, x86-64 with SSE2 (best)
macosx-x86-sse2          Mac OS X, x86 with SSE2
macosx-ppc32-altivec     Mac OS X, PowerPC w/AltiVec (best)
macosx-ppc32             Mac OS X, PowerPC 32-bit
macosx-ppc64             Mac OS X 10.4+, PowerPC 64-bit
macosx-universal         Mac OS X, Universal Binary (x86 + x86-64 + PPC)
hpux-pa-risc-gcc         HP-UX, PA-RISC, gcc
hpux-pa-risc-cc          HP-UX, PA-RISC, ANSI cc
irix-mips64-r10k         IRIX, MIPS 64-bit (R10K) (best)
irix-mips64              IRIX, MIPS 64-bit
irix-mips32              IRIX, MIPS 32-bit
dos-djgpp-x86-mmx        DOS, DJGPP, x86 with MMX
dos-djgpp-x86-any        DOS, DJGPP, x86
win32-cygwin-x86-sse2    Win32, Cygwin, x86 with SSE2 (best)
win32-cygwin-x86-mmx     Win32, Cygwin, x86 with MMX
win32-cygwin-x86-any     Win32, Cygwin, x86
beos-x86-sse2            BeOS, x86 with SSE2 (best)
beos-x86-mmx             BeOS, x86 with MMX
beos-x86-any             BeOS, x86
generic                  Any other Unix-like system with gcc
root@slave07:/john-1.8.0/src#
```

John the ripper - Linux

- Make clean SYSTEM 입력
  - 현재 리눅스 서버 시스템이 무엇인지 알려줌

```
root@slave07:/john-1.8.0/src# make clean SYSTEM
rm -f ../run/john ../run/unshadow ../run/unafs ../run/unique ../run/john.bin ../run/john
