In a change from our advertised program...

Why Passwords Don't Work

Jon Warbrick

What are we trying to achieve?

What are we trying to achieve?

Protection from

- a bored University student
- a tabloid journalist
- an organized criminal
- the NSA

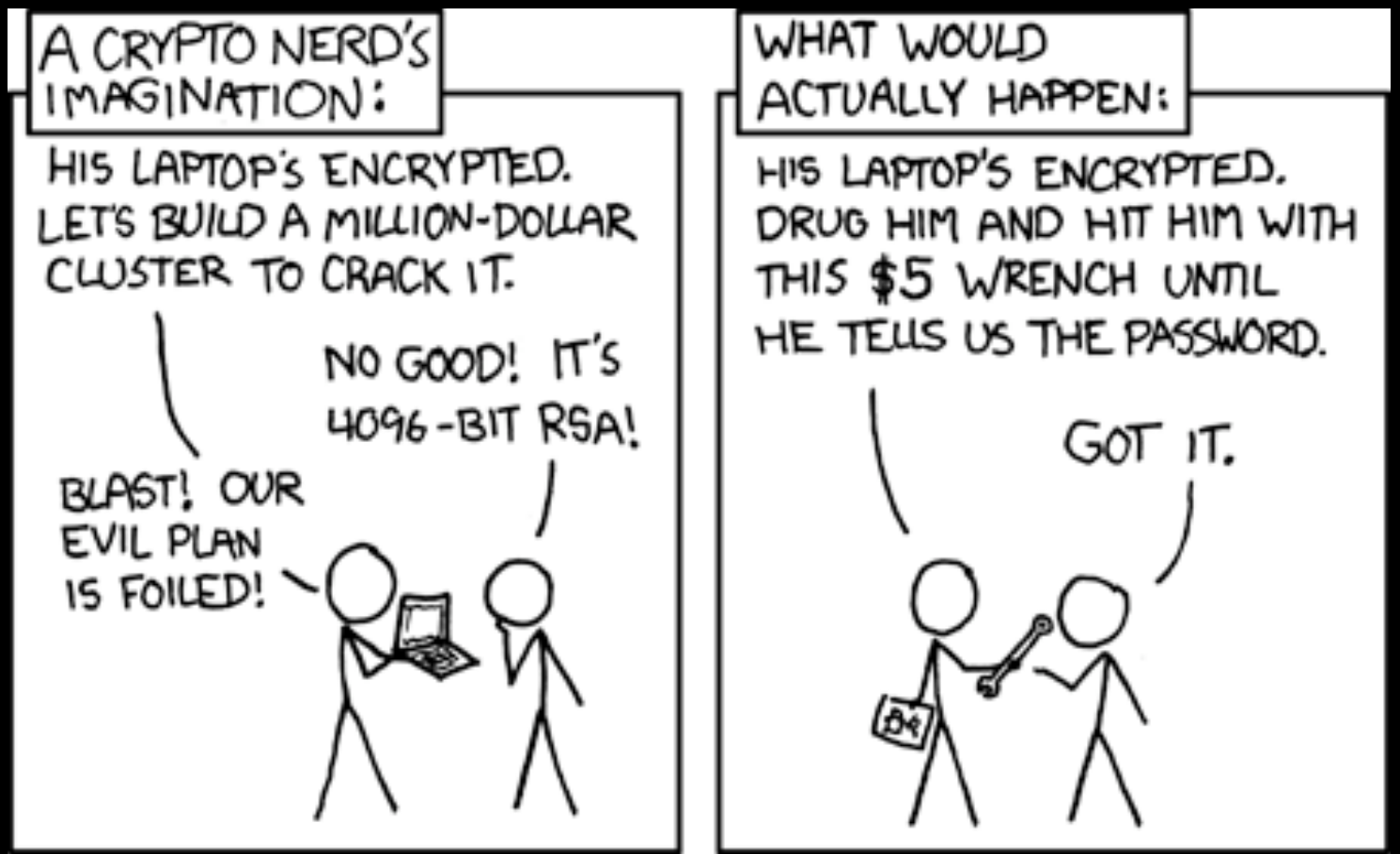
What are we trying to achieve?

Protection from

- a bored University student
- a tabloid journalist
- an organized criminal
- the NSA

Protection of

- a student's photo archive
- the heir to the throne's email
- the University financial system



http://xkcd.com/538/

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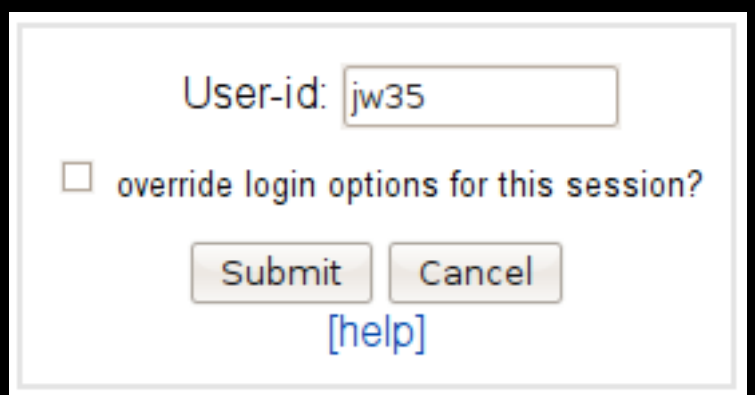
Option one: Forget passwords

