

## JLink Tool Adds NSING Chip Flow

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# 1 Overview

## 1.1 Introduce

This document describes the following in detail:

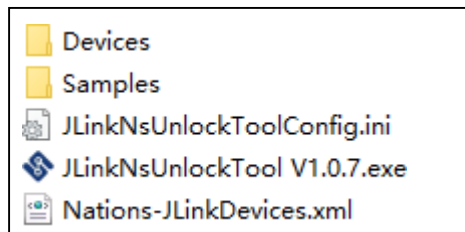
1. Add Nations chip to JLink software
2. Program process using JFlash tool
3. Remove the L1 level of read protection for Nations chip with the application program provided by National Technologies

Before you can start adding, you need to install the JLink software platform. The process described in this document is based on version JLink\_v6.40.

## 2 Add process

### 2.1 Modify and add configuration files and folders

Prepare the following configuration files (provided by National Technologies) :

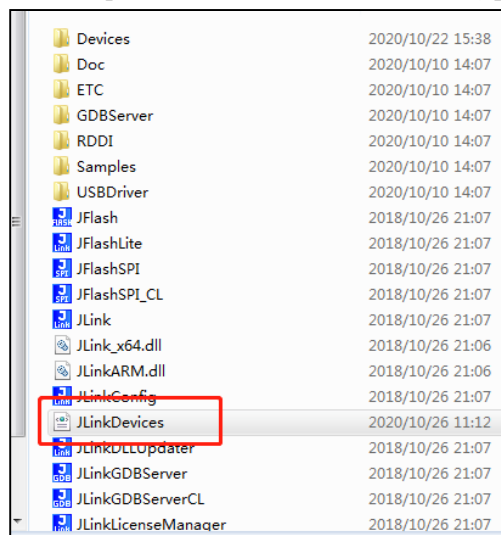


Mainly includes:

1. Device : downloading algorithm file
2. Samples : J-Flash project
3. Nations-JLinkDevices.xml : Nations chip model file that needs to be added
4. JLinkNsUnlockTool V1.0.7.exe : The application to unlock the L1 level read protection of the Nations chip.
5. JLinkNsUnlockToolConfig.ini : Configuration files required to unlock read-protected applications

#### 2.1.1 Modify the JLinkDevices configuration document

- 1) Locate the JLink installation path and open the JLinkDevices document (open with Notepad)



- 2) Open the provided Nations-JLinkDevices document, copy the configuration content of all Nations chips to the end of the JLinkDevices document in the installation path, and click Save. The completed JLinkDevices document reads as follows:

```

<!-- -->
<!-- Nationstech -->
<!-- -->

<!-- -->
<!-- N32G45x -->
<!-- -->

<Device>
<ChipInfo Vendor="Nationstech" Name="N32G452CB" Core="JLINK_CORE_CORTX_M4" WorkRAMAddr="0x200
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00020000" Loader="Device
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G452MB" Core="JLINK_CORE_CORTX_M4" WorkRAMAddr="0x200
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00020000" Loader="Device
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G452RB" Core="JLINK_CORE_CORTX_M4" WorkRAMAddr="0x200
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00020000" Loader="Device
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G452VB" Core="JLINK_CORE_CORTX_M4" WorkRAMAddr="0x200
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00020000" Loader="Device
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G452CC" Core="JLINK_CORE_CORTX_M4" WorkRAMAddr="0x200
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00040000" Loader="Device
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G452MC" Core="JLINK_CORE_CORTX_M4" WorkRAMAddr="0x200
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00040000" Loader="Device
</Device>

<ChipInfo Vendor="Nationstech" Name="N32G030_UNLOCKOPT" Core="JLINK_CORE_CORTX_M0" WorkRAMAddr="0x
<FlashBankInfo Name="Option Byte" BaseAddr="0x08000000" MaxSize="0x0000200" Loader="Devices/Nations
</Device>
<!-- -->
<!-- N32G031 -->
<!-- -->

<Device>
<ChipInfo Vendor="Nationstech" Name="N32G031F6" Core="JLINK_CORE_CORTX_M0" WorkRAMAddr="0x20000000
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00008000" Loader="Devices/Nat
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G031K6" Core="JLINK_CORE_CORTX_M0" WorkRAMAddr="0x20000000
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00008000" Loader="Devices/Nat
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G031K9" Core="JLINK_CORE_CORTX_M0" WorkRAMAddr="0x20000000
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00010000" Loader="Devices/Nat
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G031C8" Core="JLINK_CORE_CORTX_M0" WorkRAMAddr="0x20000000
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00010000" Loader="Devices/Nat
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G031_UNLOCKOPT" Core="JLINK_CORE_CORTX_M0" WorkRAMAddr="0x
<FlashBankInfo Name="Option Byte" BaseAddr="0x08000000" MaxSize="0x0000200" Loader="Devices/Nations
</Device>
</DataBase>