.com ../run/unshadow.com ../run/unafs.com ../run/unique.com ../run/john.exe ../run/unsha
dow.exe ../run/unafs.exe ../run/unique.exe
rm -f ../run/john.exe john-macosx-* *.o *.bak core
rm -f detect bench generic.h arch.h tmp.s
cp /dev/null Makefile.dep
make: *** No rule to make target `SYSTEM'.  Stop.
root@slave07:/john-1.8.0/src#
```

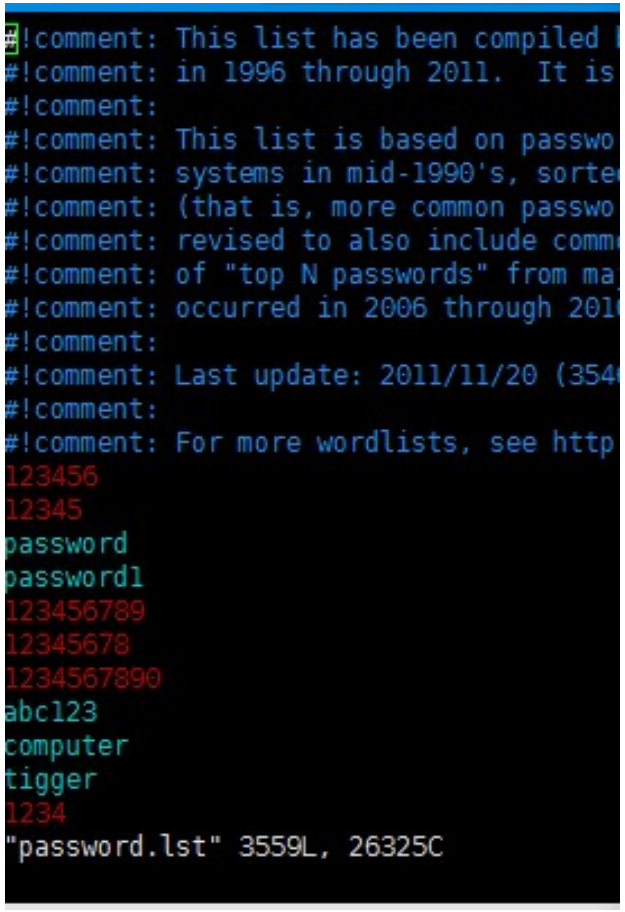
John the ripper - Linux

- Make clean generic 입력
  - 서버 시스템 조사 후 맞게 설정
- Run 디렉토리로 이동
- ./john/etc/shadow 로 실행

```
# ./john -user:test /etc/shadow
Loaded 1 password hash (FreeBSD MD5 [32/32])
smile                (test)
guesses: 1  time: 0:00:00:01 100% (2)  c/s: 2536  trying: smile
```

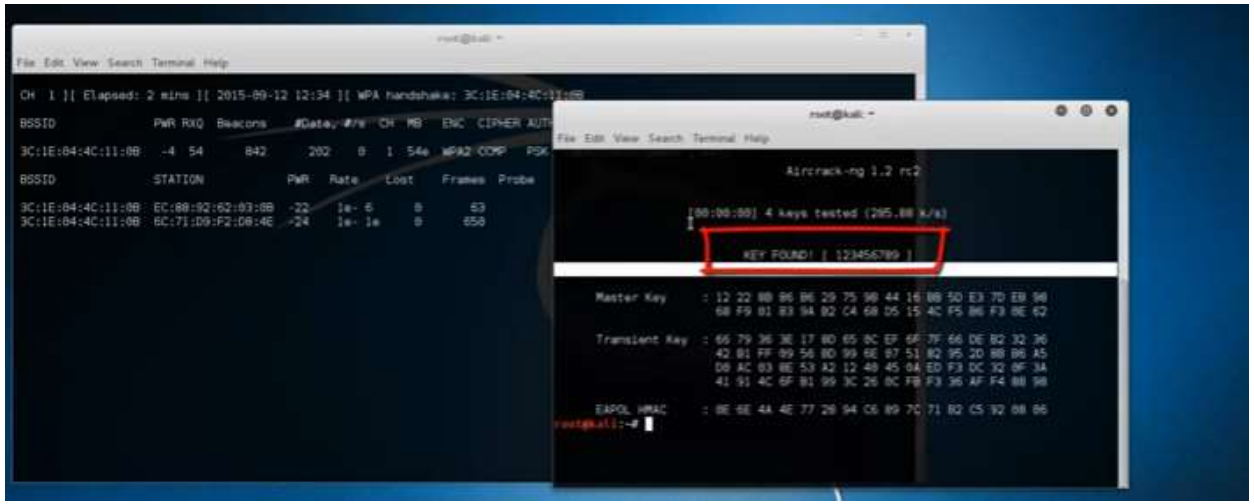
John the ripper - Linux

- Password.lst



응용 시나리오

- Aircrack-ng 를 이용한 Wifi password 탈취
  - https://cpuu.postype.com/post/55291/
  - http://itmir.tistory.com/387
  - https://www.youtube.com/watch?v=4DjyEnPH2bY



추가 정보

- 암호를 어렵게 만들어야 하는 이유
  - 숫자 + 영문 + 특수문자 : 12시간이 지나도 뚫지 못함

Putty

Putty란?

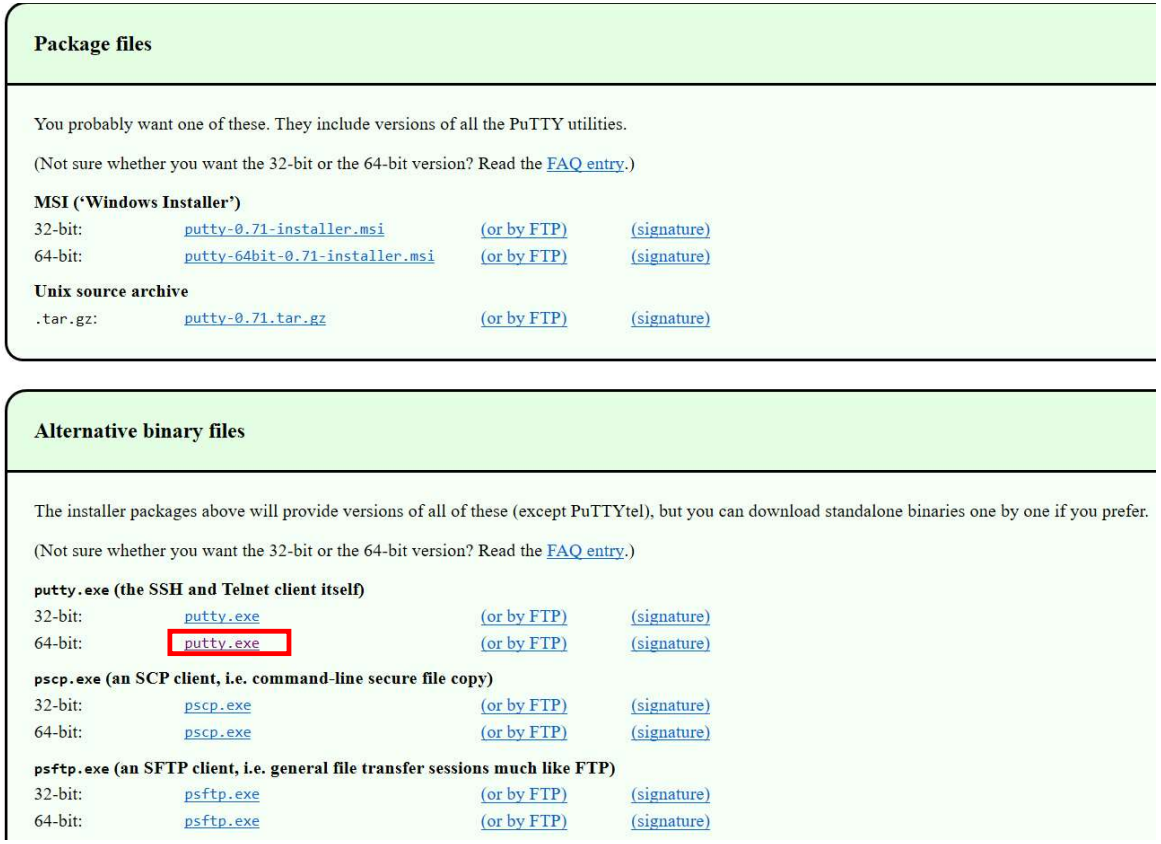
- Raw TCP, SSH, Telnet, Rlogin등의 방법으로 IP를 이용하여 원격접속 할 수 있는 프로그램.

Putty

- **Rlogin** : 명령은 TCP 포트 513를 통해 통신 사용자가 네트워크를 통해 다른 호스트에 로그인할 수 있도록 유닉스와 같은 컴퓨터 운영 체제를 위한 소프트웨어 유틸리티이다.