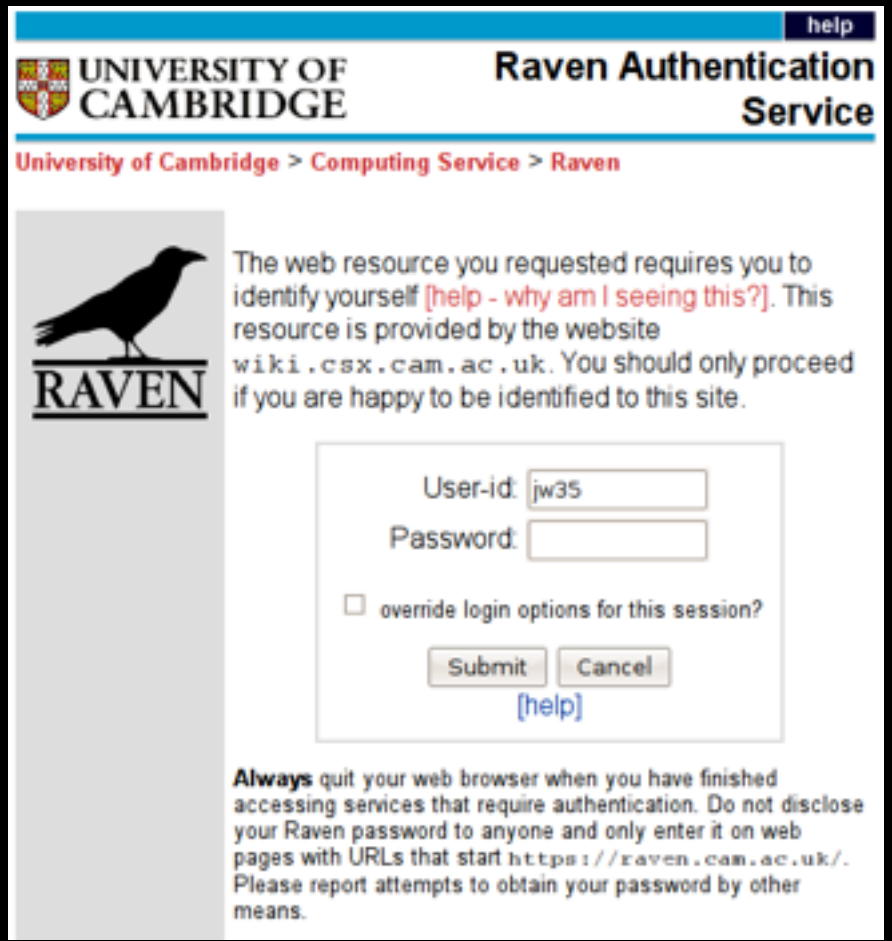


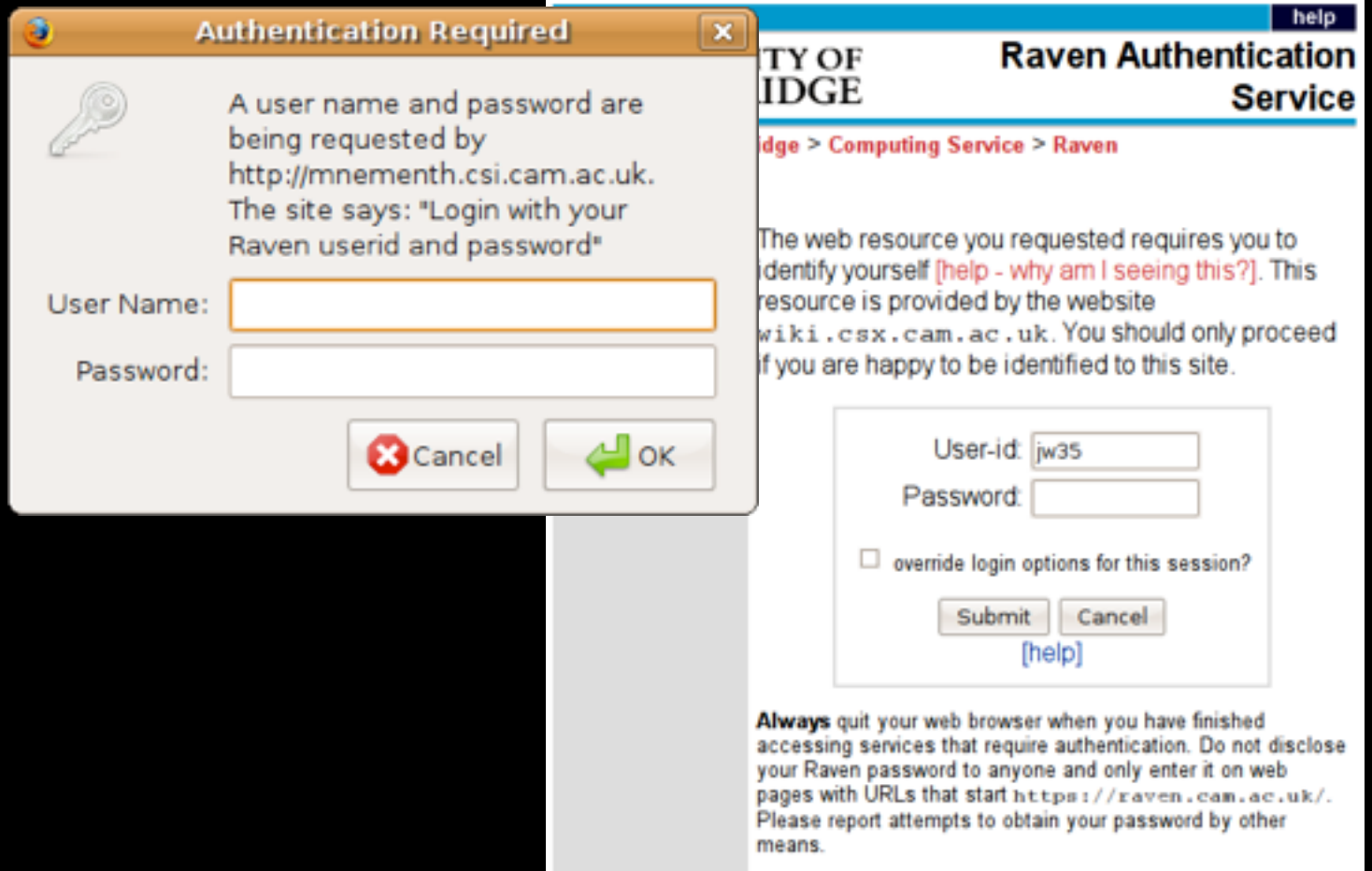
Option two:
A single, fixed password

Option three: Distribute a list

Option four: Central verification

Option five: Kerberos (or similar)