```

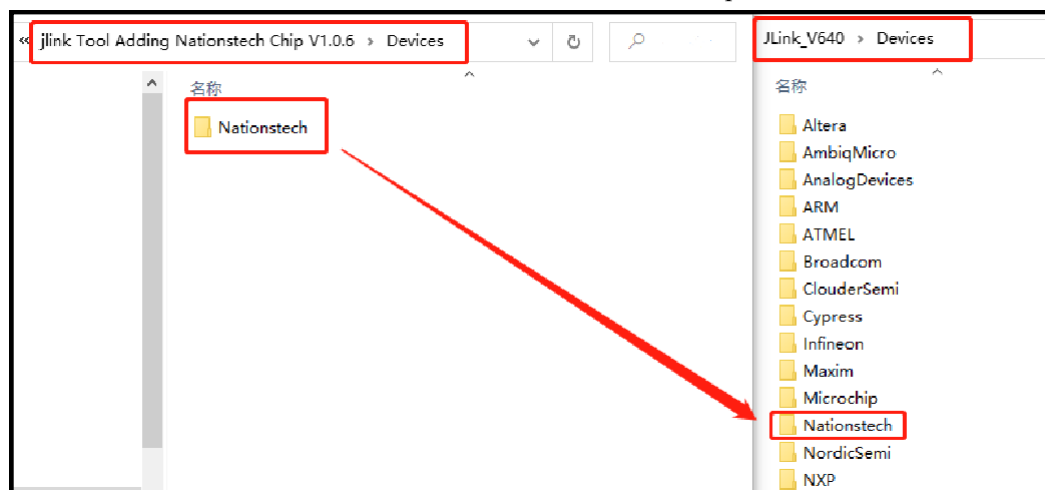
starting point

end point

### 2.1.2 Add downloading algorithm file of Nations

Copy the folders provided in the following path into the JLink installation path

Note: The screenshot of this document takes the V1.0.6 version as an example

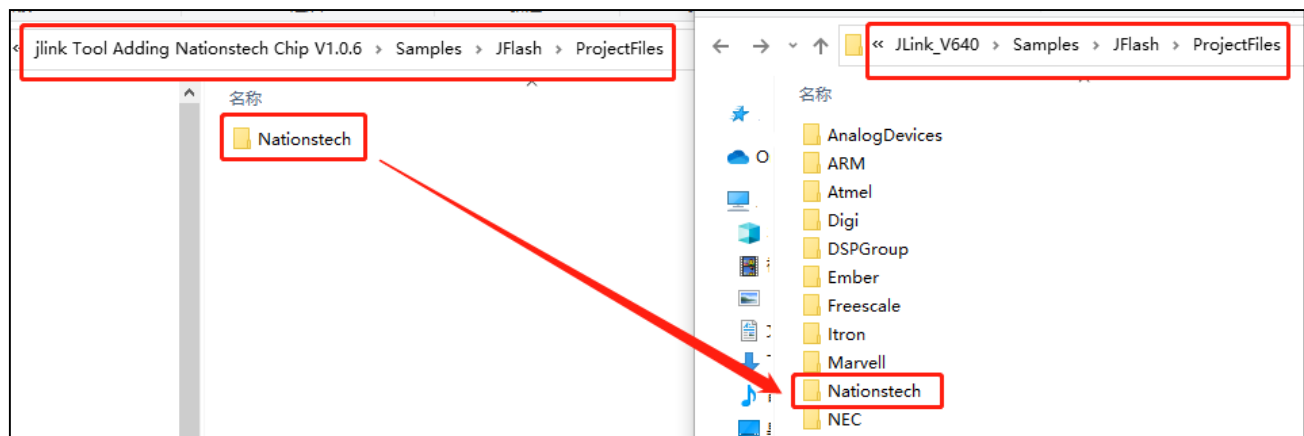


The installation path folder and contents are as follows:

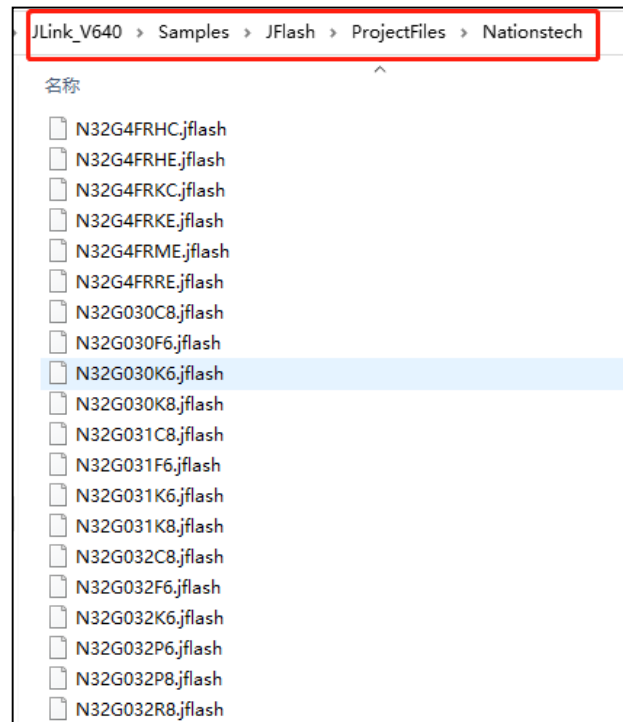
JLink_V640 > Devices > Nationstech		
名称		修改日期
N32G030x_32.FLM		2020/12/22 15:01
N32G030x_64.FLM		2020/12/22 15:02
N32G031x_32.FLM		2021/9/30 10:28
N32G031x_64.FLM		2021/9/30 10:29
N32G032x_32.FLM		2020/11/24 16:54
N32G032x_64.FLM		2020/11/23 10:39
N32G43x_64.FLM		2020/11/2 10:53
N32G43x_128.FLM		2020/11/2 19:49
N32G45x_NRP_128K.FLM		2020/5/6 18:31
N32G45x_NRP_256K.FLM		2020/5/6 18:29
N32G45x_NRP_512K.FLM		2020/5/6 18:26
N32L40x_64.FLM		2020/11/2 10:54
N32L40x_128.FLM		2020/11/2 10:56
N32L43x_64.FLM		2020/11/2 10:58
N32L43x_128.FLM		2020/11/2 10:57

