Obligatory exercise #1

Jannis Schaefer (120914)

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Task

- Choose an operating system that does not have "Microsoft Windows" in its name, e.g. Mac OS, Linux, iOS, Android, Multics, Plan 9, Turaya, Solaris

- Find out and describe how the OS implements the concept of a trusted path (if it does)

- Include references to the sources that support your findings (scientific articles, developer documentation)

Solution

1   Trusted path

The trusted computing base (TCB) is the part of a computing system which contains the most vital security functionality, including but not limited to the enforcement of security policies.

A trusted path is a path for communication between the user and the TCB, which guarantees to the user that (s)he is connected to the TCB and to the TCB that the user is legitimate. [4, section 3.3.2.1.1]

One quite well-known example is the login-screen of the windows-operatingsystem, which can be activated by pressing `ctrl-alt-delete` simultaneously. This combination (which is an example of a secure attention key (SAK)) triggers a trap to the kernel which in turn starts the logon-prompt.

2   Trusted path in Solaris

In solaris, the trusted path consists of areas on the screen on which solely the operatingsystem itself may draw, as demonstrated in figure 1. In other words, for the user it is guaranteed that it is the operating system displaying when looking at the *trusted symbol*, *trusted stripe*, *trusted path menu* and the *window label stripe*. The *trusted label*'s primary use is to assure the user that (s)he indeed is connected to the TCB and will solely displayed if this is the case. [1]

Furthermore, the user has a form of a SAK when clicking the *trusted stripe* or any *trusted label* with the mouse. [2] As demonstrated on figure 1, the *trusted path menu* is then opened and sensitive operations are made available, guaranteeing the user that no malicious program imitates those functions.
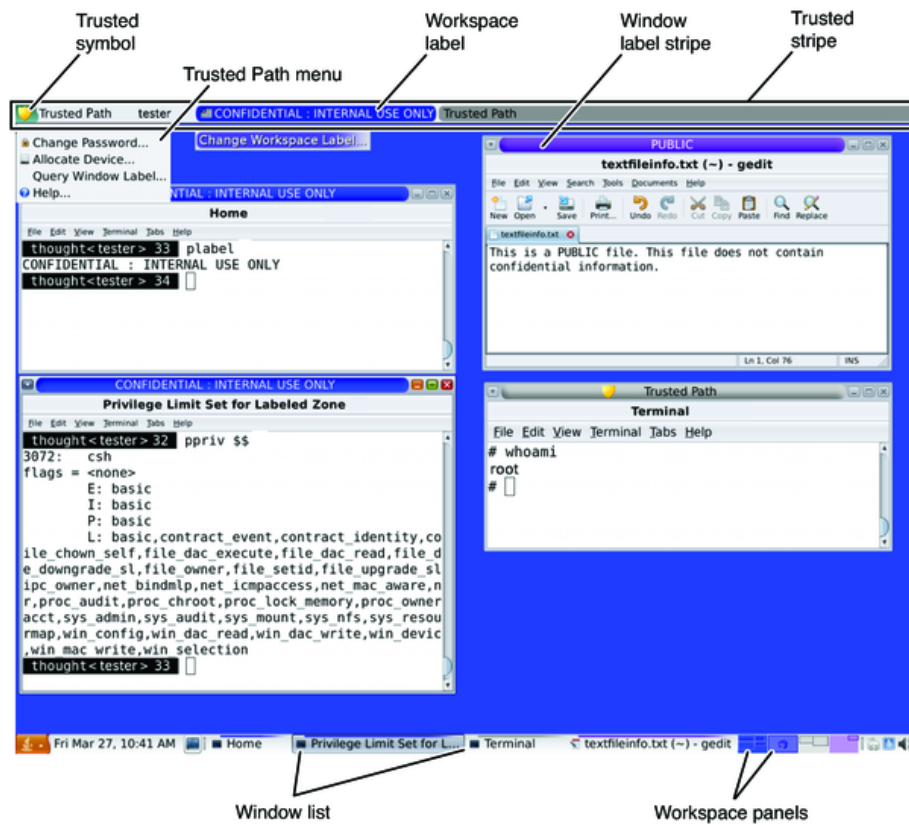
Figure 1: Workspace in a trusted Solaris JDS session. [3]

Bibliography

[1] Sun Microsystems. Trusted solaris user's guide. `http://docs.oracle.com/cd/E19109-01/tsolaris8/805-8115-10/805-8115-10.pdf`, December 2000.

[2] Sun Microsystems. The trusted solaris^{TM}8 operating environment. `http://www.oracle.com/technetwork/server-storage/solaris10/overview/ds-ts8-150124.pdf`, September 2014.

[3] Sun Microsystems. Trusted extensions provides discretionary and mandatory access control - oracle solaris trusted extensions guide. `http://docs.oracle.com/cd/E18752_01/html/819-0868/ugintro-14.html`, September 2014.

[4] Lili Qiu, Yin Zhang, Feng Wang, Mi Kyung, and Han Ratul Mahajan. Trusted computer system evaluation criteria. In *National Computer Security Center*, 1985.