

JLink tool adds Nations/Nsing chip flow

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1 Overview

1.1 Introduce

This document describes the following in detail:

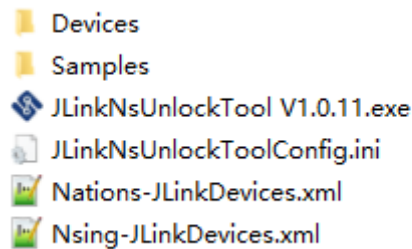
1. Add Nations/Nsing chip to JLink software
2. Program process using JFlash tool
3. Remove the L1 level of read protection for Nations/Nsing chip with the application program provided by National Technologies

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, please select the corresponding documentation for different versions.

2 Add process

2.1 Modify and add configuration files and folders

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



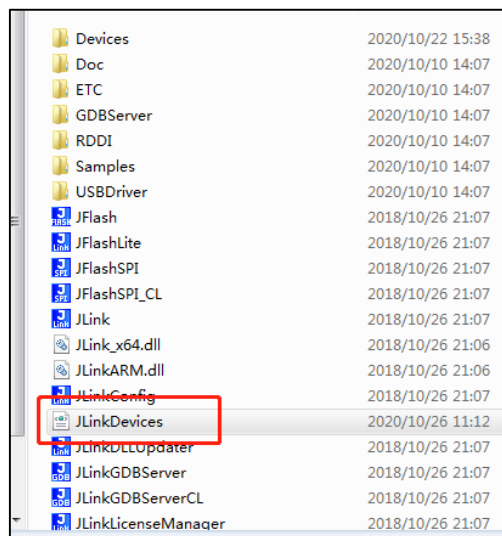
Mainly includes:

1. Device : downloading algorithm file
2. Samples : J-Flash project
3. Nations/Nsing-JLinkDevices.xml : Nations/Nsing 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/Nsing chip(JLinkV7.7 and above are not supported at the moment.).
5. JLinkNsUnlockToolConfig.ini : Configuration files required to unlock read-protected applications(JLinkV7.7 and above are not supported at the moment.)

2.1.1 Modify the JLinkDevices configuration document

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

Note: If the JLinkDevices documentation is not available in the installation path (for higher versions of jlink), rename the provided Nations/Nsing-JLinkDevices documentation to JlinkDevices and copy it to that path.



- 2) Open the provided Nations/Nsing-JLinkDevices document, copy the configuration content of all Nations/Nsing chips to the end of the JLinkDevices document in the installation path, and click Save. The

```

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

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

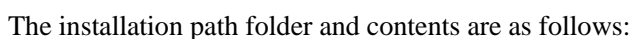
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G452CB" Core="JLINK_CORE_CORTX_M4" WorkRAMAddr="0x200
<FlashBankInfo Name="Internal Flash" BaseAddr="0x08000000" MaxSize="0x00020000" Loader="Device
</Device>
<Device>
<ChipInfo Vendor="Nationstech" Name="N32G452MB" Core="JLINK_CORE_CORTX_M4" WorkRAMAddr="0x200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

