

# ThinkFinger

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# ThinkFinger

## 1 What's it all about?

- Context
- Targets

## 2 The Technical Bits: Design and Architecture

- Division of Tasks
- User Space Driver
- Pluggable Authentication Module (PAM)

## 3 The Big Picture

- Installation
- Compatibility



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- Supported laptops:
  - ASUS
  - Dell
  - IBM
  - Lenovo
  - Toshiba



# ThinkFinger Facts

- User space driver for the UPEK/SGS Thomson Microelectronics fingerprint reader.
- Supported laptops:
  - ASUS
  - Dell
  - IBM
  - Lenovo
  - Toshiba
- Also supported: external keyboards with the UPEK fingerprint reader.



# The Same Old Story

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- We need an Open Source solution.



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# What It Needs – What We Get

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# What It Needs – What We Get

- Score off the proprietary closed source driver.
- Quick and easy authentication: Swipe and you're done.
- It's a gadget: Bring the WAF<sup>1</sup> to a new level.

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  - `libthinkfinger`
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- Focus for `libthinkfinger`: Keep dependencies at a minimum.
- Keep complex parts within `libthinkfinger`, offer functions to acquire and verify fingerprints.



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- Example application: `tf-tool`



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- Allow concurrent authentication:
  - Password
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- Return PAM\_USER\_UNKNOWN if no biometric identification record is stored (/etc/pam\_thinkfinger/<login>.bir).

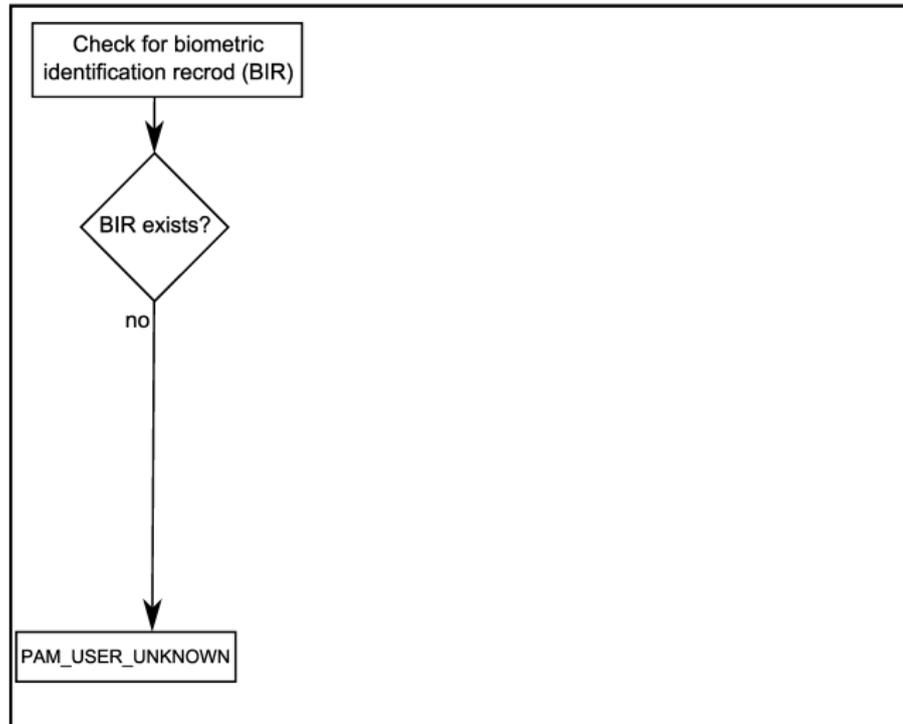


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- Allow concurrent authentication:
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  - Swipe
- Return PAM\_USER\_UNKNOWN if no biometric identification record is stored (/etc/pam\_thinkfinger/<login>.bir).
- Use uinput to send synthetic <CR> after swipe.

