Linux Authentication and PAM

Face Recognition

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In computer security, authentication is the process of confirming someone is who they claim to be when attempting to access any kind of computer system through the confirmation of something they have, something they know, or something they are. It is important to always maintain and improve the integrity of computer systems’ authentication schemes as new security threats arise. The Linux kernel invokes the standard Unix authentication process across the majority of its applications. However, as new forms of authentication are developed, it is inefficient to individually reconfigure applications such that the desired authentication scheme is incorporated. The PAM (Pluggable Authentication Module) mechanism in Linux integrates various low-level authentication schemes into a high-level API, allowing programs that require some form of authentication to be developed independently from the desired authentication scheme. This integrated research aims to demonstrate the function and importance of PAM in Linux authentication with the invocation of a face recognition PAM security module. Real-time face detection and recognition is performed using the Haar Cascade Classifier and the LBPH (Local Binary Patterns Histograms) feature-based face recognition method.