```

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

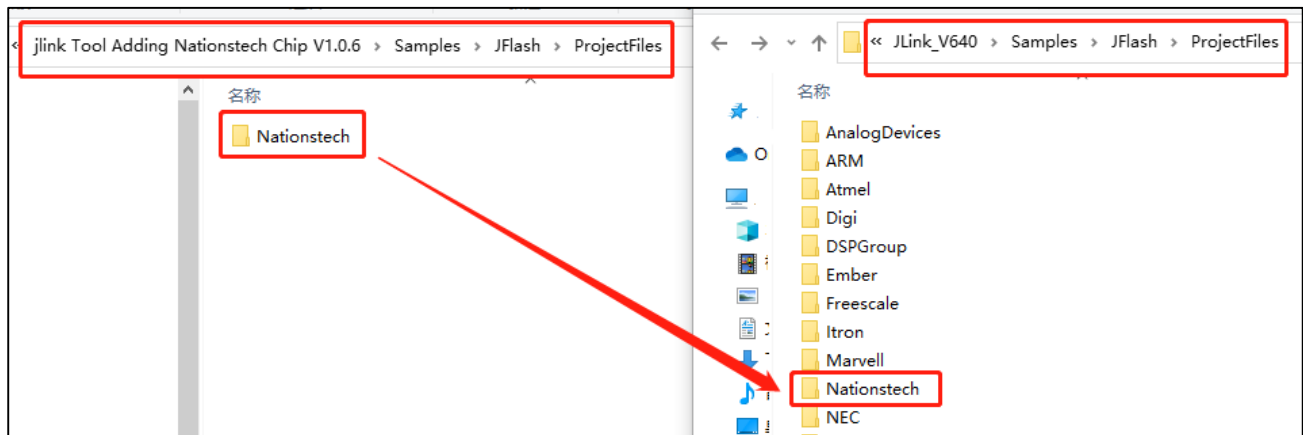


JLink_V640 > Devices > Nationstech

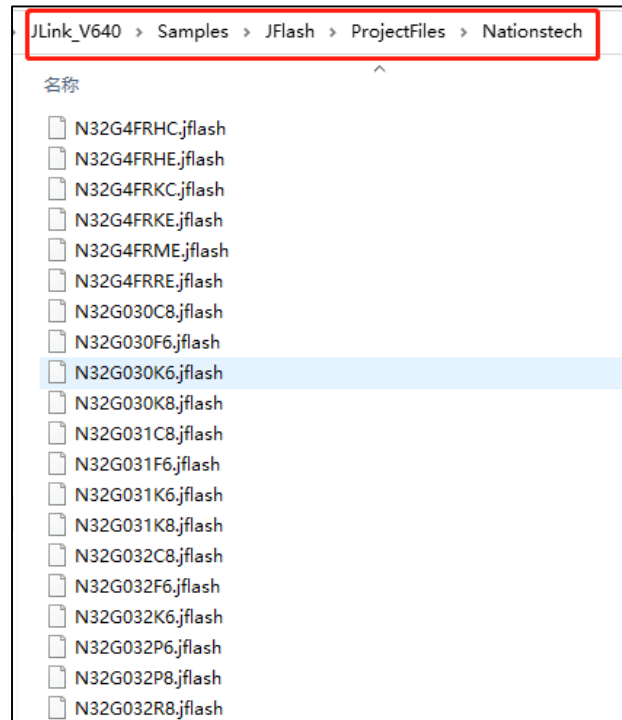
名称	修改日期
N32G030x_32.FLM	2020/12/22 15:01
N32G030x_64.FLM	2020/12/22 15:02
N32G031x_32.FLM	2021/9/30 10:28
N32G031x_64.FLM	2021/9/30 10:29
N32G032x_32.FLM	2020/11/24 16:54
N32G032x_64.FLM	2020/11/23 10:39
N32G43x_64.FLM	2020/11/2 10:53
N32G43x_128.FLM	2020/11/2 19:49
N32G45x_NRP_128K.FLM	2020/5/6 18:31
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/Nsing

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

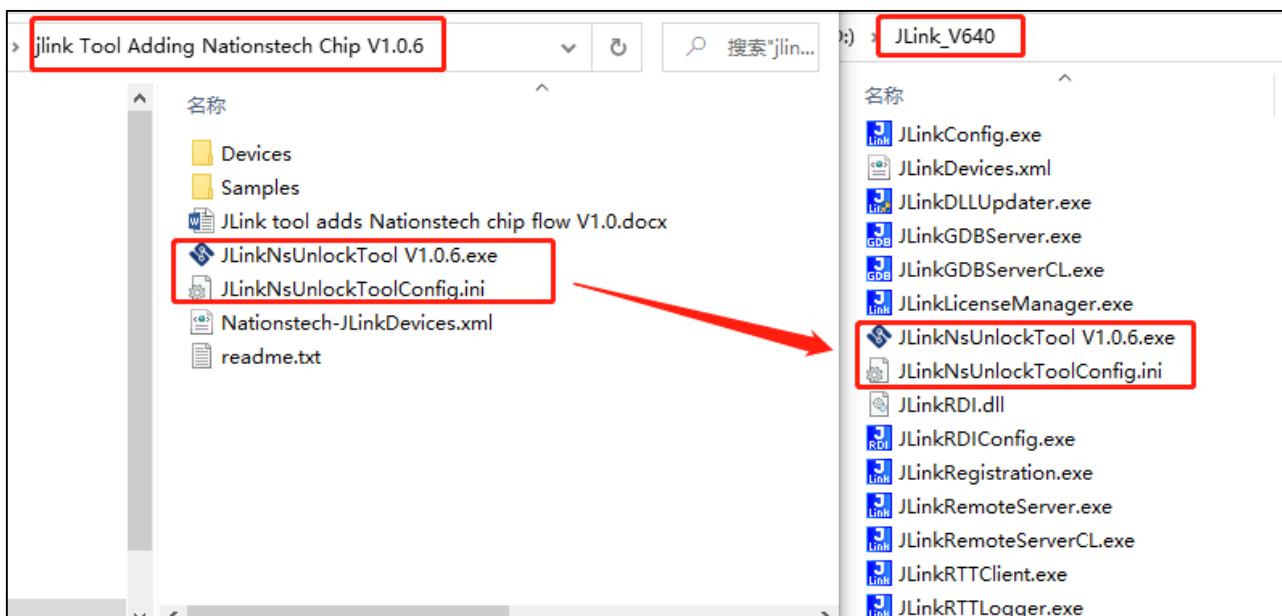


The installation path folder and contents are as follows:



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

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

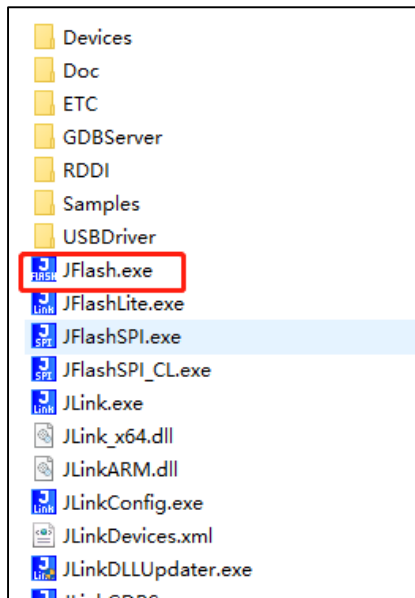


2.2 Add JFlash programming project

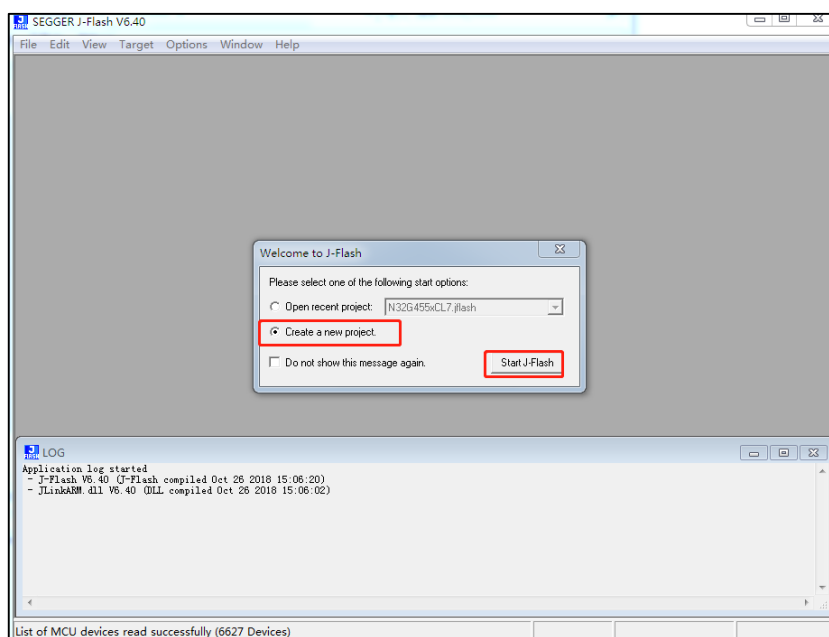
To use JFlash to program chip bin files, there are two ways:

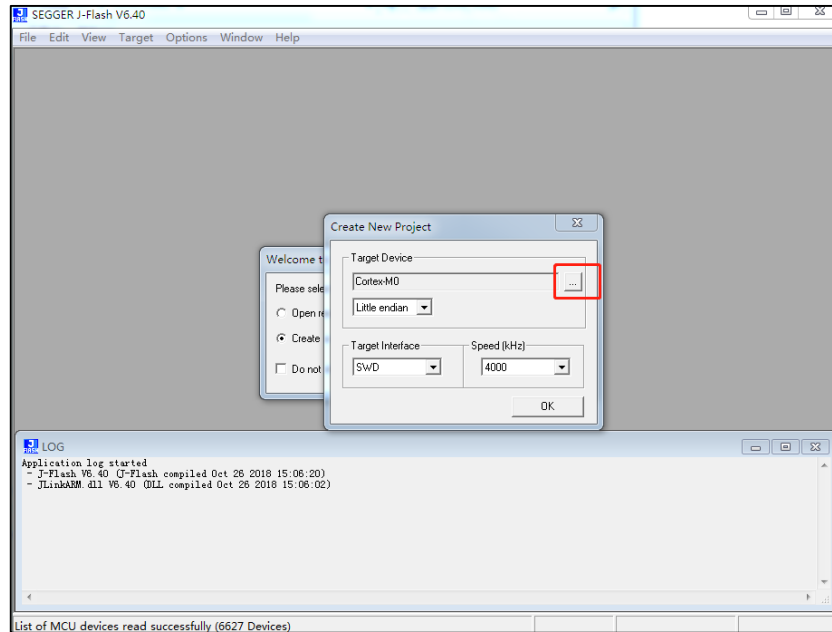
2.2.1 Method 1: Choose the chip by yourself