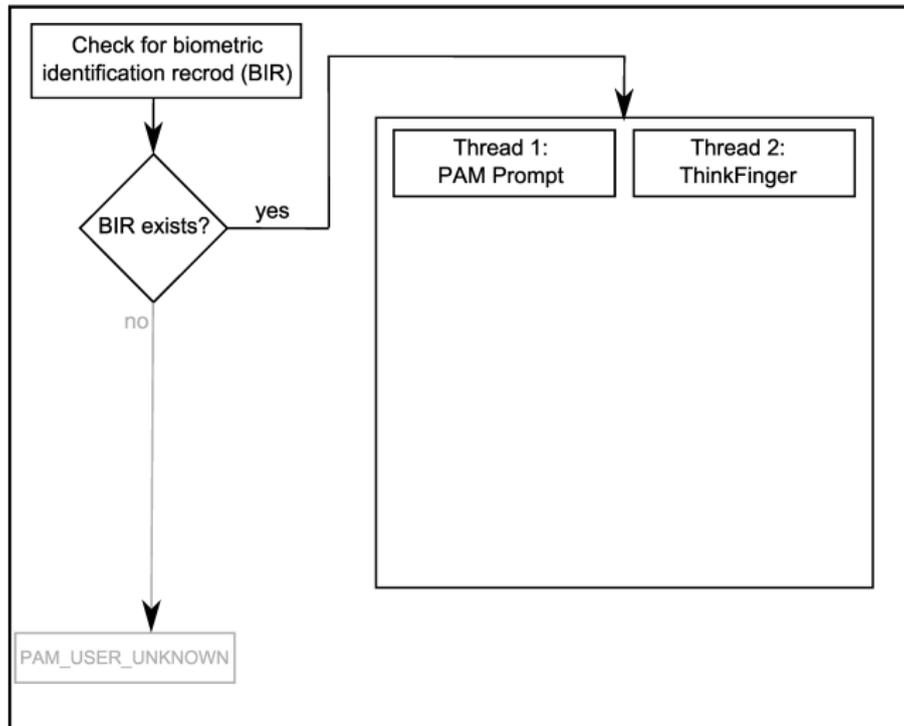


## Pluggable Authentication Module (PAM)

`pam_thinkfinger (pam_sm_authenticate)`

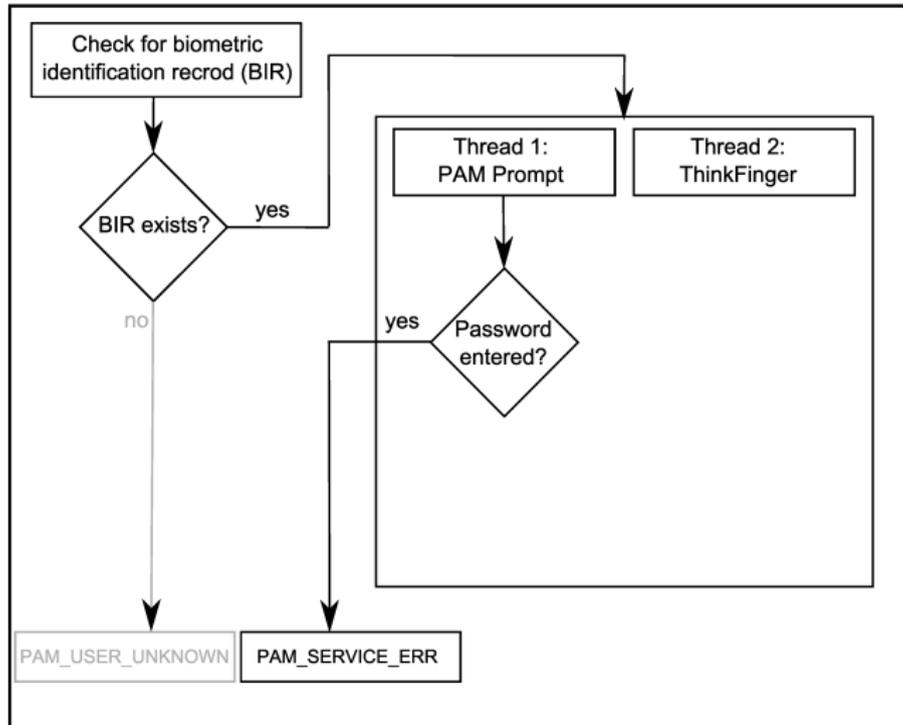
Pluggable Authentication Module (PAM)