### 2.1.3 Add JFlash project files of Nations

Copy the folders provided in the following path into the JLink installation path

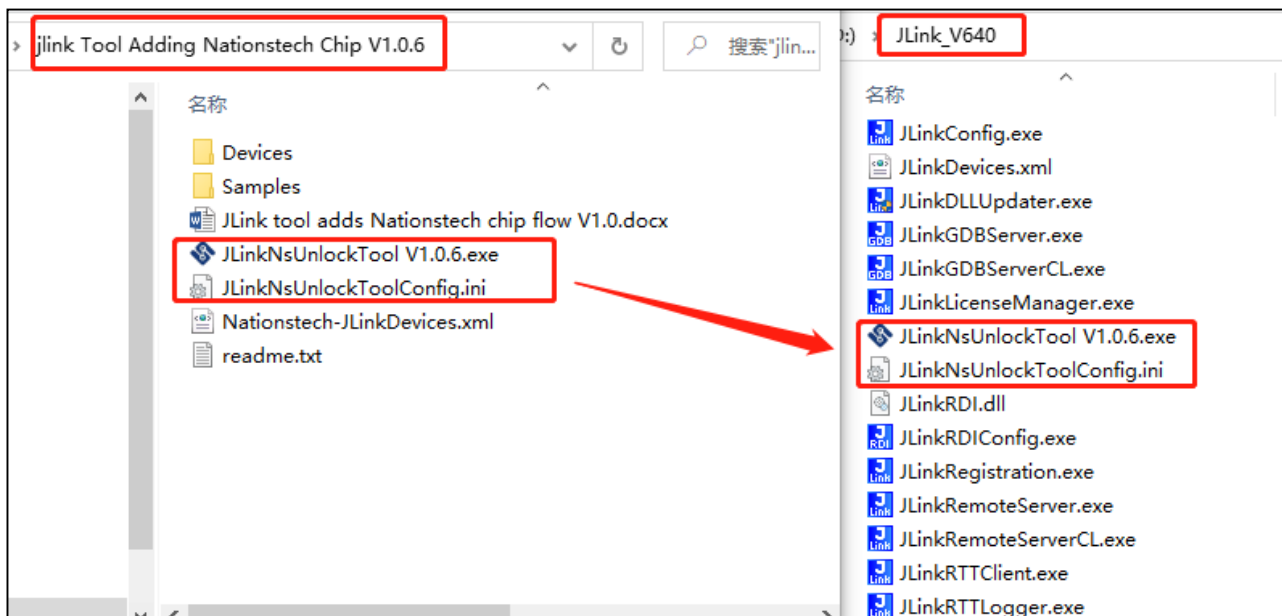


The installation path folder and contents are as follows:



## 2.1.4 Add an application that unlocked the Nations chip read protection of L1 level

Copy the folders provided in the following path into the JLink installation path

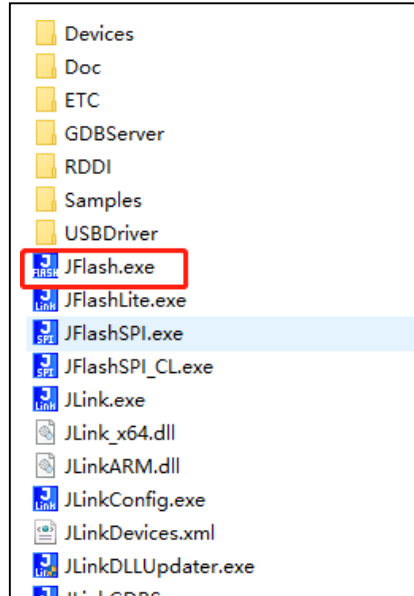


## 2.2 Add JFlash programming project

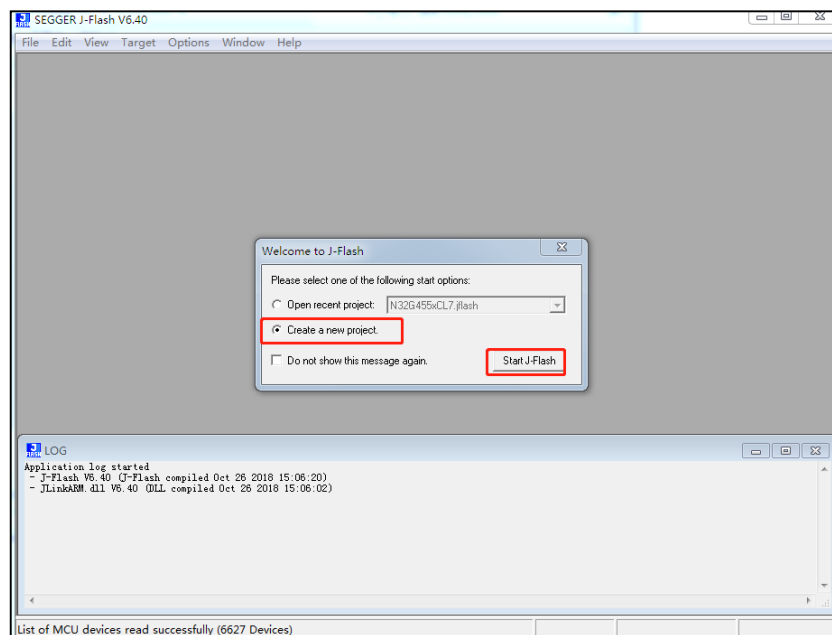
To use JFlash to program chip bin files, there are two ways:

## 2.2.1 Method 1: Choose the chip by yourself

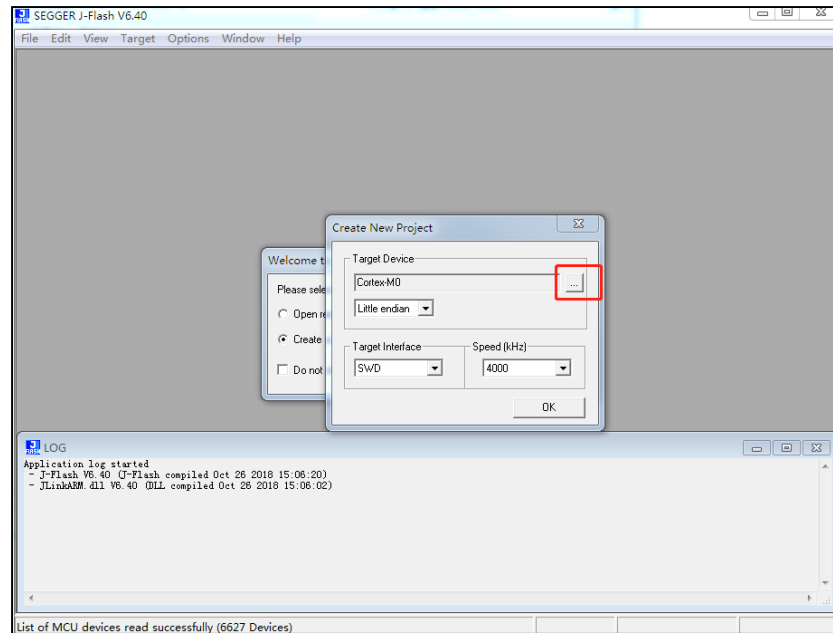
- 1) Double-click in the installation path to open the JFlash program



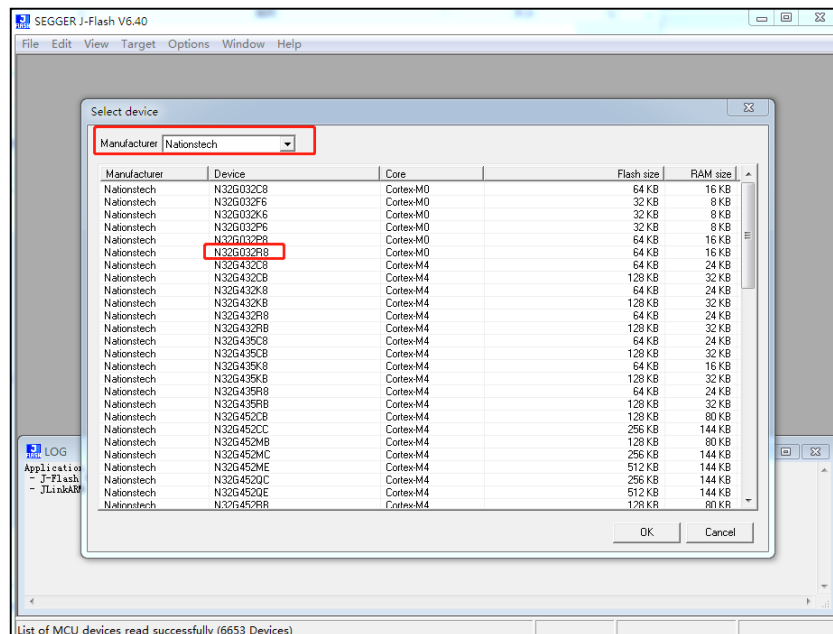
- 2) Select “Create a new project” and click “Start J-Flash”. Click the ellipsis on the right to select the chip

