uCreate NFC SDK for Desktop

Content of the downloaded compressed file

- Installation packaged for Windows, macOS and Linux

- Source code

- Runtime java application for desktop use

The provided SDK Java sources are provided also in its compiled form as NFC desktop application allowing to read and write NFC NDEF data to and from supported NFC tags. The developer can use the framework implementation to adapt the source code to e.g. adding functionality or modify the look and feel to their requirements.

The uCreate NFC for Desktop SDK supports uTrust Reader families uTrust37xx and uTrust 47xx.

For detailed information on the different supported tags, their individual capabilities, and specific commands, please consult the respective NFC tag datasheets from the IC manufacturer and the provided source code of this SDK.

Installing the SDK

The NFC Desktop App and SDK files offer the same functionality as the uCreate SDK version for mobile devices. Follow below procedures to install the App on your PC´s Desktop.

Windows

Double click the "uCreate NFC Desktop-1.0.0.msi" file and follow the instructions to install the app. After the installation, the uCreate Desktop NFC icon is available on your PC's desktop.

Installation for macOS:

Right click the provided PKG file, choose "Open With", then "Installer.app (default)".

Choose Open and follow the instructions to install the app.

After the successful installation, you will see the uCreate Desktop NFC icon on your desktop.
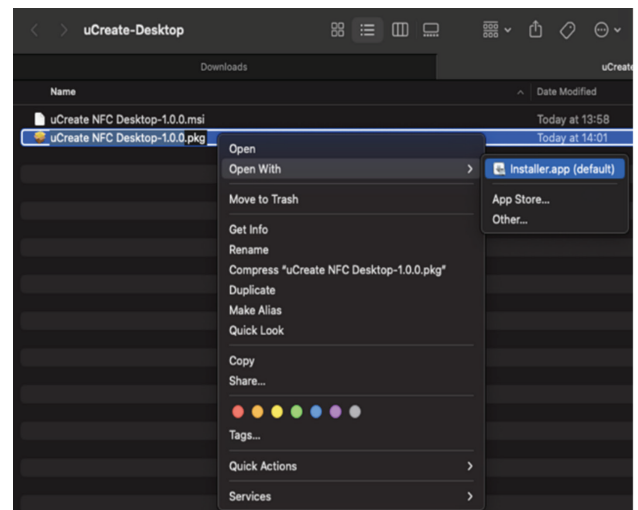
Using the App

Connect an Identiv contactless reader-writer via USB. Start the App, select the desired Identiv contactless reader-writer from the dropdown menu and click the Connect Reader button. Place a supported NFC tag on the reader and click the Connect Tag button.

- There are 3 different tabs (pages) available at the bottom of the App.
  READER (tag specific commands)
  MEMORY (contained tag data)
  NDEF (NFC Forum defined NFC-Data Exchange format.

- After reading the basic tag information, you can either select the Memory tab or the NDEF (NFC Data Exchange Format) tab. NDEF specifies a common data format for NFC Forum compliant devices and NFC Forum compliant tags.
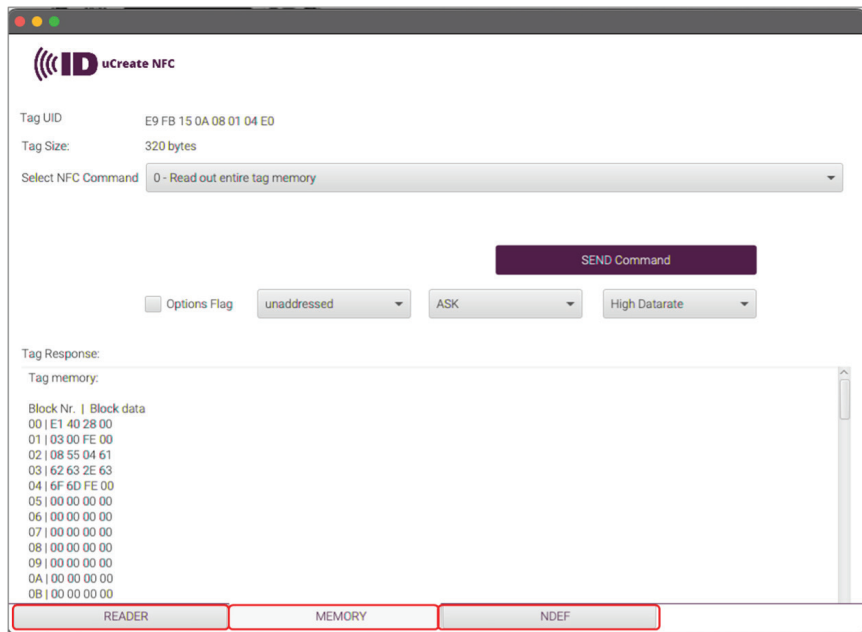
Find more information here:

- NFC Forum: Data Exchange Format (NDEF) Technical Specification

- Wikipedia: Near-field communication (NFC)

Using the READER tab

NFC Forum type detection, displayed Information, and available commands

The SDK supports NFC Forum types 2, 4, and 5 tags.