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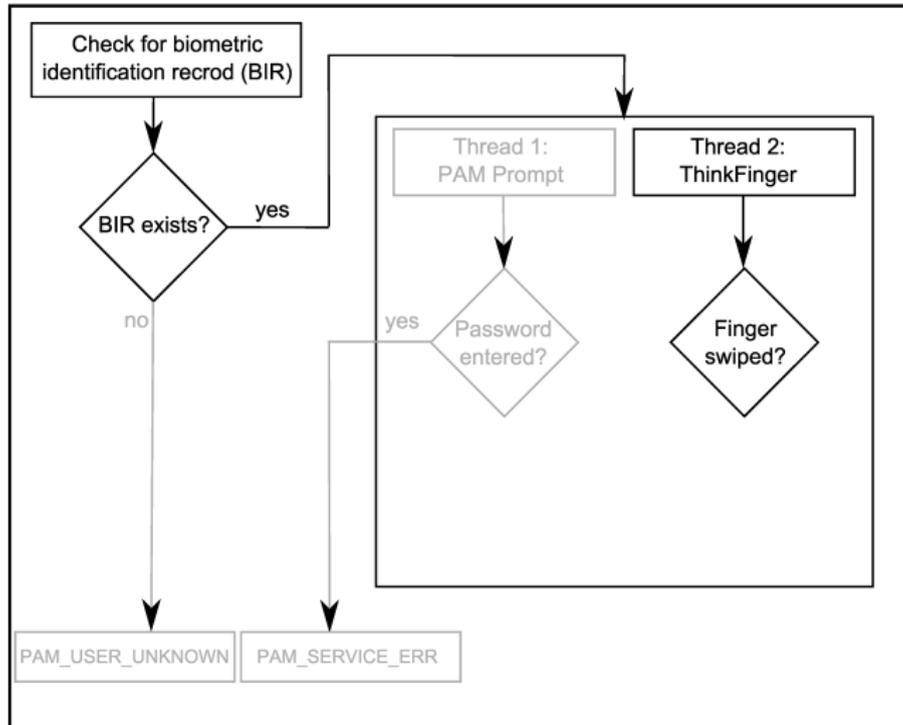
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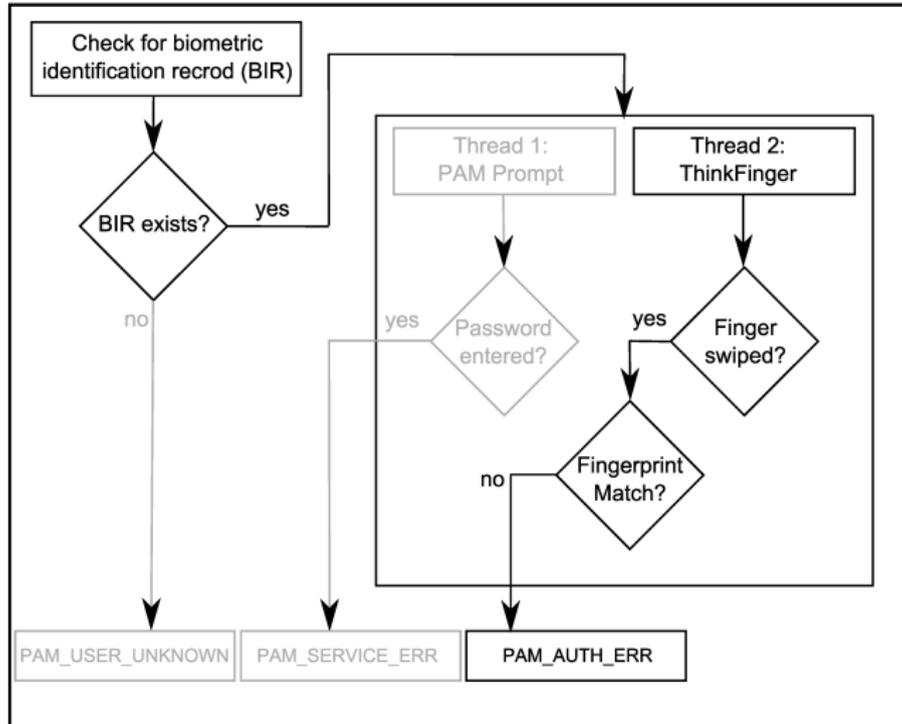
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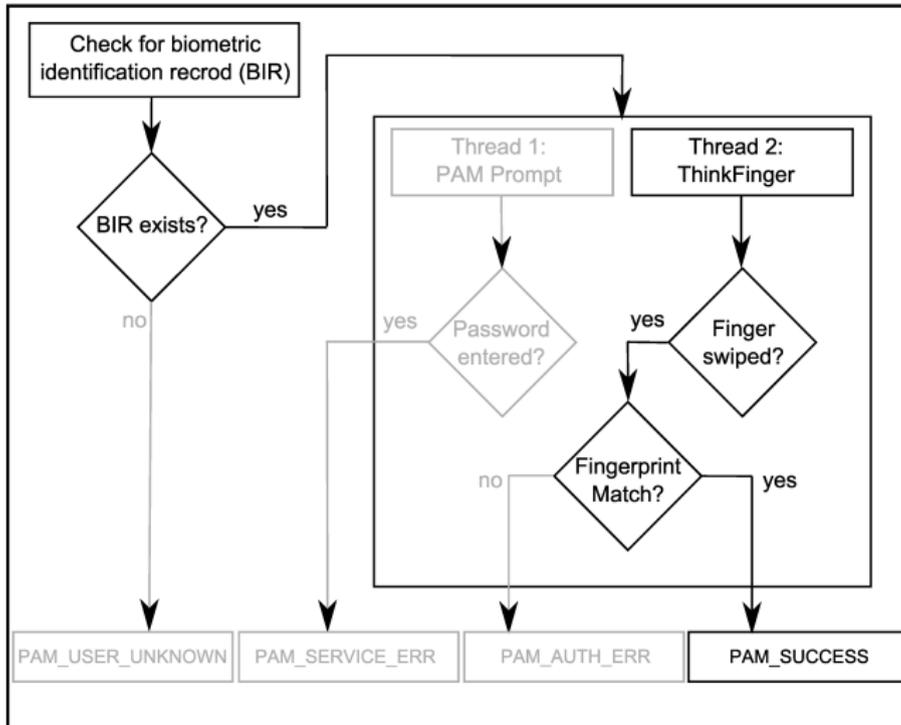
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# Quick & Easy