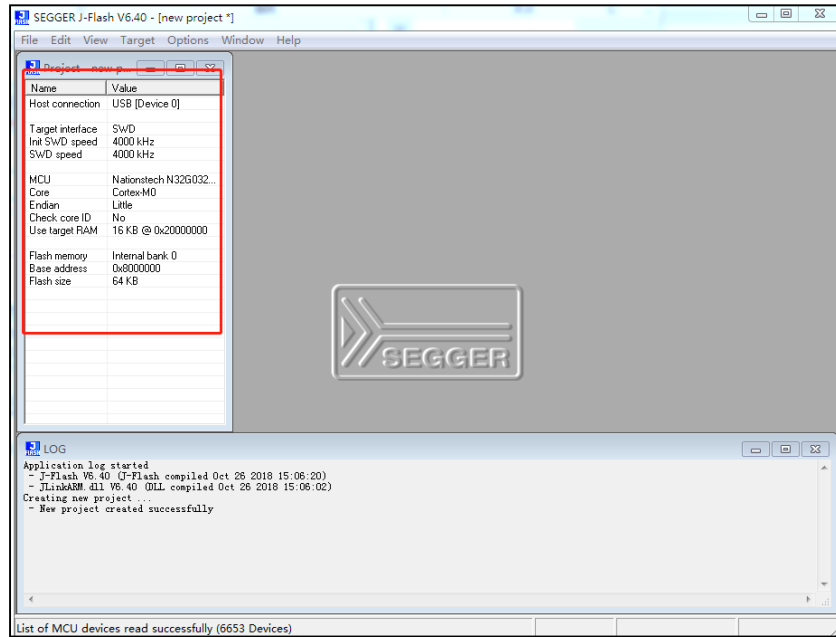




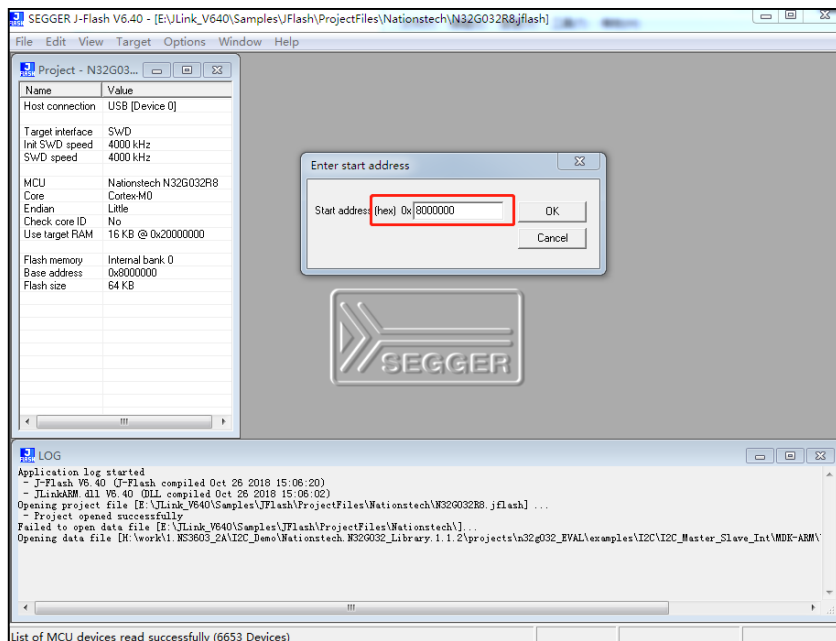


- 3) Go to Nationtech, select the chip you want to program (using N32G032R8L7 as an example), and click OK. Get the following project, display chip name and memory and other related content

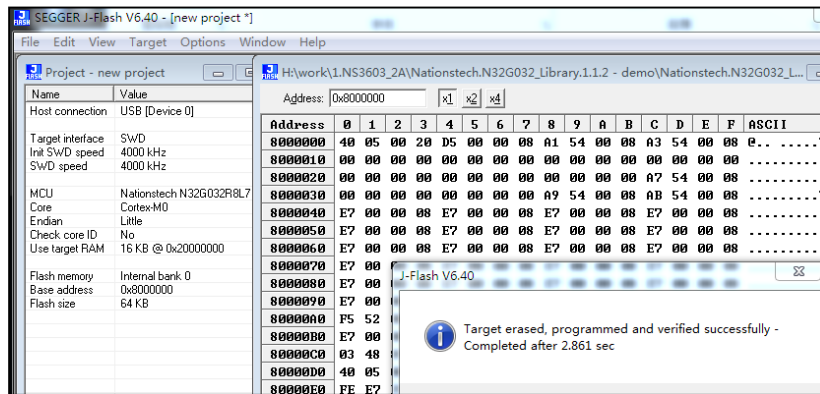
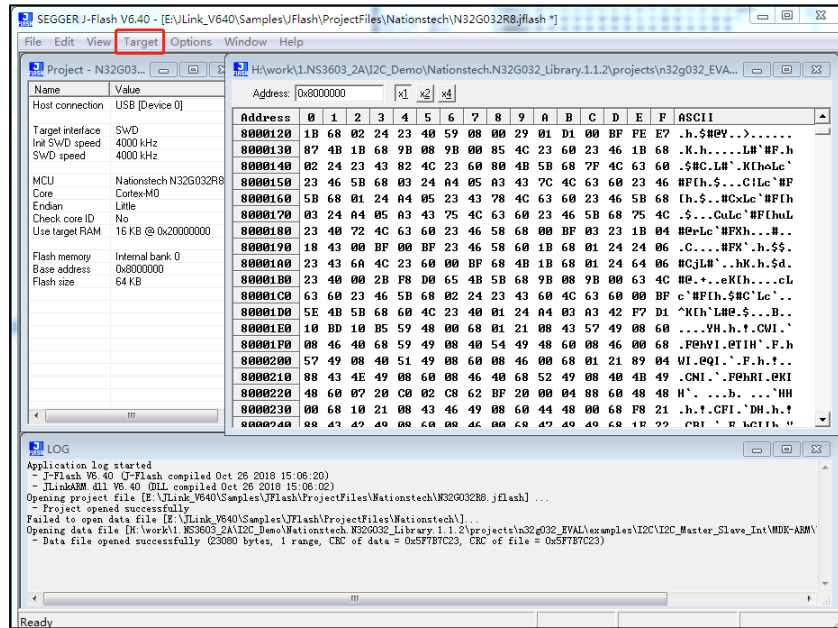




- 4) Use the emulator to connect the development board, drag the bin file you want to program in the blank, write the default address 8000000, and click OK

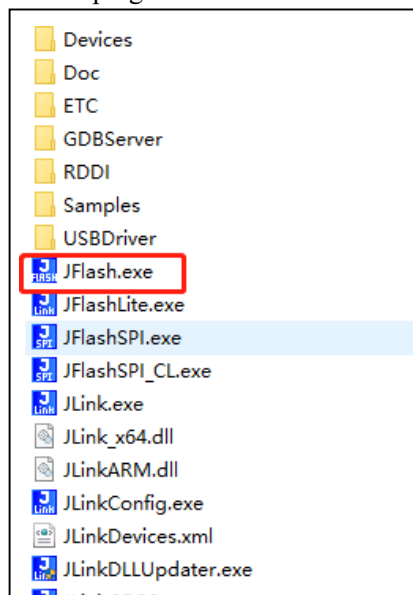


- 5) Open Target and click Production Programming (F7) to start programming. After programming, a successful prompt box will pop up, indicating that programming is successful