help
UNIVERSITY OF CAMBRIDGE
Raven Authentication Service
University of Cambridge > Computing Service > Raven
RAVEN
The web resource you requested requires you to identify yourself [help - why am I seeing this?]. This resource is provided by the website wiki.csx.cam.ac.uk. You should only proceed if you are happy to be identified to this site.
User-id: jw35
Password:
override login options for this session?
Submit
Cancel
[help]
Always quit your web browser when you have finished accessing services that require authentication. Do not disclose your Raven password to anyone and only enter it on web pages with URLs that start https://raven.cam.ac.uk/. Please report attempts to obtain your password by other means.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User Name:
Password:
Cancel
OK
help
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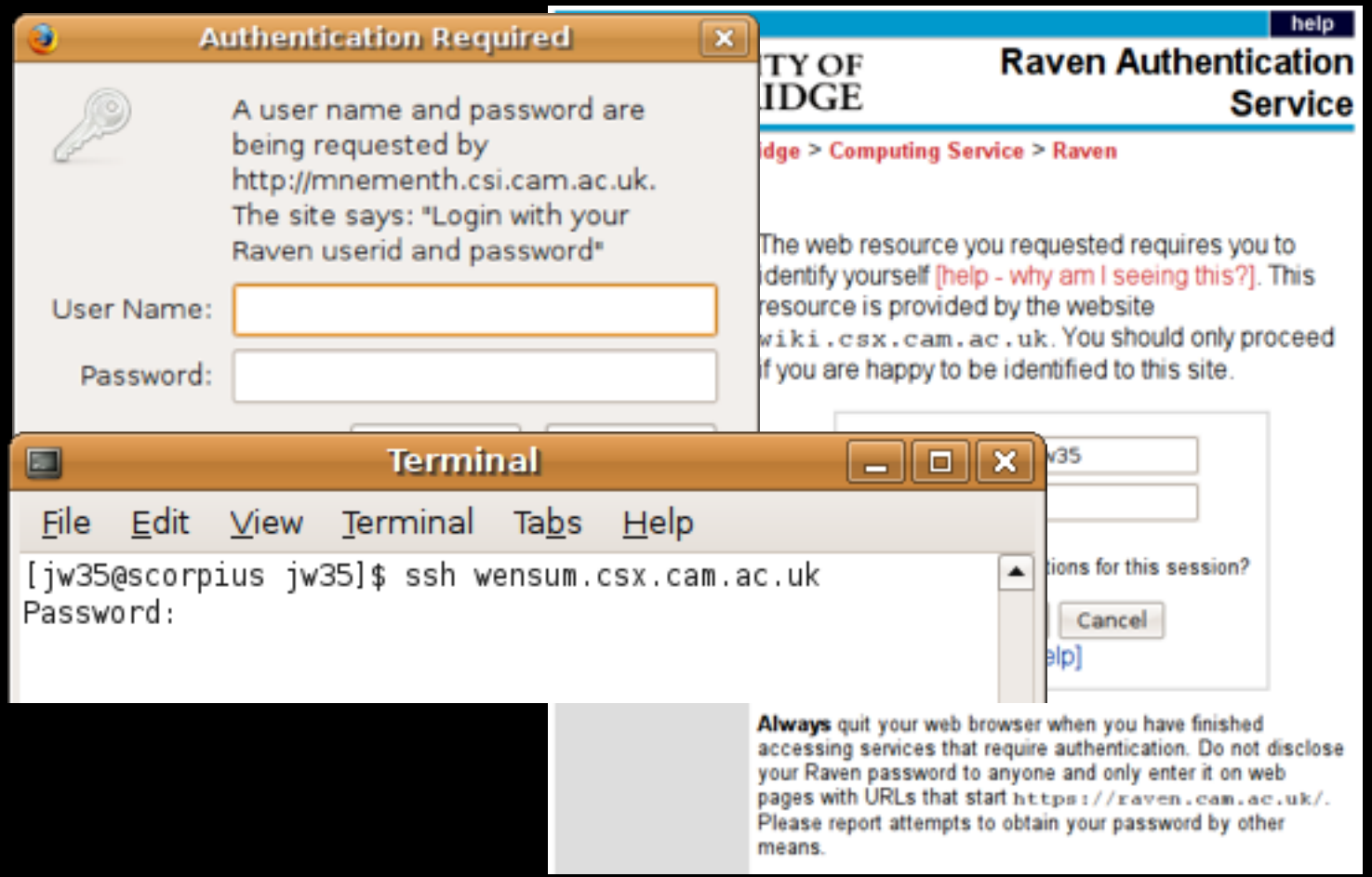
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User Name:
Password:
Terminal
File Edit View Terminal Tabs Help
[jw35@scorpius jw35]$ ssh wensum.csx.cam.ac.uk
Password:
help
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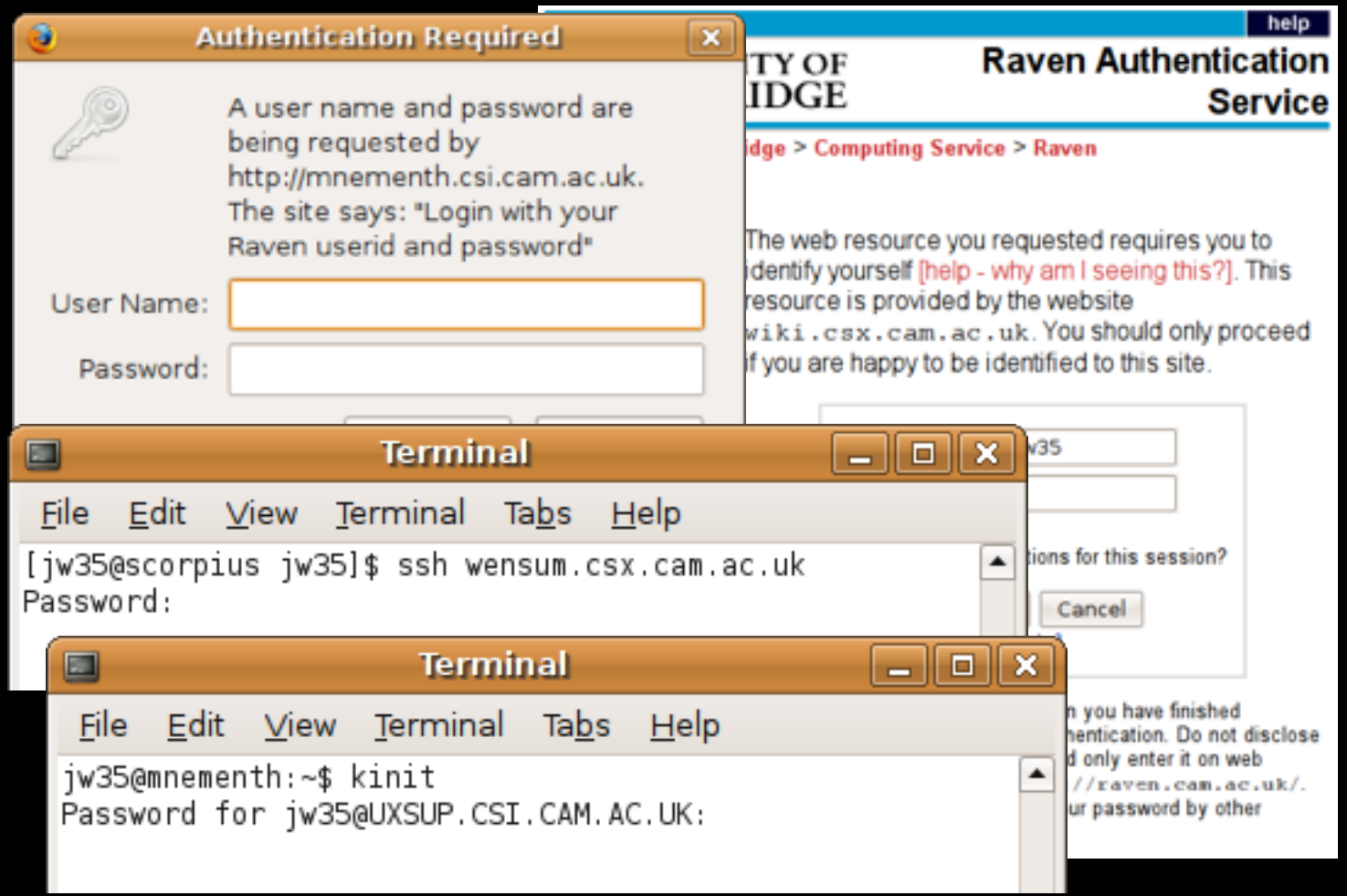
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Terminal
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[jw35@scorpius jw35]$ ssh wensum.csx.cam.ac.uk
Password:
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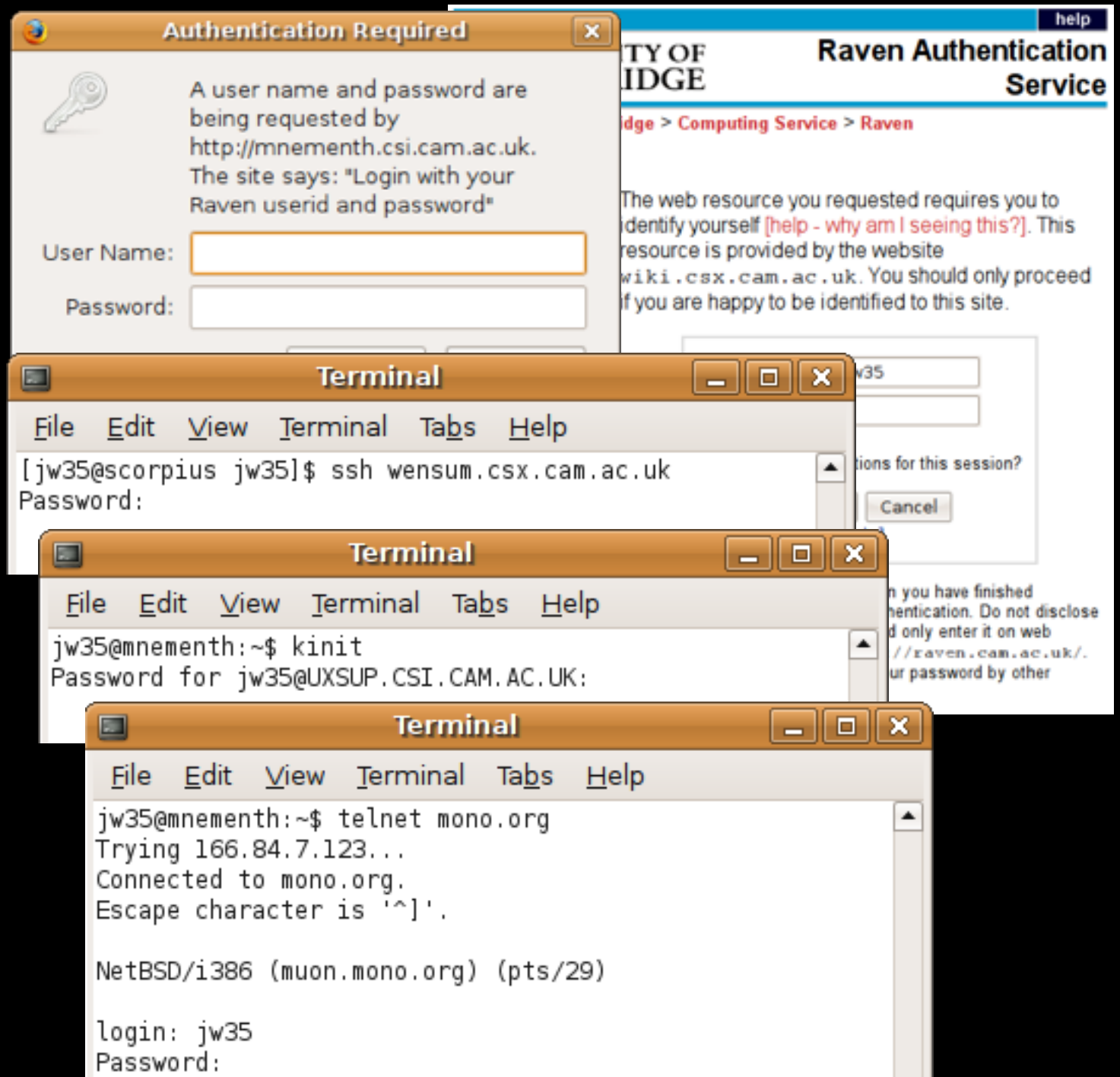
File Edit View Terminal Tabs Help
jw35@mnementh:~$ kinit
Password for jw35@UXSUP.CSI.CAM.AC.UK: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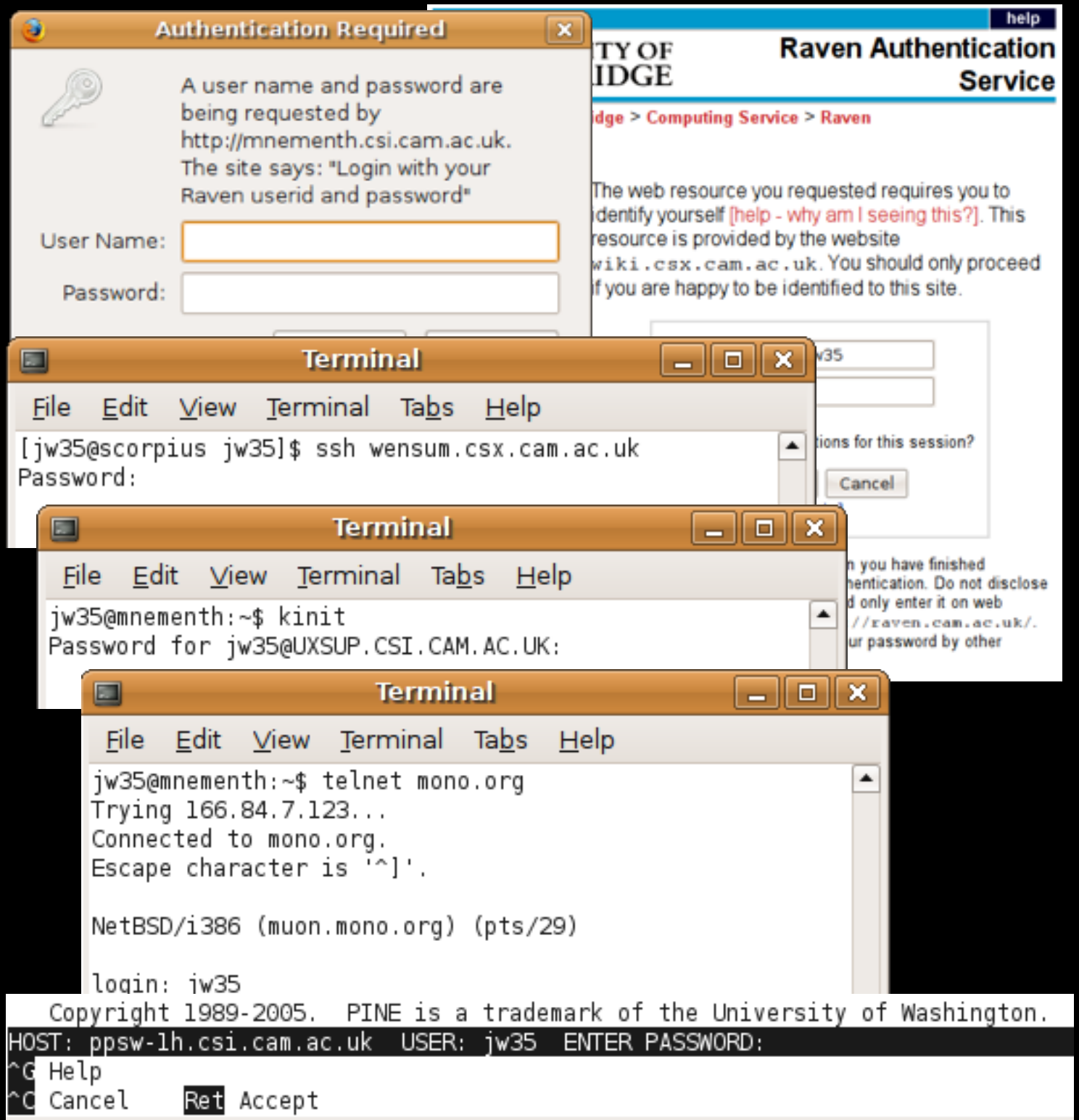
Password for jw35@UXSUP.CSI.CAM.AC.UK:
Terminal
File Edit View Terminal Tabs Help
