

Assignment 2:

Access Control

Information and Communications
Security (WS 2008/2009)

Dr. Martin Reichenbach

T-Mobile Chair for
Mobile Business & Multilateral Security
Johann Wolfgang Goethe University Frankfurt a. M.
www.whatismobile.de

Authentication Mode

Choose the authentication mode.

Windows Authentication Mode

Mixed Mode (Windows Authentication and SQL Server Authentication)

Add password for the sa login:

Enter password:

Confirm password:

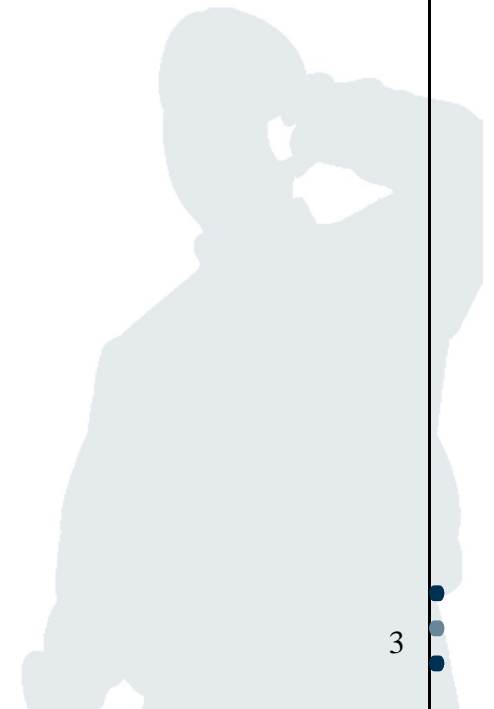
Blank Password (not recommended)

Help < Back Next > Cancel

- Which operating system did produce the following directory listing (hint: access control attributes)?

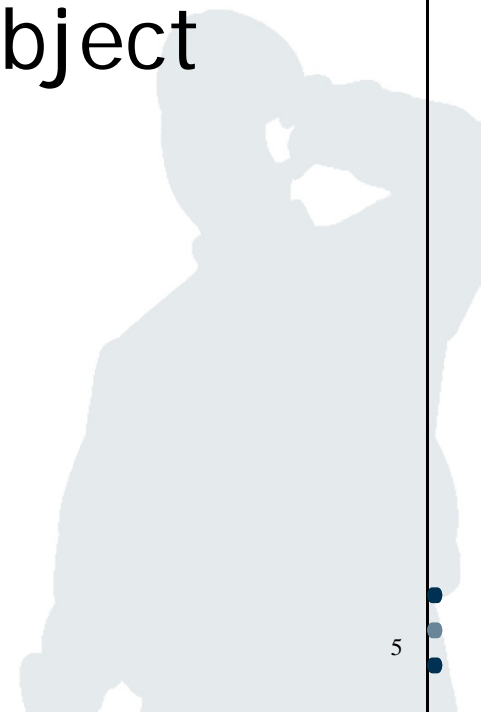
```
-rwxr-xr-x 1 student123 hrz 10764 Nov 27 1993 lsu118
-rw-r--r-- 1 student123 hrz 226 Nov 27 1993 lsu118.c
-rwxr-xr-x 1 student123 hrz 11679 Nov 29 1993 rk
-rw-r--r-- 1 student123 hrz 1624 Jul 18 1994 rk.c
-rwxr-xr-x 1 student123 hrz 12366 Nov 27 1993 t
```

- UNIX
 - AC:
 - User, group membership (hrz), global
 - Read, write execute

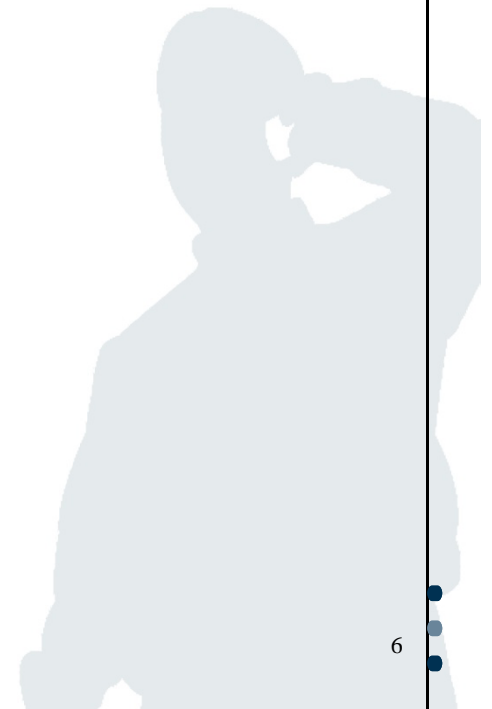


- Alice can read and write to the file x , can read the file y , and can execute the file z . Bob can read x , can read and write to y , and cannot access z .
 - Write a set of access control lists for this situation. Which list is associated with which file?
 - Write a set of capability lists for this situation. What is each list associated with?

- x Alice: read, write; Bob: read
- y Alice: read; Bob: read, write
- z Alice: execute
- Each list is associated with the object



- Alice's capabilities:
- x: read, write;
- y: read;
- z: execute
- Bob's capabilities:
- x: read;
- Y: read, write;



- Name a fundamental difference between the security model of Bell-LaPadula and the Chinese Wall Model. What are the additional security assets that the Chinese Wall Model is supposed to refer to?
- The Chinese Wall (CW) model is a model of a security policy that refers equally to confidentiality and *integrity*. It describes policies that involve a *conflict of interest* in business.

- The concept of roles has been introduced to you during the last lectures. Please describe this concept briefly.
- A role is a collection of job functions. Each role r is authorized to perform one or more transactions. The set of authorized transactions for r is written $trans(r)$.

- Please assume that you are working for the University of Frankfurt as a research assistant after having received your diploma. Please identify four different roles that you might be authorised to assume. Please note for each identified role one or two problems that might be encountered by a role-based access control model.