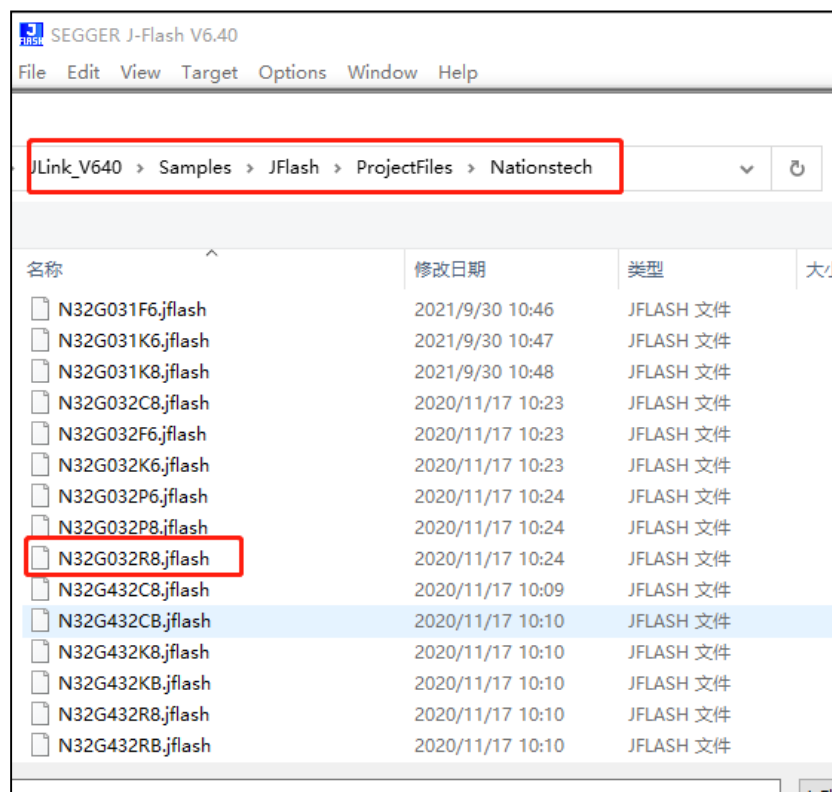
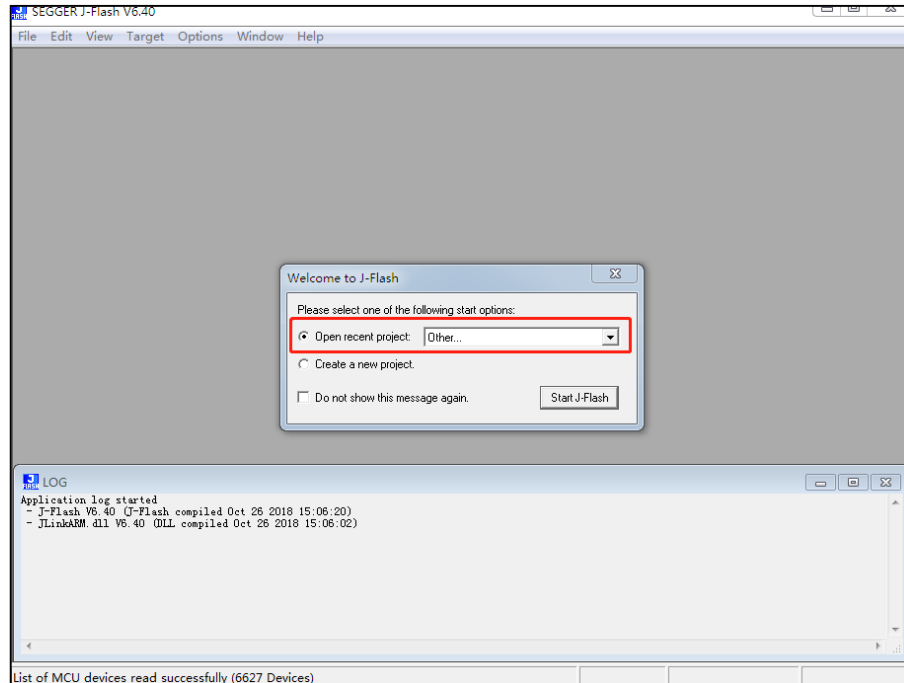
## 2.2.2 Method 2: Directly select the JFlash project provided by Nations

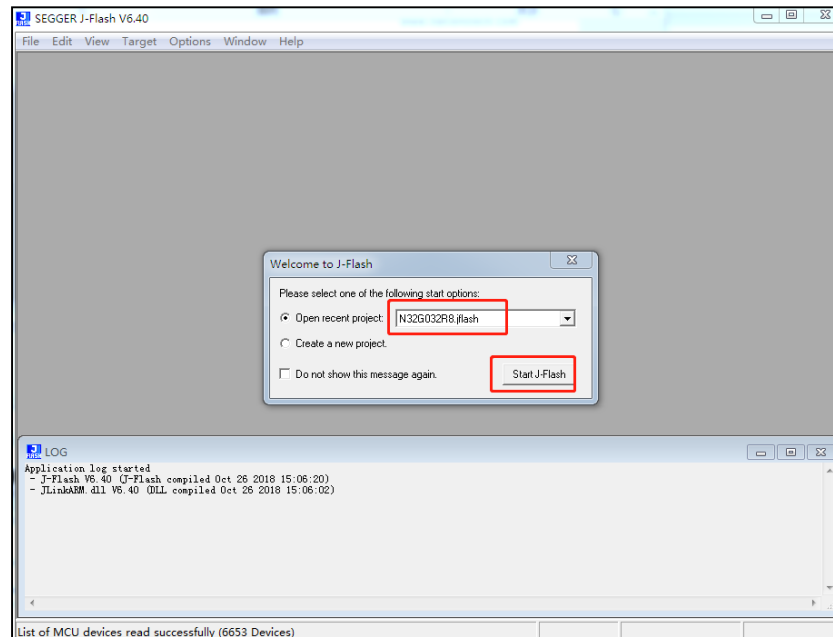
- 1) Double-click in the installation path to open the JFlash program