- **TCP** : 근거리 통신망이나 인트라넷, 인터넷에 연결된 컴퓨터에서 실행되는 프로그램 간에 일련의 옥텟을 안정적으로, 순서대로, 에러 없이 교환할 수 있게 한다.
- **텔넷(TELNET)** : 인터넷이나 로컬 영역 네트워크 연결에 쓰이는 네트워크 프로토콜이다.텔넷의 보안 문제 때문에 사용률이 감소하여, 원격 제어를 위해 SSH로 대체되기도 하였다.
- **SSH(Secure Shell)** : 네트워크 상의 다른 컴퓨터에 로그인하거나 원격 시스템에서 명령을 실행하고 다른 시스템으로 파일을 복사할 수 있도록 해 주는 응용 프로그램 또는 그 프로토콜을 가리킨다. 기존의 rsh, rlogin, 텔넷 등을 대체하기 위해 설계되었으며, 강력한 인증 방법 및 안전하지 못한 네트워크에서 안전하게 통신을 할 수 있는 기능을 제공한다.

Putty 설치

- https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html



Package files

You probably want one of these. They include versions of all the PuTTY utilities.

(Not sure whether you want the 32-bit or the 64-bit version? Read the FAQ entry.)

MSI ('Windows Installer')

32-bit:	putty-0.71-installer.msi	(or by FTP)	(signature)
64-bit:	putty-64bit-0.71-installer.msi	(or by FTP)	(signature)

Unix source archive

.tar.gz:	putty-0.71.tar.gz	(or by FTP)	(signature)

Alternative binary files

The installer packages above will provide versions of all of these (except PuTTYtel), but you can download standalone binaries one by one if you prefer.

(Not sure whether you want the 32-bit or the 64-bit version? Read the FAQ entry.)