After reading and decoding the type of NFC tag in the RF-field, different tag and standard-specific commands are available and can be selected in the drop-down list.

Scrolling down the command window reveals all implemented commands.
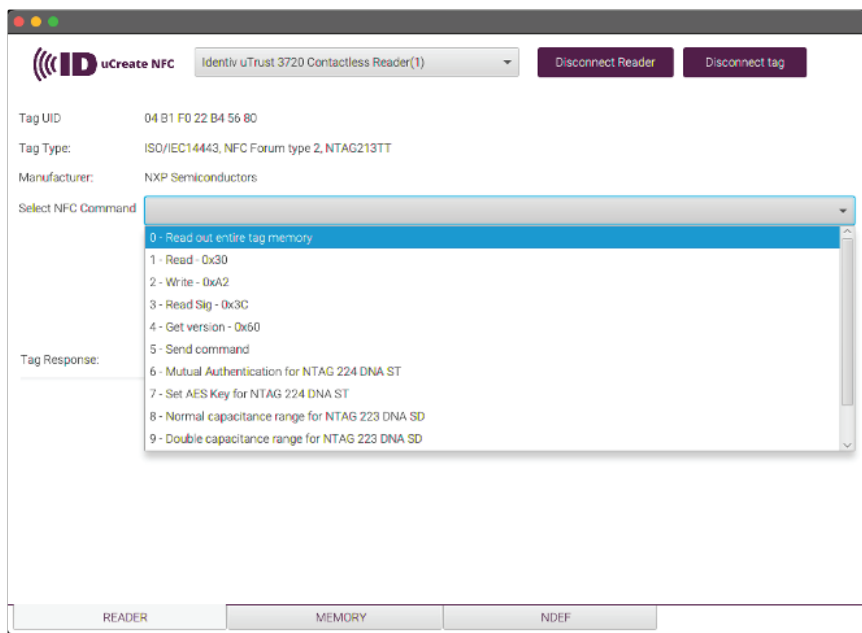
Examples reading – writing different NFC Forum type tags:

NXP NTAG®213TT - NFC Forum Type 2 Tag - ISO/IEC 14443A

Bring a supported NFC tag in proximity of the Identiv contactless reader RF-field and press the READ Tag button (its recommended to place the tag on the reader´s surface)

Basic NFC tag information like product name, unique identifier (UID), tag IC manufacturer and NFC Forum type are displayed after the tag information has been read and decoded.

Depending on the discovered NFC tag and its capabilities, different commands can be selected and sent to the tag as shown in the following example images.

READER Tab Example:

Command 0 – (Read entire memory) selected and executed

Tab Memory selected

Memory blocks and their content (data) is displayed. Scroll down to display all read out information.
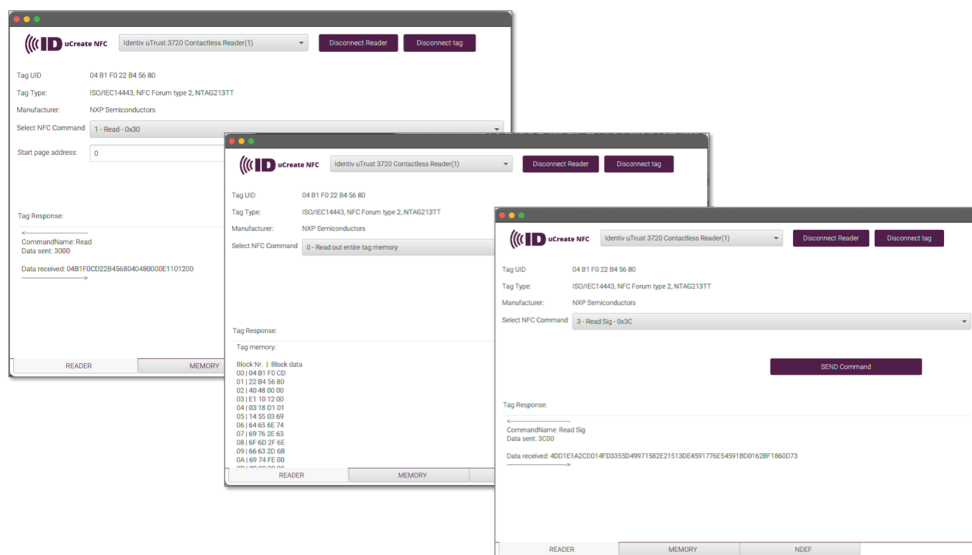
Note: The Memory Tab can be selected right after the app has started but as no tag content has been read yet, there are no commands which can be selected and executed.