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

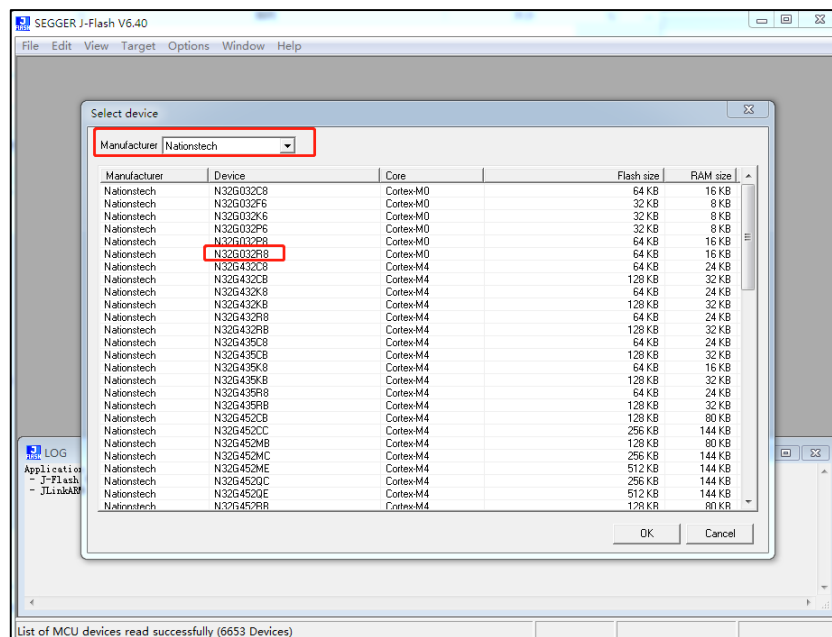


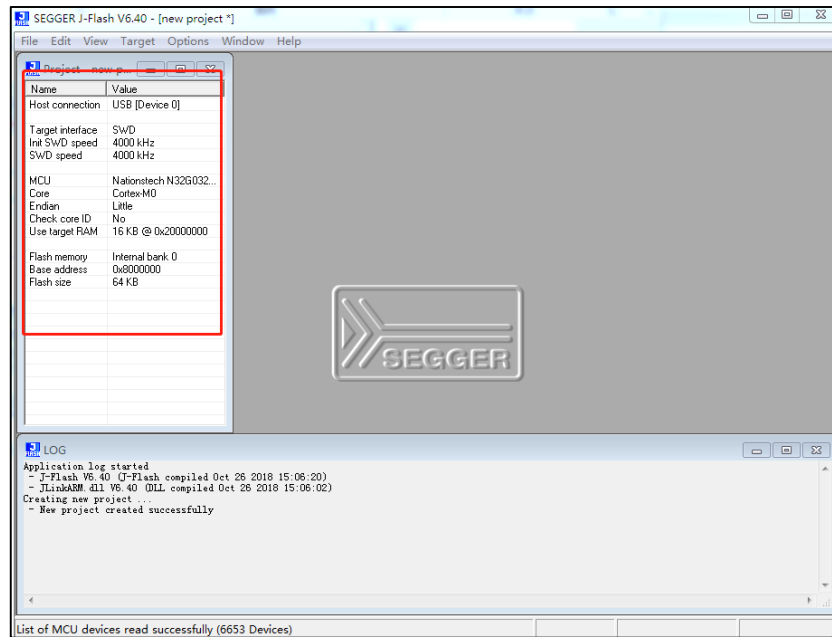
- 2) Select “Create a new project” and click “Start J-Flash”. Click the ellipsis on the right to select the chip



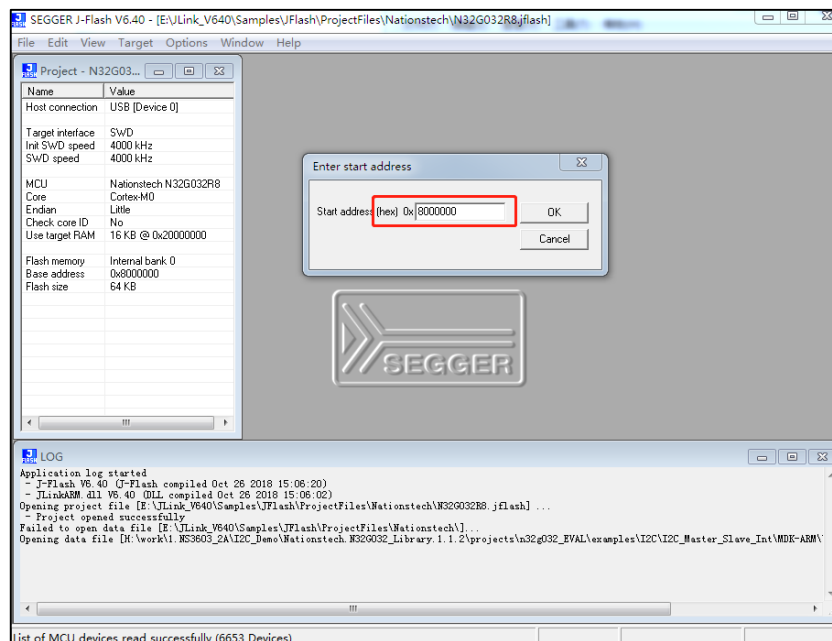


3) Go to Nationtech/Nsingtech, select the chip you want to program (using N32G032R8L7 as an example), and click OK. Get the following project, display chip name and memory and other related content

