

# What's RFID?

Radio-frequency identification (RFID) is the use of a wireless non-contact system that uses radio-frequency electromagnetic fields to transfer data from a tag attached to an object, for the purposes of automatic identification and tracking.

## What is NFC

Near field communication (NFC) is a set of communication protocols that enable two electronic devices, one of which is usually a portable device such as a smartphone, to establish communication by bringing them within 4 cm (2 in) of each other.

## RFID Hardware

### Reader/Writer

#### Touch-a-tag



C3L is in possession of several [Touchatag](#) readers which work fine on Linux (after some hacking)

If you want to get one for yourself, you should hurry up because the manufacturer closes it's store on the 31. December '12. If you order from Benelux you should visit [getdigital.de](#). They sell and deliver them very fast.

#### ACR122U



A good piece of hardware with a good linux support.

#### Proxmark



Works like a charm under linux!

# NFC Tags



## NTAG216

Those are the NFC tags we use to chip our Hackerspace passports.

Capacity: 888 Byte.

Standard: NFC Forum Type 2 Tag ISO 14 443 A

```
nfc-mfultralight r dump.mfd  
nfc-mfultralight w dump.mfd
```

# RFID Software

## libnfc

```
sudo apt-get install libnfc-dev
```

## RFIDIOT

A bunch of [python scripts](#). Preinstalled on Kali linux.

## mfoc

Mifare Classic Offline Cracker is a tool that can recover keys from Mifare Classic cards.

[Website](#)

## mfucuk

Installation procedure was from 2012. Now the installation is straight forward!

MFCUK - MiFare Classic Universal toolKit. Toolkit containing samples and various tools based on and around libnfc and crpto1, with emphasis on Mifare Classic NXP/Philips RFID cards.

Special emphasis of the toolkit is on the following:

- mifare classic weakness demonstration/exploitation
- demonstrate use of libnfc (and ACR122 readers)

- demonstrate use of Crpto1 implementation to confirm internal workings and to verify theoretical/practical weaknesses/attacks

## Website

## mloc & mlocuk installation guides

### Ubuntu

Install the pcscd package.

```
sudo apt-get install pcscd
```

Install libccid

```
sudo apt-get install libccid
```

Install autoreconf

```
sudo apt-get install autoreconf
```

Install [libnfc-1.3.9](#)

```
autoreconf -vis  
./configure  
make  
sudo make install
```

Download [mloc](#)

```
autoreconf -vis  
./configure  
make  
sudo make install
```

If you encounter problems after the execution, do this:

```
sudo ln -s /usr/local/lib/libnfc.so* /usr/lib/
```

Now mloc should be up and running.

Download and install [libnfc-1.5.1](#)

```
autoreconf -vis  
./configure  
make  
sudo make install
```

Download [mfcuk](#)

```
svn checkout http://mfcuk.googlecode.com/svn/trunk/ mfcuk-read-only
```

Symlink shared object libs!

```
sudo ln -s /usr/local/lib/libnfc.so* /usr/lib/
```

Install mfcuk

```
autoreconf -vis  
automake --add-missing  
autoconf  
./configure
```

Now open the Makefiles in /mfcuk-read-only & /mfcuk-read-only/src and search for the line LIBS =  
.Replace it with:

```
LIBS = $(LIBNFC_LIBS)
```

Now...

```
make  
sudo make install
```

Final step

```
cd /mfcuk-read-only/src  
cp data /usr/local/bin
```

Now you should be ready for ownage!

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