Available commands:

- Read entire memory
- Read from block address
- Write to block address
- Read SIG (NXP originality signature)
- Get Version (determines NTAG IC version)
- Send command

Command examples:

- Read block 0x00
- Read out entire memory
- Read (chip´s originality) signature

IDENTIV

uCreate NFC SDK for Desktop - How-to-Use Guide
### The uCreate NFC for Desktop SDK/App is designed for Windows, m acOS and Linux

Example: NXP MIFARE DESFire EV3 - NFC Forum Type 4 tag - ISO/IEC14443A

The communication with NFC Forum type 4 tag is based on the ISO Data Exchange Protocol (ISO-DEP) which is fully compatible with the ISO/IEC 14443 A/B standard.

Read tag - perform a Read Capability Container command and write an NDEF message to a type 4 tag.

Please note: For NFC Forum type 4 tags, the memory tab is not available due to many different type 4 tag ICs with different memory segmentation and access methods.
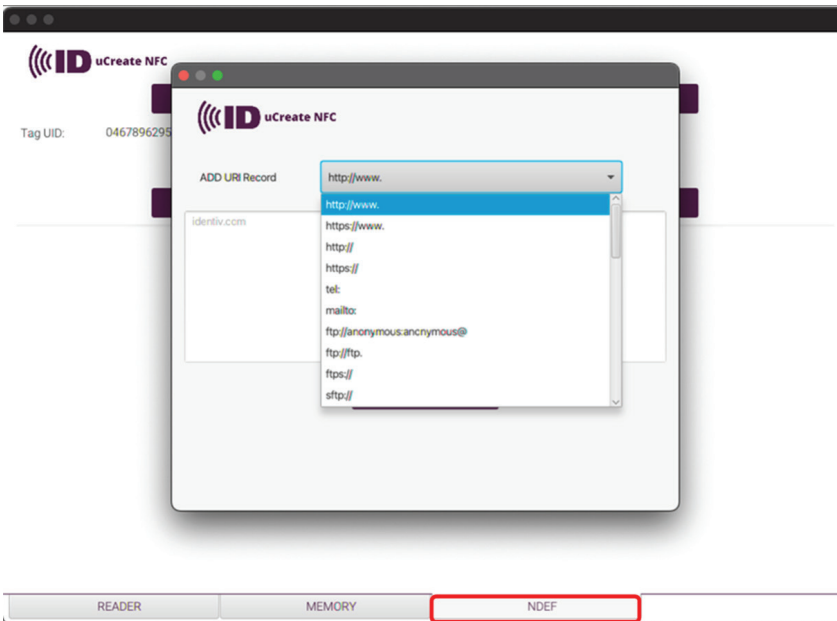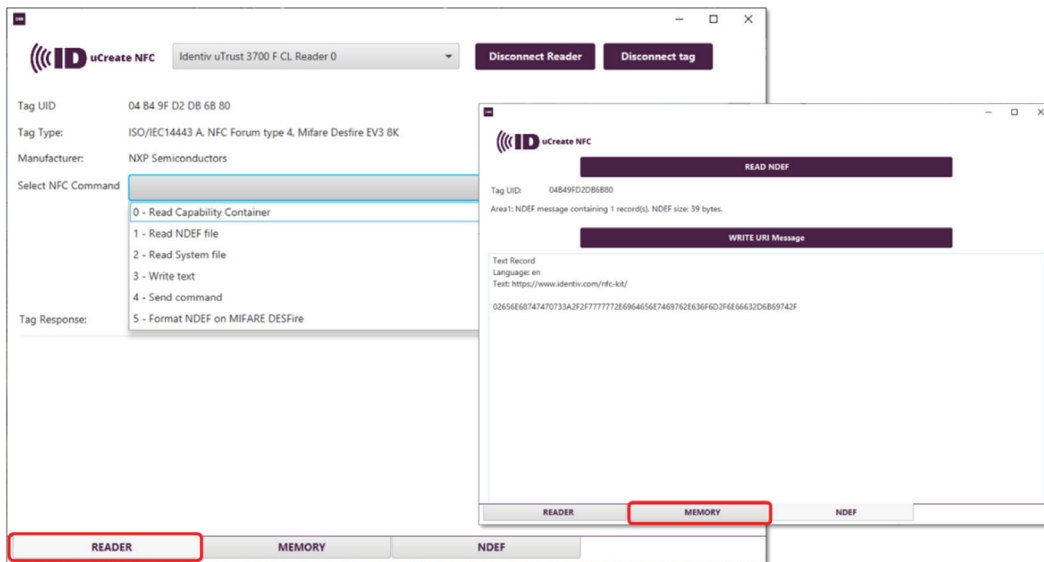
NXP ICODE® SLIX2 - NFC Forum Tag Type 5 – ISO/IEC 15693

NFC Forum type 5 tag is an ISO/IEC 15693 tag configured to be able to store an NDEF message.

Below are some examples of supported type 5 tag commands (NXP ICODE) and the representation of the received data. Scroll down the SEND Command window to see available commands.

Select the MEMORY tab to explore the received tag data.