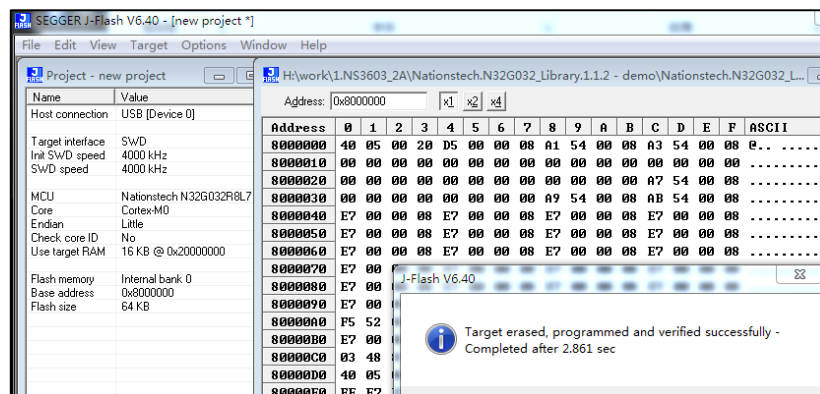
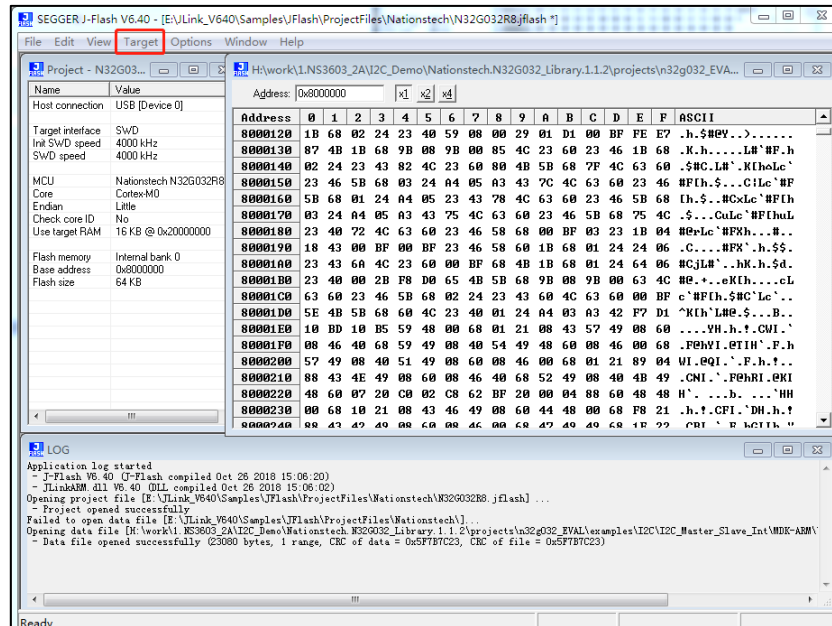




- 4) Use the emulator to connect the development board, drag the bin file you want to program in the blank, write the default address 8000000, and click OK

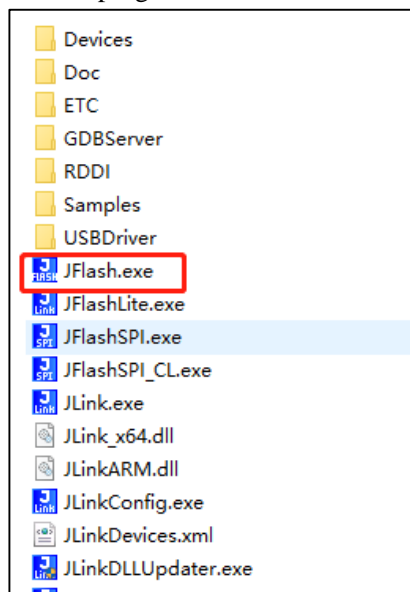


- 5) Open Target and click Production Programming (F7) to start programming. After programming, a successful prompt box will pop up, indicating that programming is successful



