

## **Discretionary Access Control**

In discretionary access control (DAC), the owner of the object specifies which subjects can access the object. This model is called discretionary because the control of access is based on the discretion of the owner.

Most operating systems such as all Windows, Linux, and Macintosh and most flavors of Unix are based on DAC models.

In these operating systems, when you create a file, you decide what access privileges you want to give to other users; when they access your file, the operating system will make the access control decision based on the access privileges you created.

## **Mandatory Access Control**

In mandatory access control (MAC), the system (and not the users) specifies which subjects can access specific data objects.

The MAC model is based on security labels. Subjects are given a security clearance (secret, top secret, confidential, etc.), and data objects are given a security classification (secret, top secret, confidential, etc.). The clearance and classification data are stored in the security labels, which are bound to the specific subjects and objects.

When the system is making an access control decision, it tries to match the clearance of the subject with the classification of the object. For example, if a user has a security clearance of secret, and he requests a data object with a security classification of top secret, then the user will be denied access because his clearance is lower than the classification of the object.