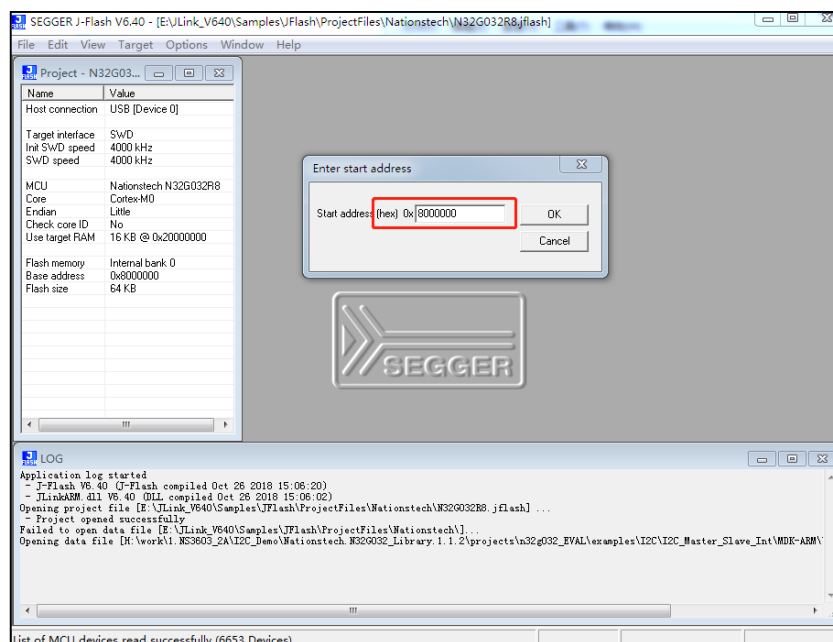
2) Select Open recent project, click the small triangle drop-down box on the right, select Other and follow the following path to find the chip .jflash file you want to program. Then click Start J-Flash

1)



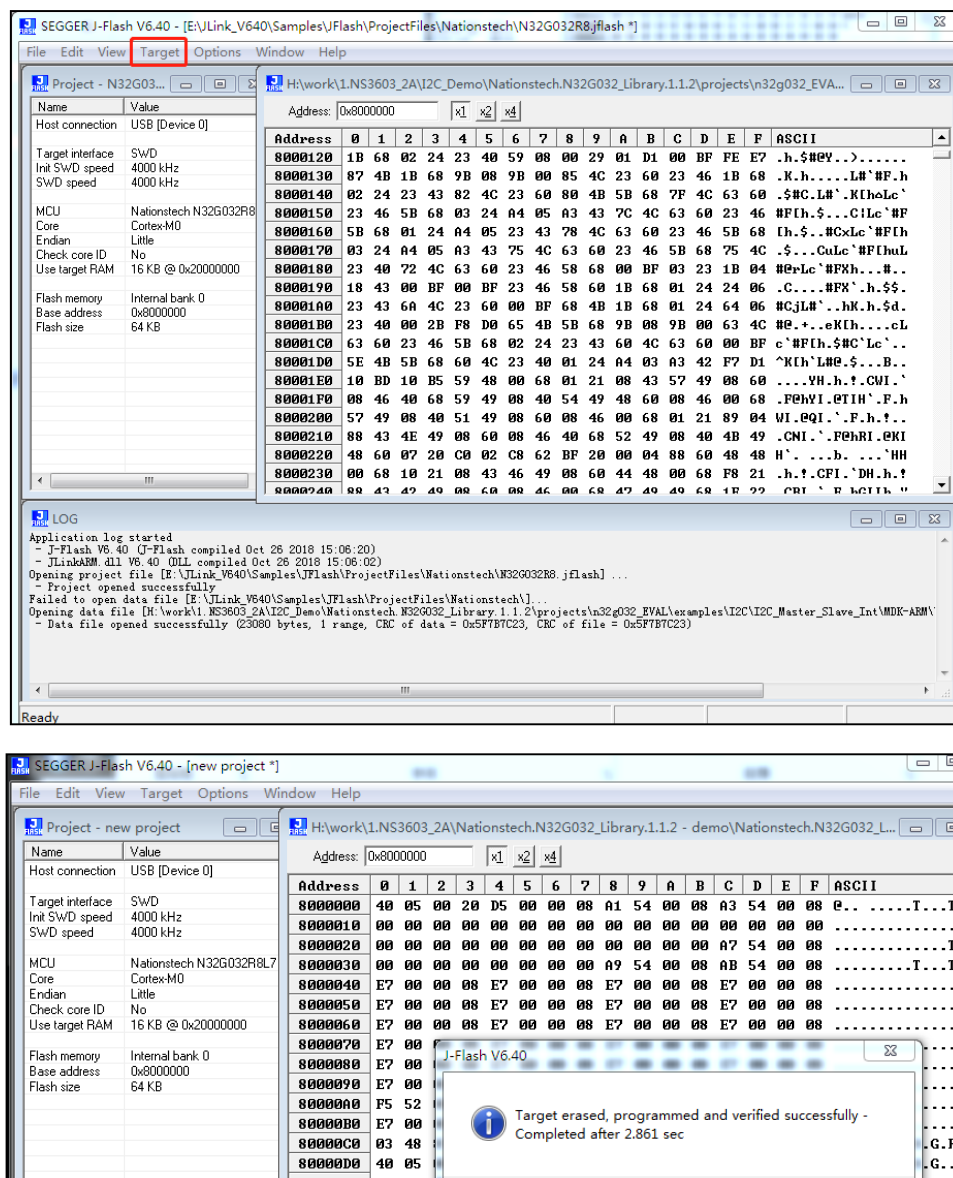


3) Use the emulator to connect the development board, drag the bin file you want to program in the blank, write the default address 8000000, and click OK