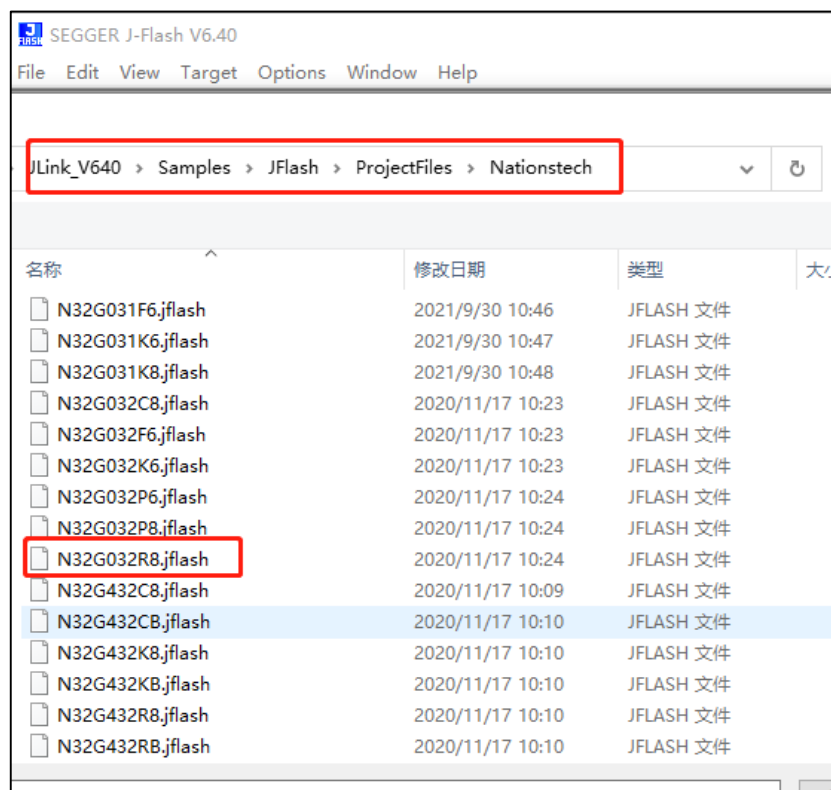
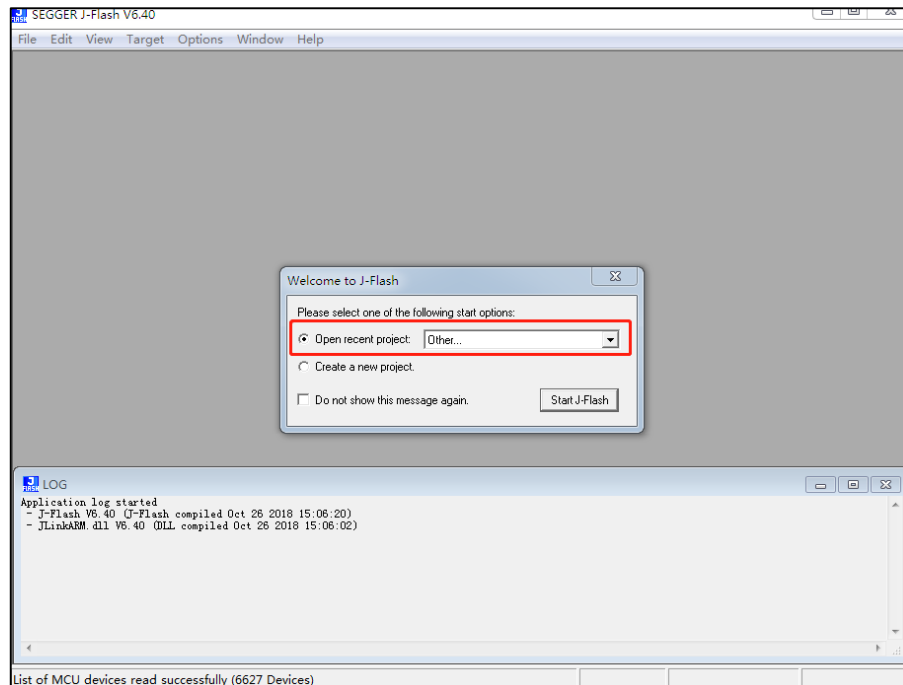
2.2.2 Method 2: Directly select the JFlash project provided by Nations/Nsing

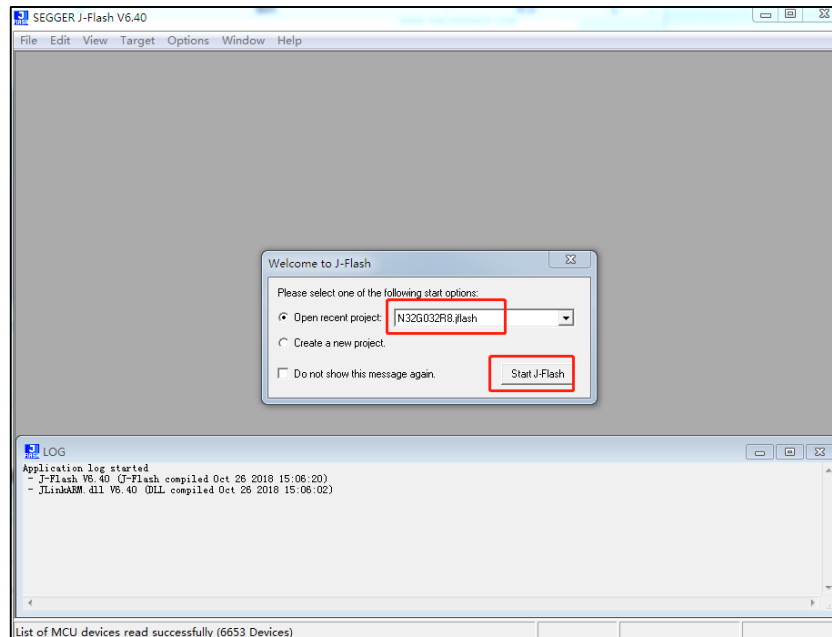
- 1) Double-click in the installation path to open the JFlash program