jw35@mnementh:~$ telnet mono.org
Trying 166.84.7.123...
Connected to mono.org.
Escape character is '^]'.
NetBSD/i386 (muon.mono.org) (pts/29)
login: jw35
Password: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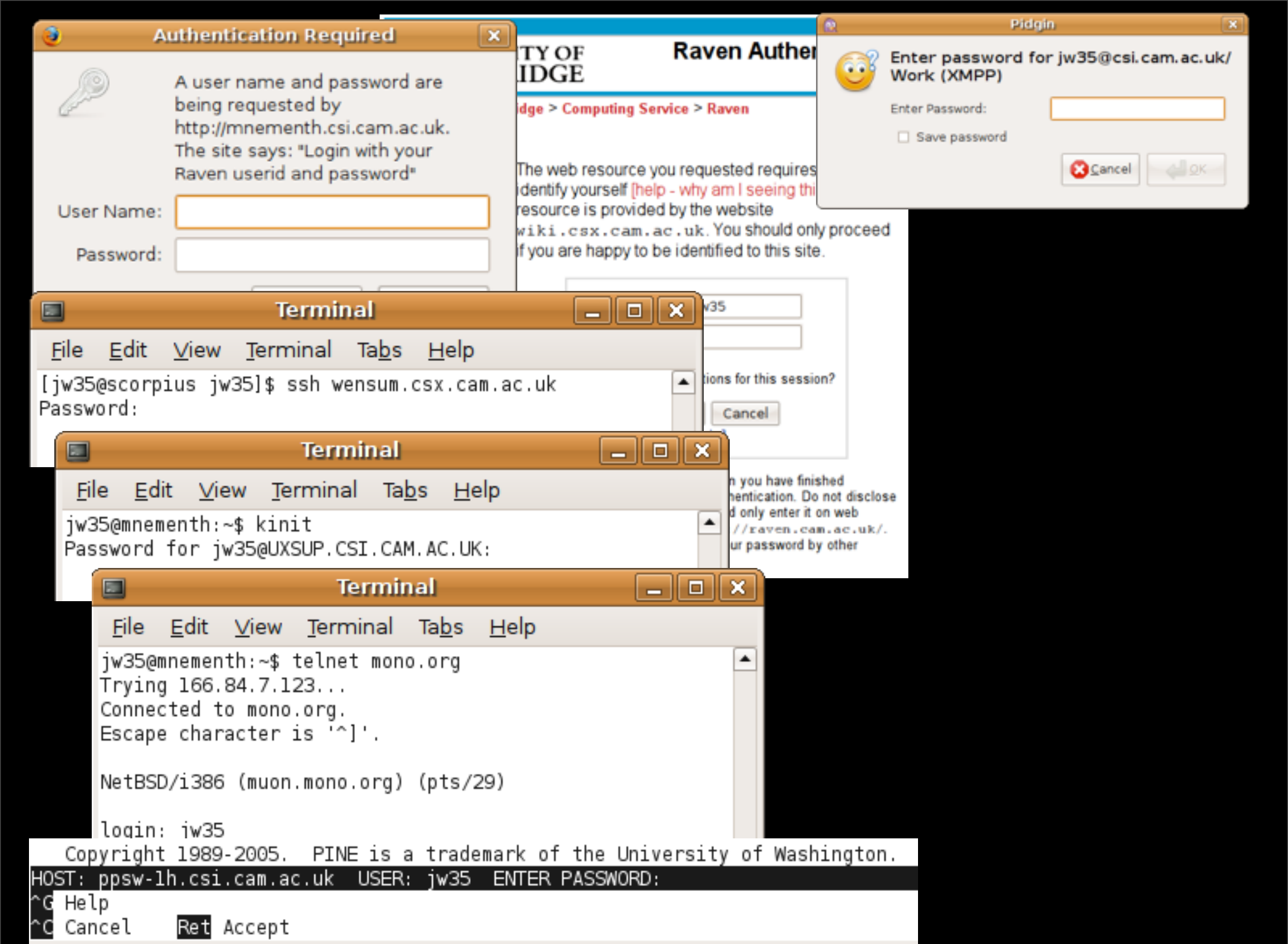
NetBSD/i386 (muon.mono.org) (pts/29)
login: jw35
Copyright 1989-2005. PINE is a trademark of the University of Washington.
HOST: ppsw-1h.csi.cam.ac.uk USER: jw35 ENTER PASSWORD:
^G Help
^C Cancel Ret Accept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if you are happy to be identified to this site.
Cancel
Pidgin
Enter password for jw35@csi.cam.ac.uk/Work (XMPP)
Enter Password:
Save password
Cancel
OK
Terminal
File Edit View Terminal Tabs Help
[jw35@scorpius jw35]$ ssh wensum.csx.cam.ac.uk
Password:
Terminal
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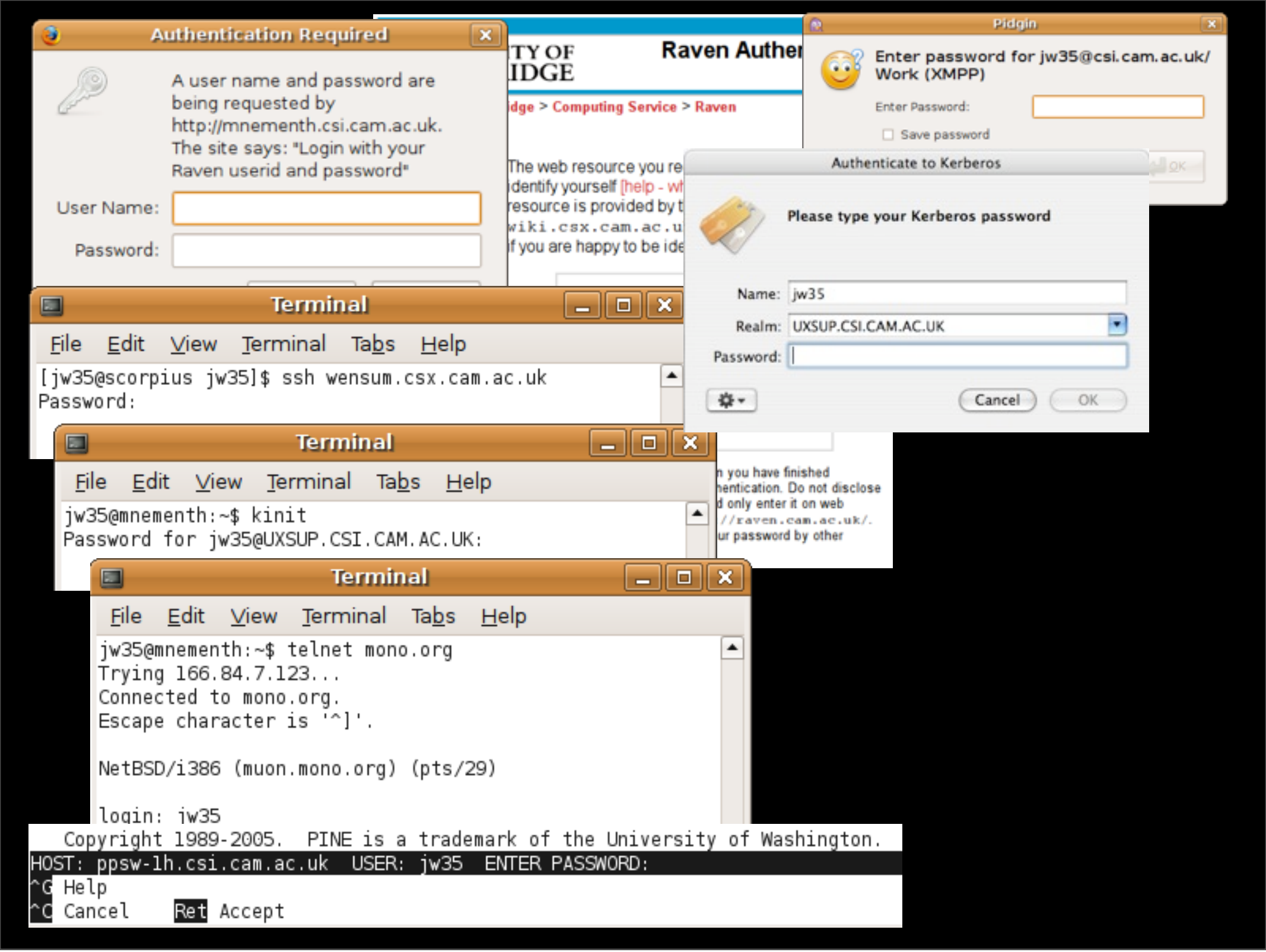
