

Net Auth:

Supporting User-Based Network Service

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User-Based Network Service (UBNS)?

- Process servicing requests from user U runs under U's ID.
- Enable access controls to tailor service authorization to user.
- Enable the privilege separation to make sure each process' permission is minimized.

What is NetAuth?

- A network authentication and authorization framework supporting User Based Network Service(UBNS).
- Reduce the complexity of building UBNS applications.
- Applied the least privilege, remove vulnerabilities and enable significant control.

Motivation and Solution

➤ Problems of UBNS:

- ◆ security issues generally been ignored at the start of program construction.
- ◆ UBNS is difficult to apply after the application is constructed due to significant structural changes required to the application code.

➤ Solution: **NetAuth! !**

- ◆ A built-in mechanism to support UBNS.
- ◆ It focuses the application developer's attention on the key security task in application development.
- ◆ Simple mechanism to invoke network authentication and process change-of-ownership, thus encouraging the design of UBNS.

Summarization

Authors designed and implemented an upgraded security mechanism which is called NetAuth. The purpose to develop NetAuth is to reduce the complexity of building UBNS applications and increase the security level, flexibility to use, and the performance.

Appreciation

- Self-explained system overview diagram makes clear sense to readers.

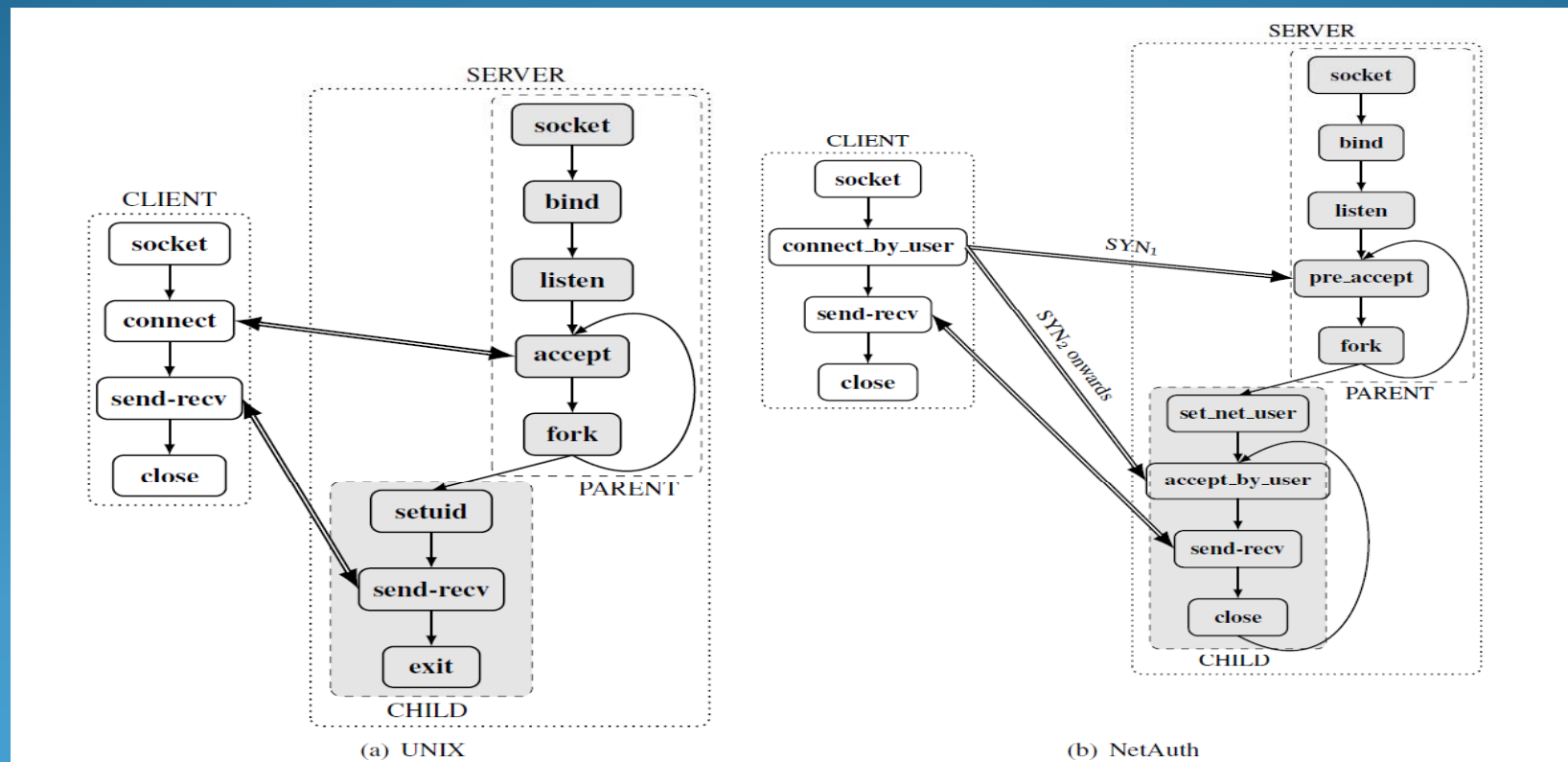


Figure 2: Sequence of system calls executed by a client and a server. The server forks a process to service a request;

Critique

➤ Lack of proof:

- ◆ Authors claimed that the NetAuth Mechanism could be expanded to allow different private keys for different uses. No sufficient proof has been provided.

E.g. “This mechanism can be expanded to allow different private keys for different uses, although we do not yet support that .”

Question:

- Would the NetAuth reduce the usability of the system/service?
- Does NetAuth mechanism will be widely deployed in the future?

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The End