putty.exe (the SSH and Telnet client itself)

32-bit:	putty.exe	(or by FTP)	(signature)
64-bit:	putty.exe	(or by FTP)	(signature)

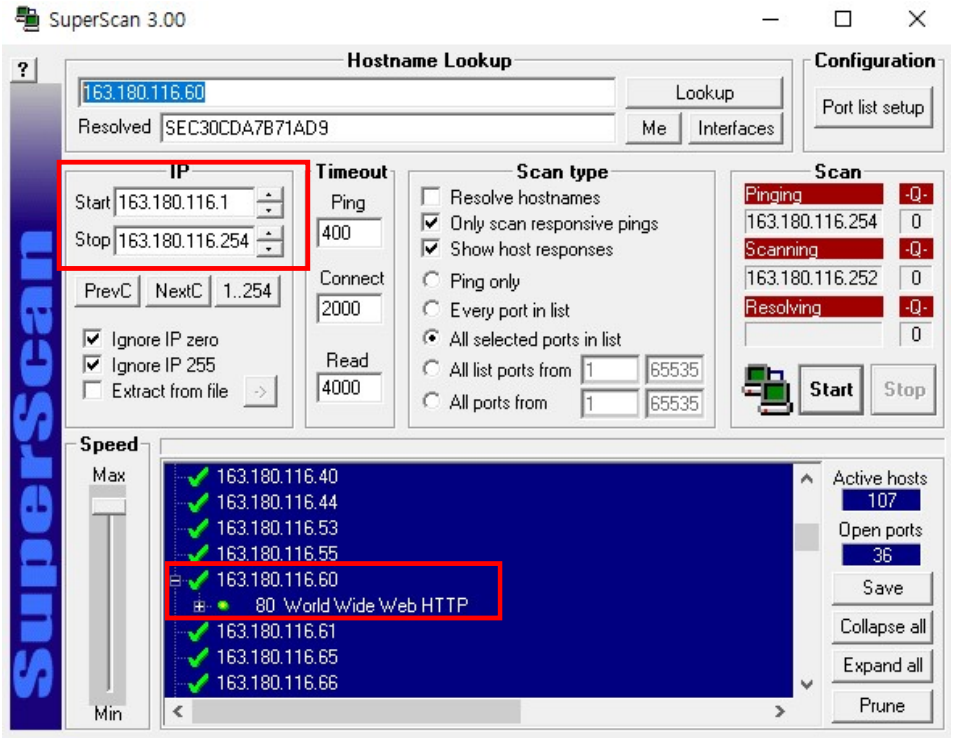
pscp.exe (an SCP client, i.e. command-line secure file copy)

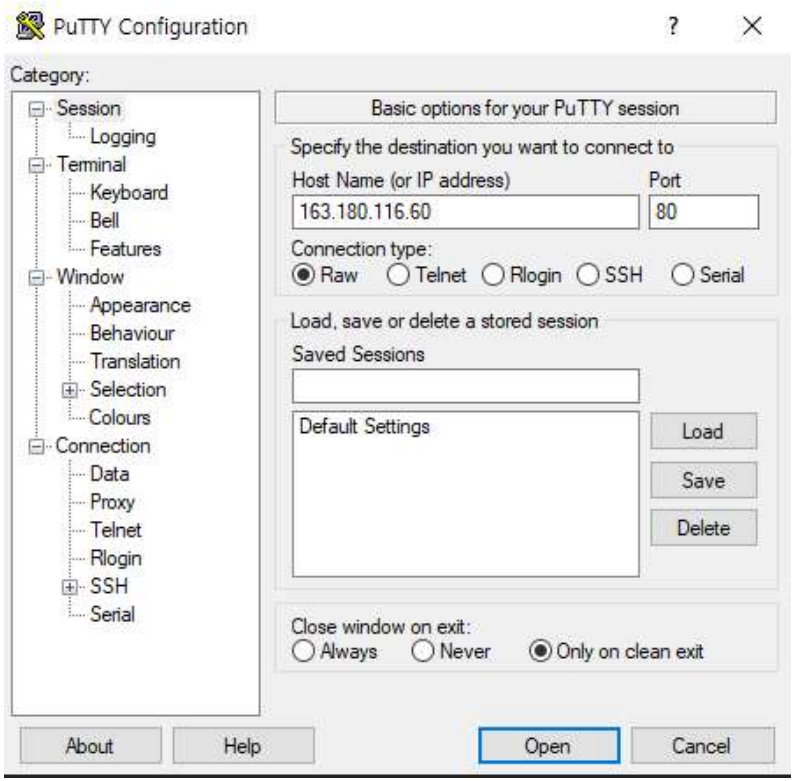
32-bit:	pscp.exe	(or by FTP)	(signature)
64-bit:	pscp.exe	(or by FTP)	(signature)

psftp.exe (an SFTP client, i.e. general file transfer sessions much like FTP)

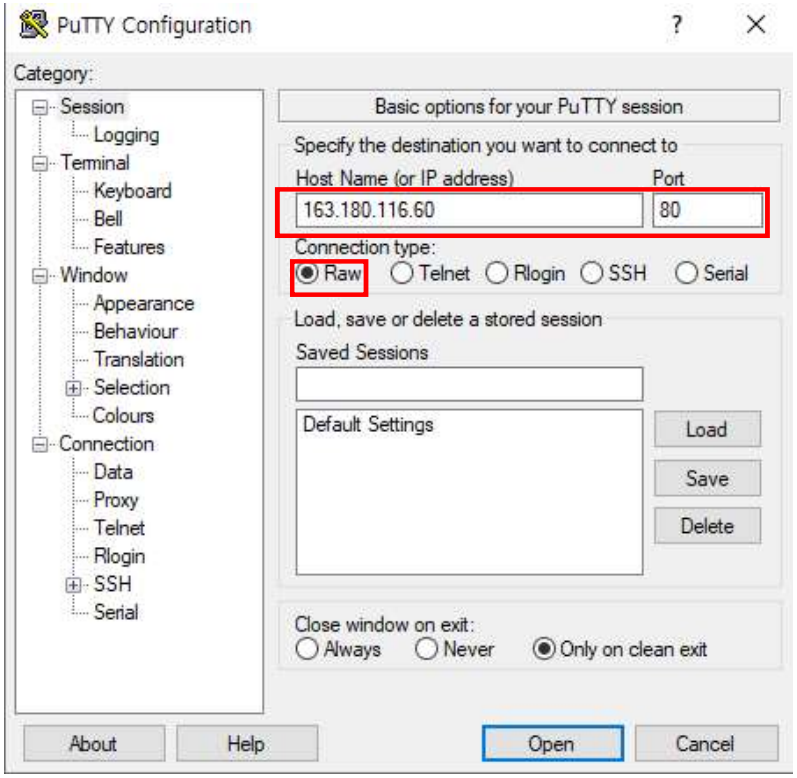
32-bit:	psftp.exe	(or by FTP)	(signature)
64-bit:	psftp.exe	(or by FTP)	(signature)

HTTP


SuperScan 3.00
Hostname Lookup
163.180.116.60
Lookup
Resolved SEC30CDA7B71AD9
Me
Interfaces
Configuration
Port list setup
IP
Start 163.180.116.1
Stop 163.180.116.254
PrevC
NextC
1..254
Ignore IP zero
Ignore IP 255
Extract from file
Timeout
Ping
400
Connect
2000
Read
4000
Scan type
Resolve hostnames
Only scan responsive pings
Show host responses
Ping only
Every port in list
All selected ports in list
All list ports from 1 65535
All ports from 1 65535
Scan
Pinging -Q-
163.180.116.254 0
Scanning -Q-
163.180.116.252 0
Resolving -Q-
0
Start
Stop
Speed
Max
Min
163.180.116.40
163.180.116.44
163.180.116.53
163.180.116.55
163.180.116.60
80 World Wide Web HTTP
163.180.116.61
163.180.116.65
163.180.116.66
Active hosts
107
Open ports
36
Save
Collapse all