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User Name:
Password:
Raven Auther
Computing Service > Raven
Pidgin
Enter password for jw35@csi.cam.ac.uk/Work (XMPP)
Enter Password:
Save password
Authenticate to Kerberos
Please type your Kerberos password
Name: jw35
Realm: UXSUP.CSI.CAM.AC.UK
Password:
Cancel
OK
Terminal
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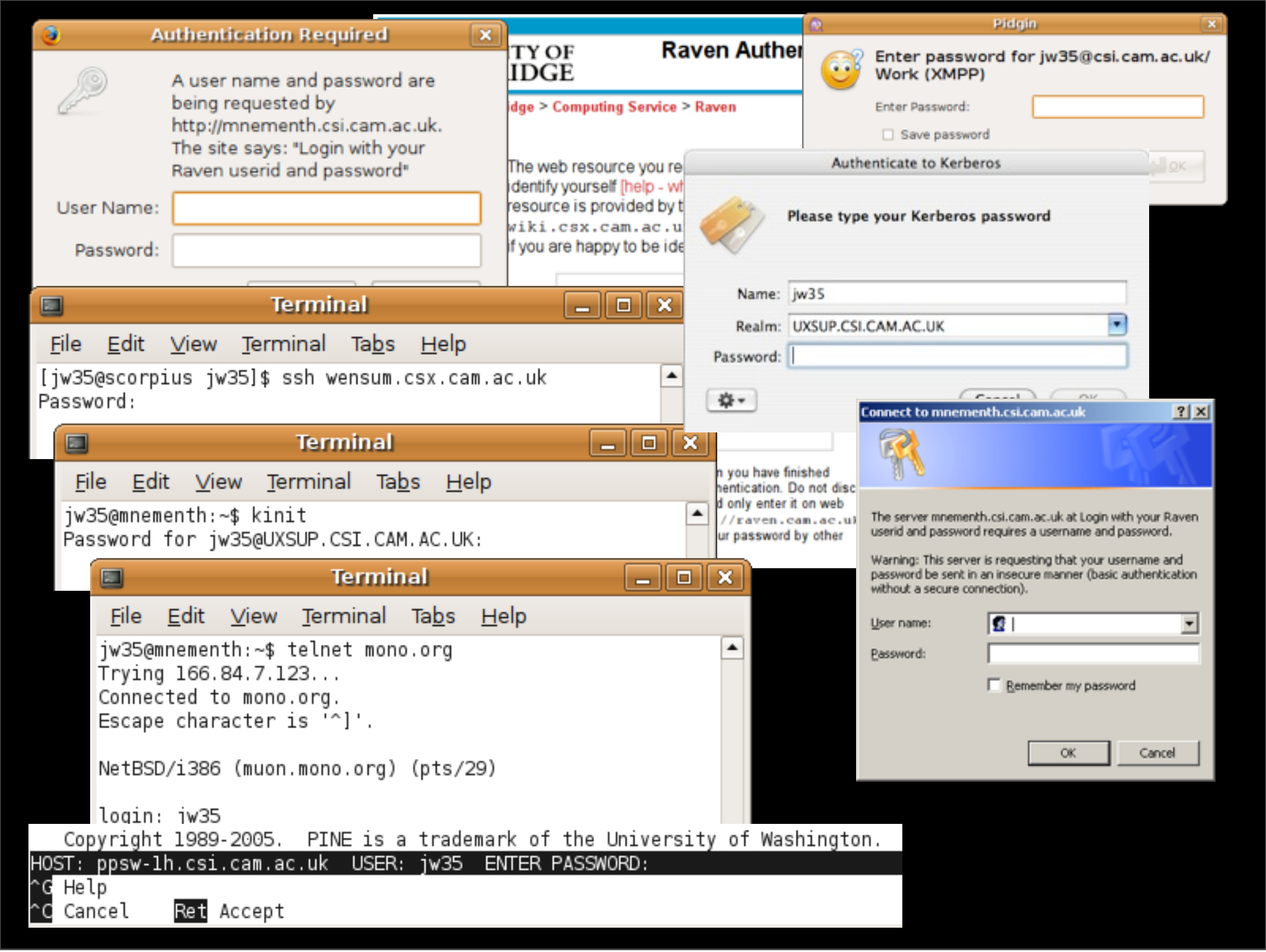
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Computing Service > Raven
Pidgin
Enter password for jw35@csi.cam.ac.uk/Work (XMPP)
Enter Password:
Save password
Authenticate to Kerberos
Please type your Kerberos password
Name: jw35
Realm: UXSUP.CSI.CAM.AC.UK
Password:
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The server mnementh.csi.cam.ac.uk at Login with your Raven userid and password requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