- Build requires `pam-devel` and `libusb`



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./configure && make && make install
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./configure && make && make install
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- Add one line to `/etc/pam.d/common-auth`:  

```
auth sufficient pam_thinkfinger.so
```



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# Applications

- Console
  - login(1)
  - su(1)
  - sudo(8)

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<sup>1</sup>requires patches



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  - GDM
  - gnomesu
  - gnome-screensaver<sup>1</sup>

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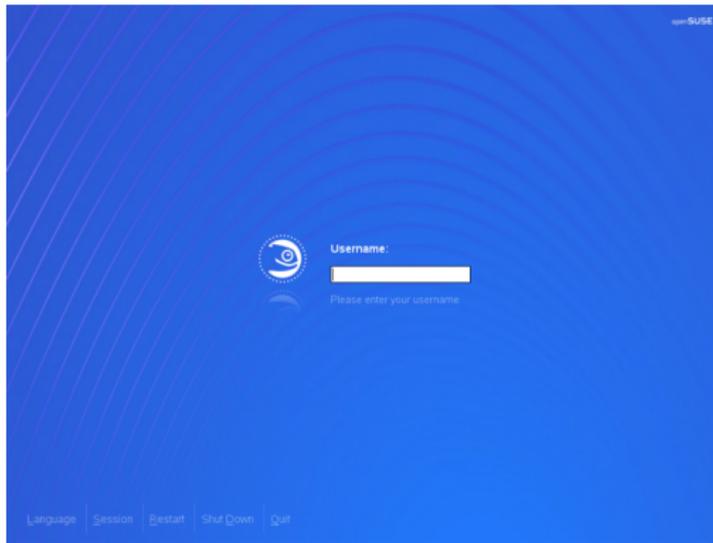
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- Upstream developers (GNOME and KDE) are about to improve the support.

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# Demo



# ThinkFinger

Thanks for coming!

- Project page: <http://thinkfinger.sourceforge.net>
- List: [thinkfinger-devel@lists.sourceforge.net](mailto:thinkfinger-devel@lists.sourceforge.net)