Expand all
Prune
SuperScan


PuTTY Configuration
Category:
Session
Logging
Terminal
Keyboard
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
Telnet
Rlogin
SSH
Serial
Basic options for your PuTTY session
Specify the destination you want to connect to
Host Name (or IP address)
Port
163.180.116.60
80
Connection type:
Raw
Telnet
Rlogin
SSH
Serial
Load, save or delete a stored session
Saved Sessions
Default Settings
Load
Save
Delete
Close window on exit:
Always
Never
Only on clean exit
About
Help
Open
Cancel

HTTP


PuTTY Configuration
Category:
Session
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Terminal
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Features
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Connection
Data
Proxy
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163.180.116.60
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Connection type:
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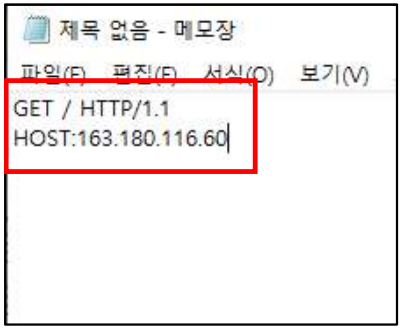
Telnet
Rlogin
SSH
Serial
Load, save or delete a stored session
Saved Sessions
Default Settings
Load
Save
Delete
Close window on exit:
Always
Never
Only on clean exit
About
Help
Open
Cancel

HTTP



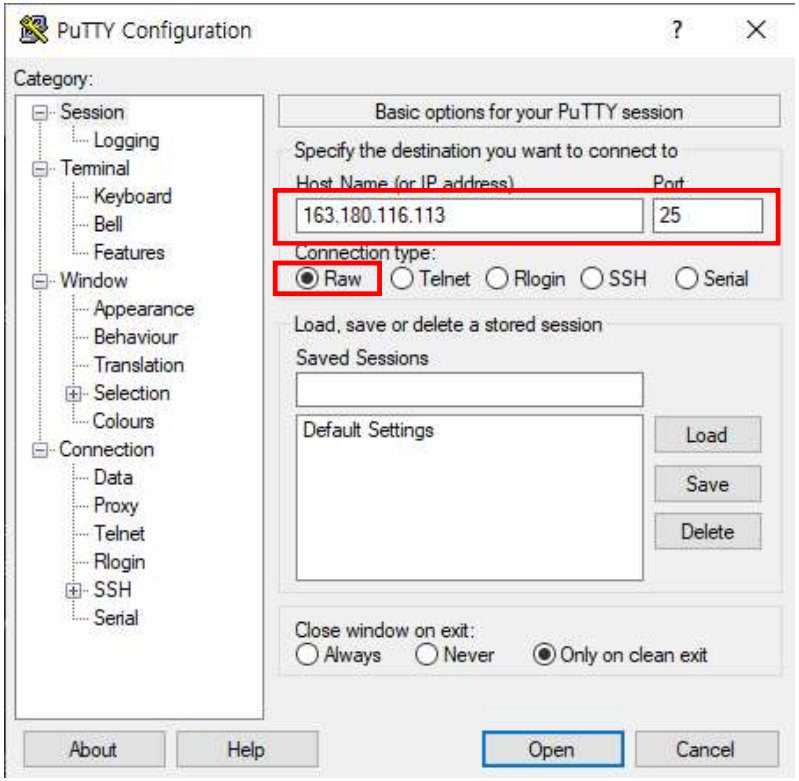
PuTTY (inactive)

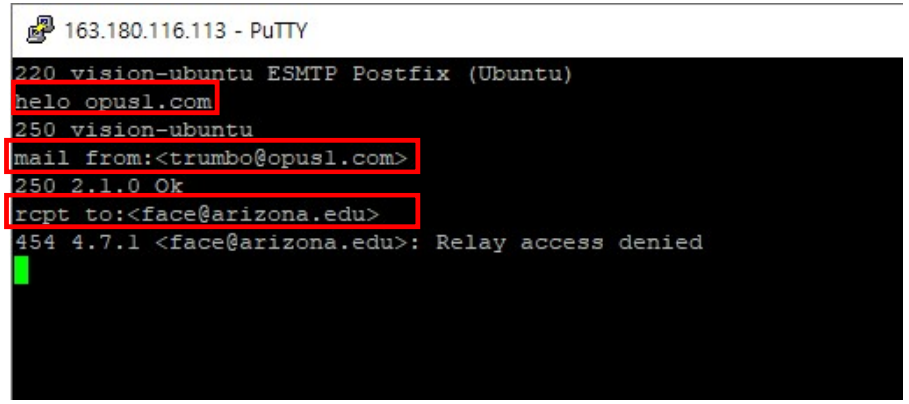
```
GET / HTTP/1.1
HOST:163.180.116.60