Password:
Remember my password
OK
Cancel
Copyright 1989-2005. PINE is a trademark of the University of Washington.
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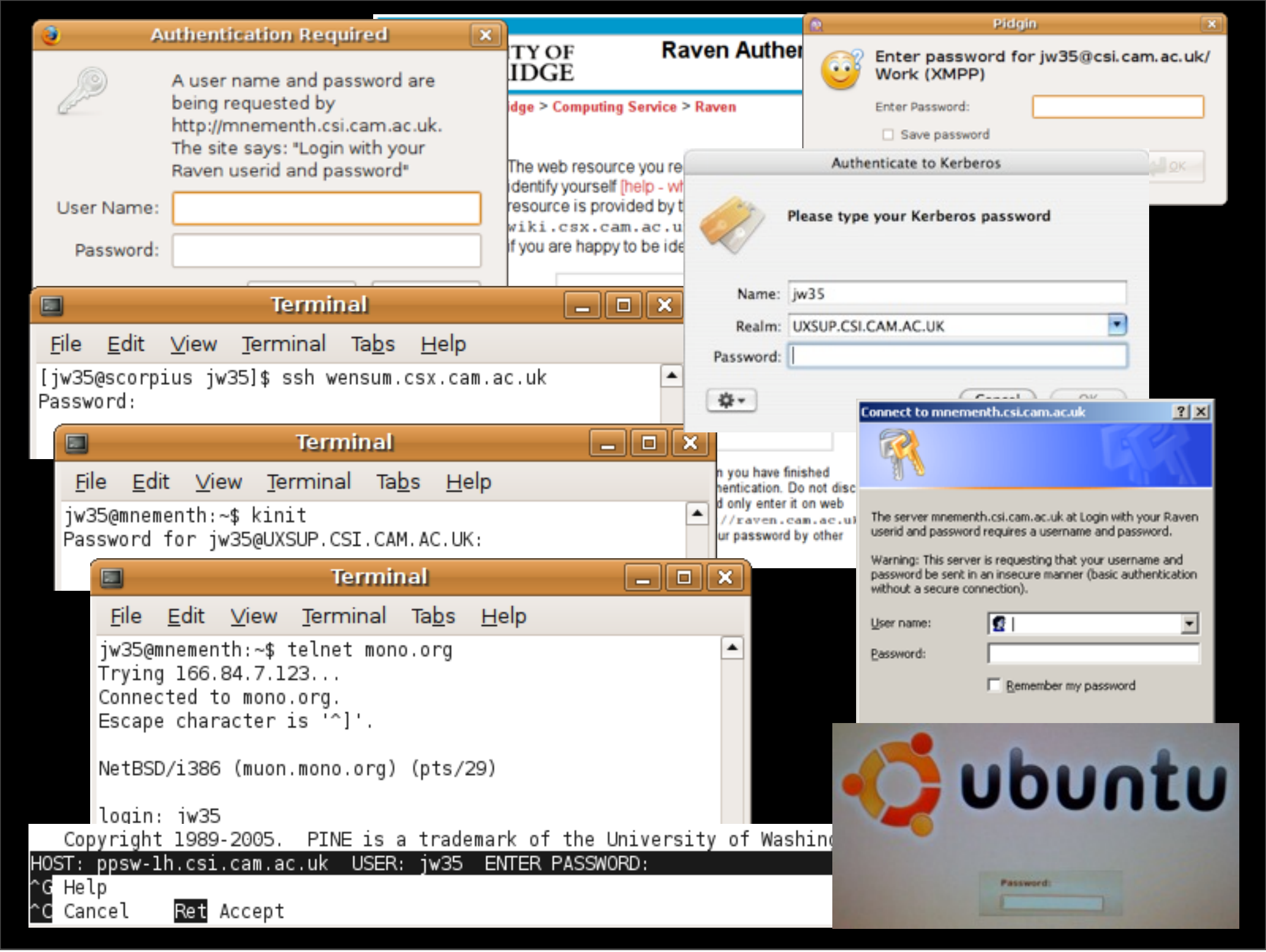
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Enter Password:
Save password
Authenticate to Kerberos
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Password:
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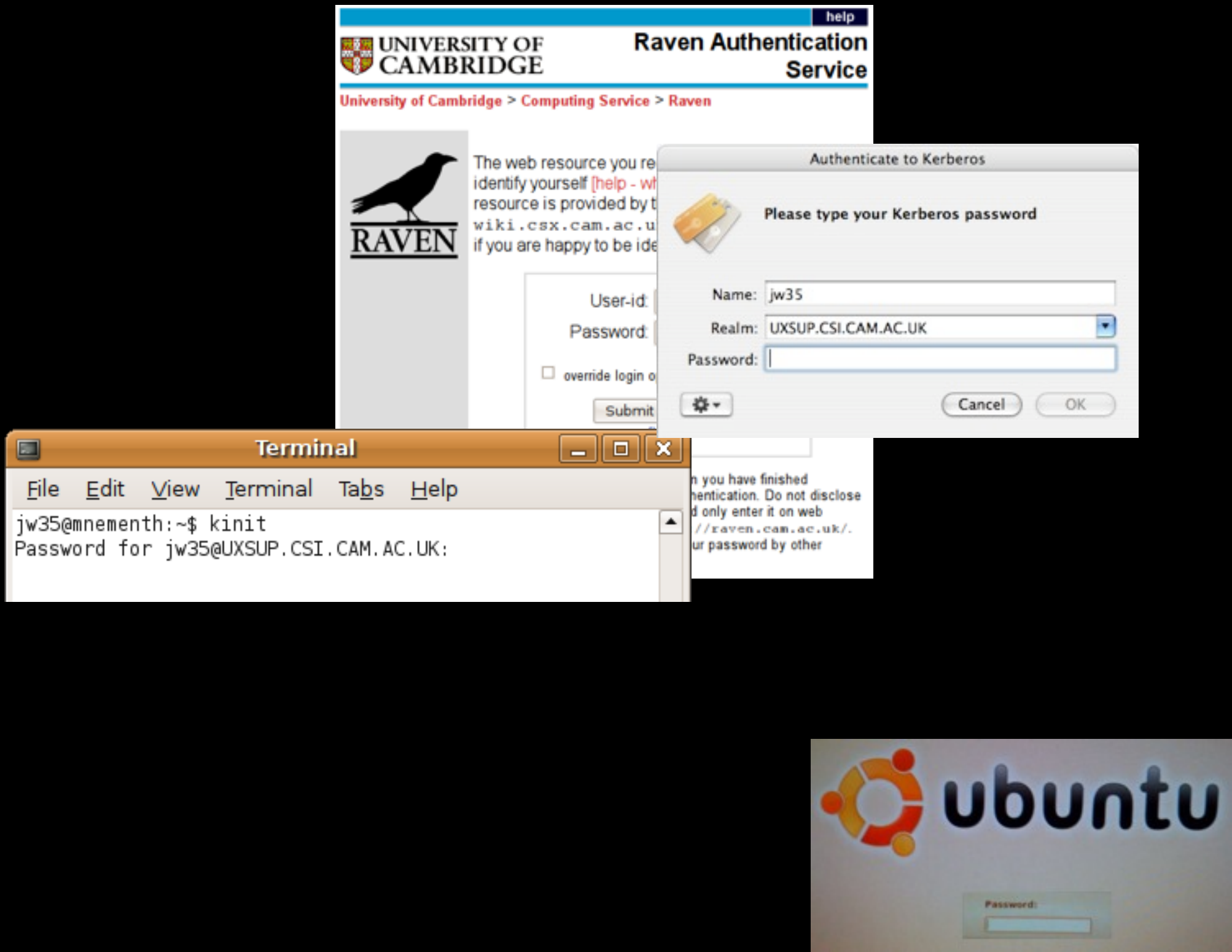
The server mnementh.csi.cam.ac.uk at Login with your Raven userid and password requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
Password:
Remember my password
Copyright 1989-2005. PINE is a trademark of the University of Washin
HOST: ppsw-lh.csi.cam.ac.uk USER: jw35 ENTER PASSWORD:
^G Help
^C Cancel Ret Accept
ubuntu