4) Open Target and click Production Programming (F7) to start programming. After programming, a successful prompt box will pop up, indicating that programming is successful

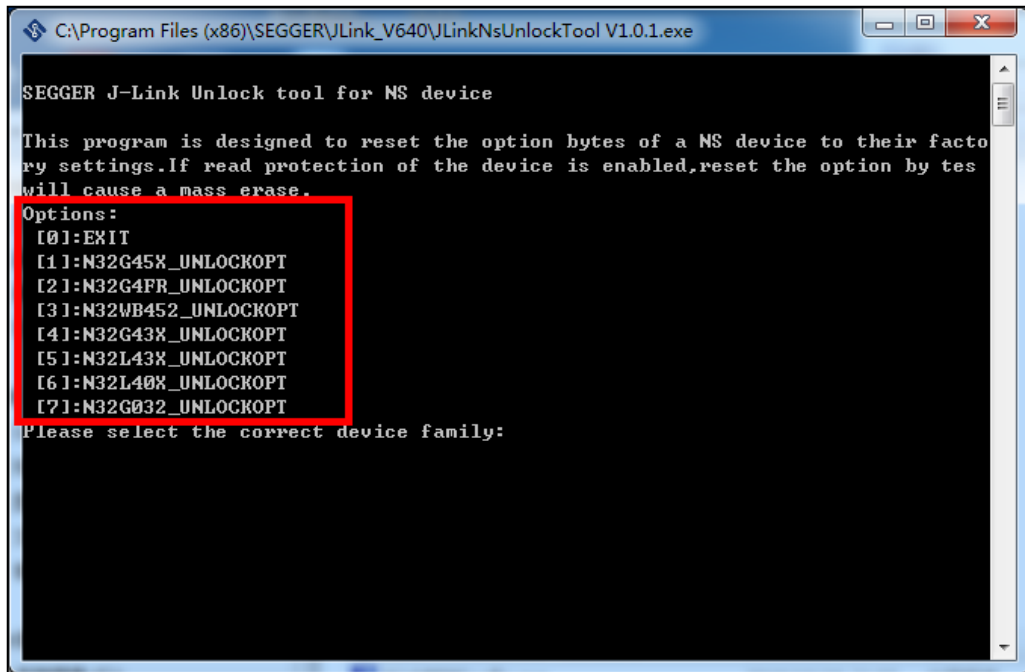
1)



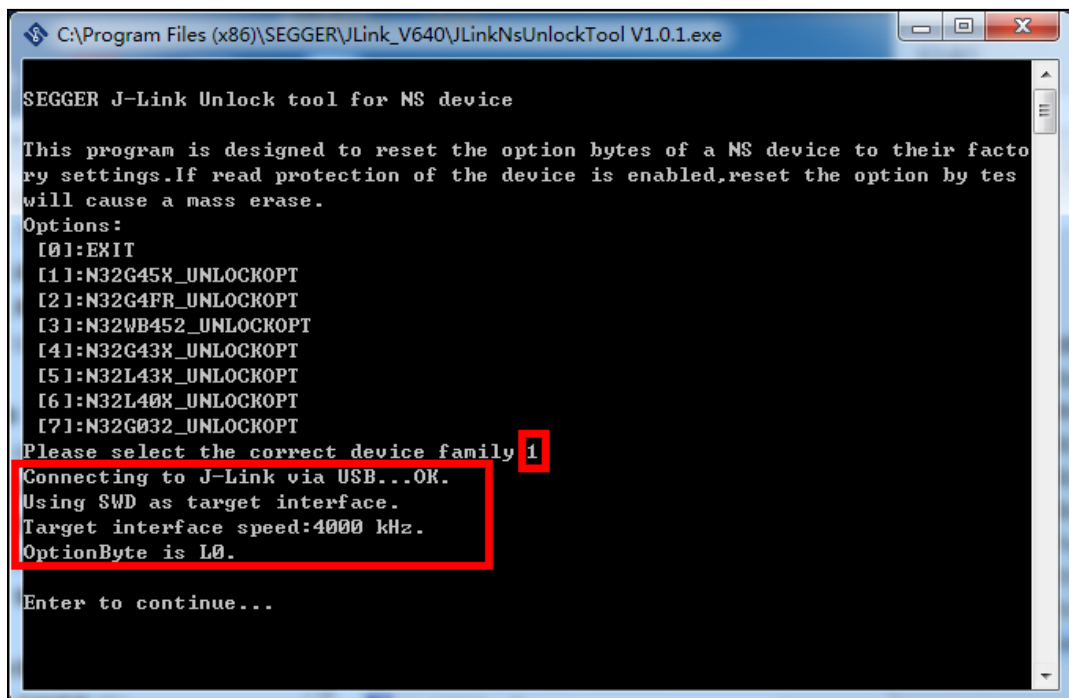
## 2.3 Unlock Nations chip read protection of L1 level

When Nations chip is enabled to read protection L1 level, you can use JLink tool and unlock application provided by Nations "JLinkNsUnlockTool Vx.x.x.exe" to unlock.

First open "JLinkNsUnlockTool Vx.x.x.exe":



Enter the number of the Nations chip series to unlock. For example, to unlock the N32G45x series, enter 1 and press Enter:



The application will automatically complete the connection unlock. After unlocking, press Enter, then type 0 and press Enter to exit.

### 3 Version history

Version	Date	Changes
V0.1	2020.11.03	The initial release
V1.0	2020.12.04	Add read protection to unlock
V1.1	2022.05.17	English version proof reading
V1.2	2024.04.04	Error correction



## **4 Disclaimer**

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