HTTP/1.1 200 OK
Expires: Thu, 1 Jan 1998 00:00:00 GMT
Content-Type: text/html
Transfer-Encoding: chunked
Pragma: no-cache
Cache-Control: no-store
Cache-Control: no-cache
Connection: close

13E6
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
    <meta http-equiv="content-script-type" content="text/javascript" />
    <meta http-equiv="X-UA-Compatible" content="IE=7" />
    <link rel="stylesheet" type="text/css" media="all" href="std.css" />
    <link rel="shortcut icon" type="image/x-icon" href="media/favicon.ico" />
    <title>리 모 트  UI (Top Page): MF4800 Series : MF4800 Series</t
itle>
```

SMTP


PuTTY Configuration
Category:
Session
Logging
Terminal
Keyboard
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
Telnet
Rlogin
SSH
Serial
Basic options for your PuTTY session
Specify the destination you want to connect to
Host Name (or IP address)
Port
163.180.116.113
25
Connection type:
Raw
Telnet
Rlogin
SSH
Serial
Load, save or delete a stored session
Saved Sessions
Default Settings
Load
Save
Delete
Close window on exit:
Always
Never
Only on clean exit
About
Help
Open
Cancel


163.180.116.113 - PuTTY
220 vision-ubuntu ESMTP Postfix (Ubuntu)
helo opusl.com
250 vision-ubuntu
mail from:<trumbo@opusl.com>
250 2.1.0 Ok
rcpt to:<face@arizona.edu>
454 4.7.1 <face@arizona.edu>: Relay access denied