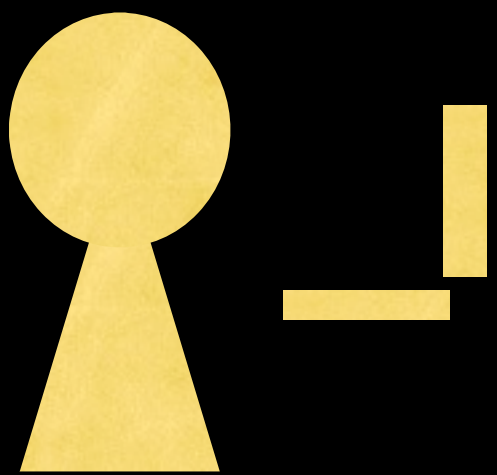

help
UNIVERSITY OF CAMBRIDGE
Raven Authentication Service
University of Cambridge > Computing Service > Raven
RAVEN
The web resource you re
identify yourself [help - wh
resource is provided by t
wiki.csx.cam.ac.u
if you are happy to be ide
User-id:
Password:
override login o
Submit
n you have finished
hentication. Do not disclose
d only enter it on web
//raven.cam.ac.uk/.
ur password by other
Authenticate to Kerberos
Please type your Kerberos password
Name: jw35
Realm: UXSUP.CSI.CAM.AC.UK
Password:
Cancel
OK
Terminal
File Edit View Terminal Tabs Help
jw35@mnementh:~$ kinit
Password for jw35@UXSUP.CSI.CAM.AC.UK:
ubuntu
Password:

Other problems

Other problems

Other problems

Other problems



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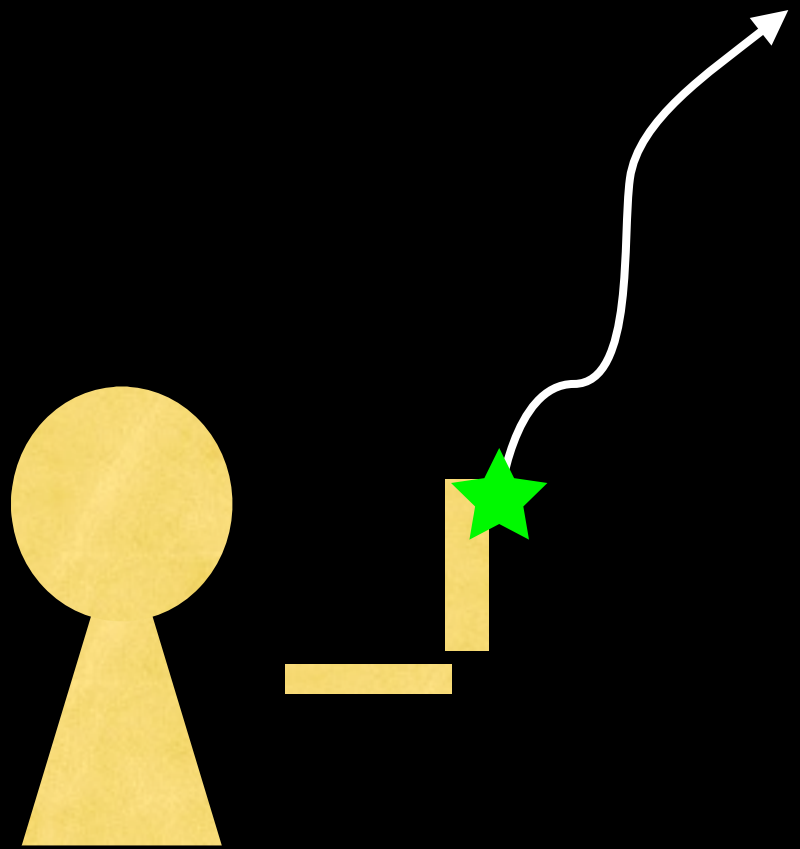

Where do we go from here?