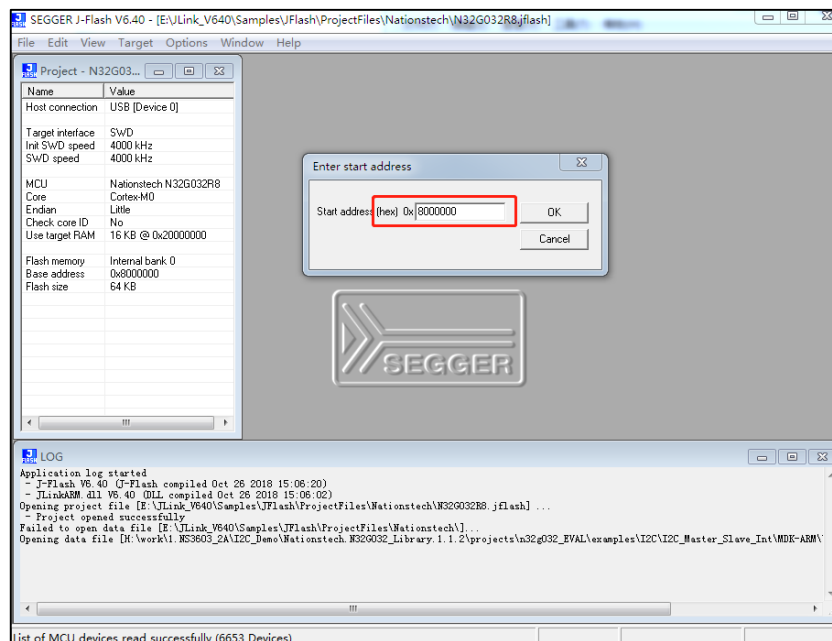
2) Select Open recent project, click the small triangle drop-down box on the right, select Other and follow the following path to find the chip .jflash file you want to program. Then click Start J-Flash

1)



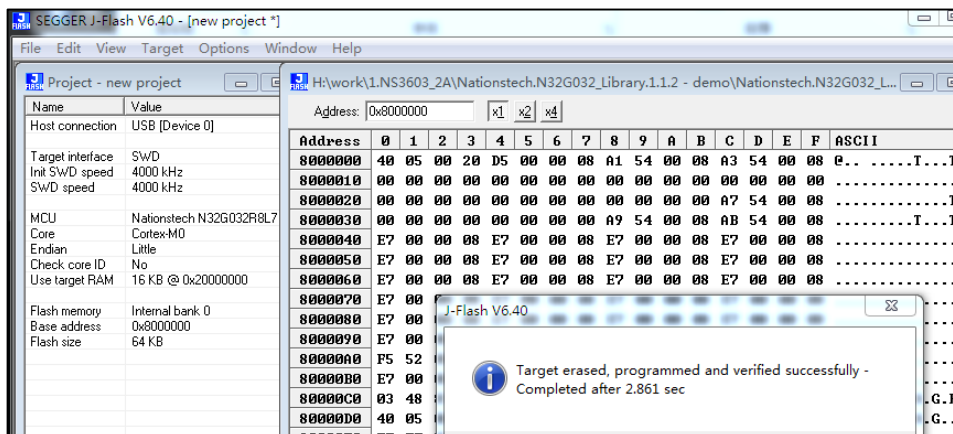
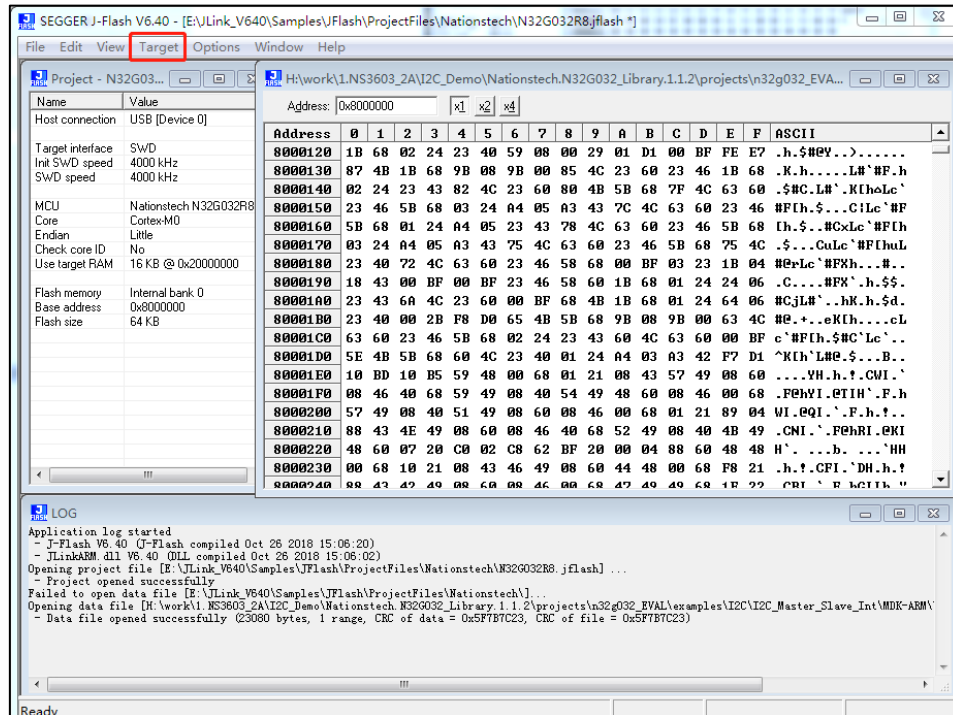


3) Use the emulator to connect the development board, drag the bin file you want to program in the blank, write the default address 8000000, and click OK



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

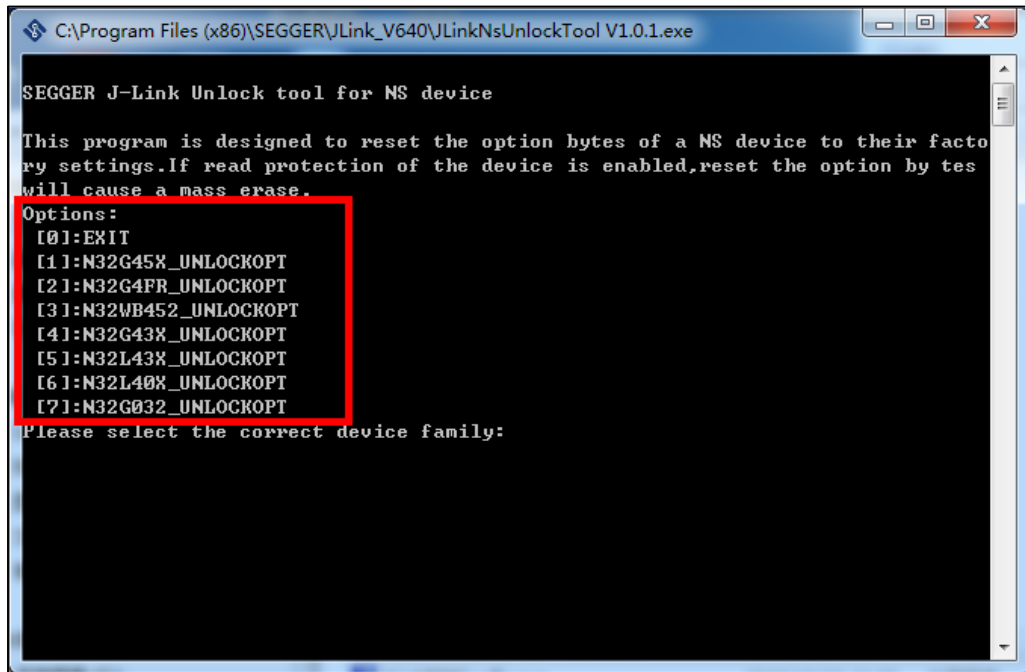
1)



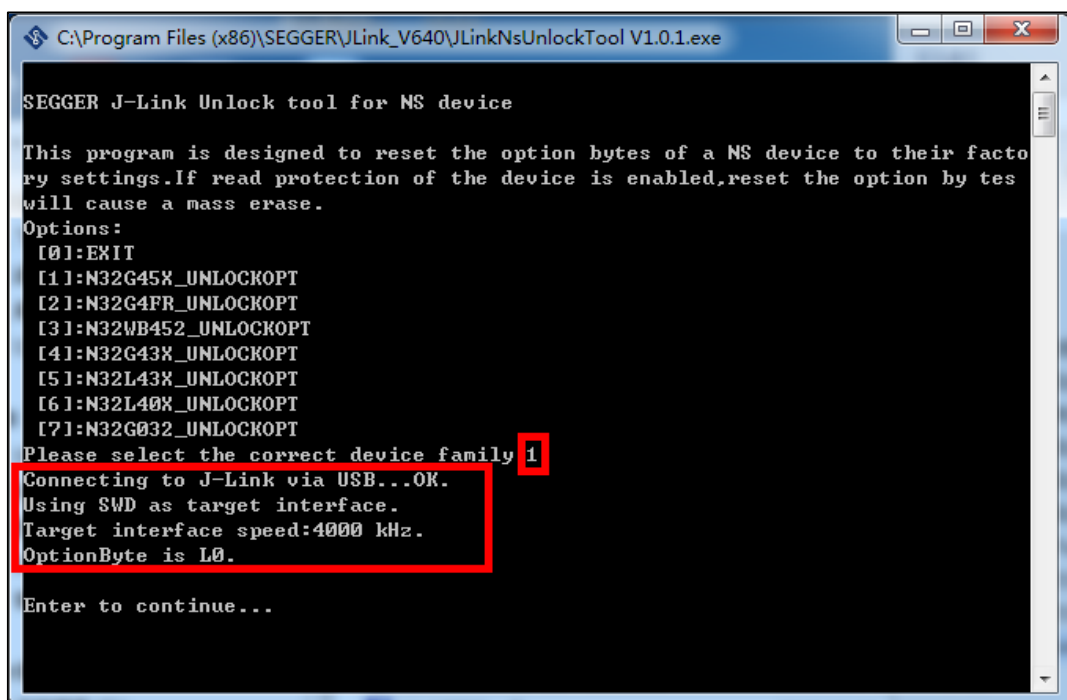
2.3 Unlock Nations/Nsing chip read protection of L1 level

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

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



Enter the number of the Nations/Nsing 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

Date	Version	Modify
2020.11.03	V0.1	The initial release
2020.12.04	V1.0	Add read protection to unlock
2022.05.17	V1.1	English version proofreading,document format adjustment
2025.05.13	V1.2	Add instructions for using higher versions of jlink
2025.9.18	V1.3	1. Header and footer updates 2. Add a description of the Nsing model

4 Legal Notice

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