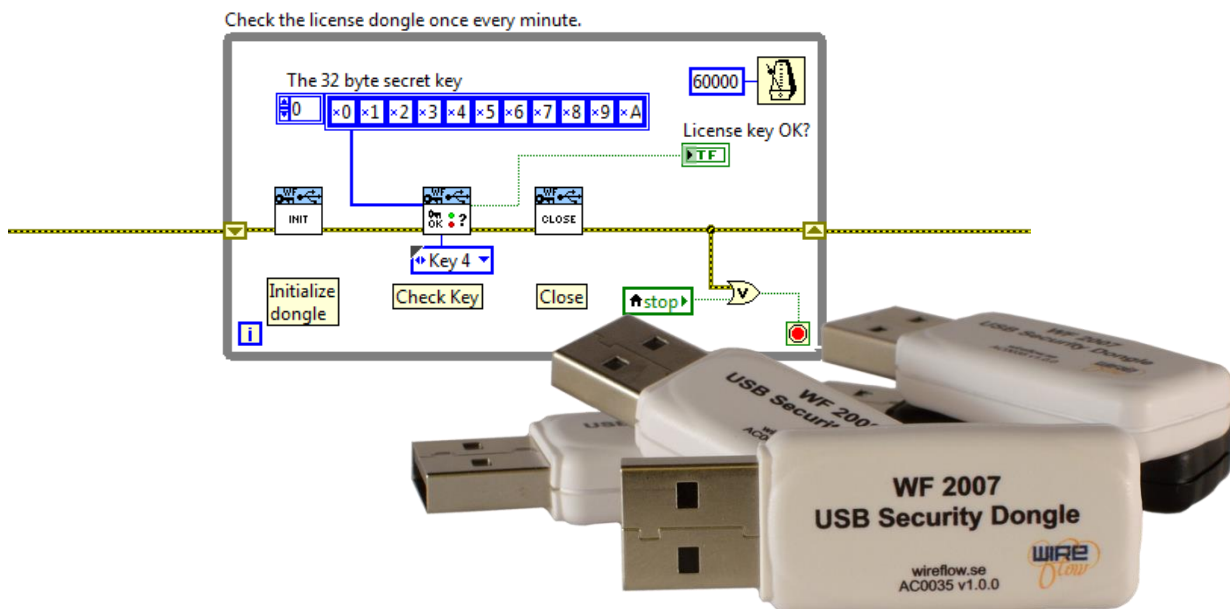


# WireFlow Security Suite Quick Guide

AC0045-003 rev A





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# Support information

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## Technical support and Product information

[www.wireflow.se](http://www.wireflow.se)

[support@wireflow.se](mailto:support@wireflow.se)

## WireFlow headquarters

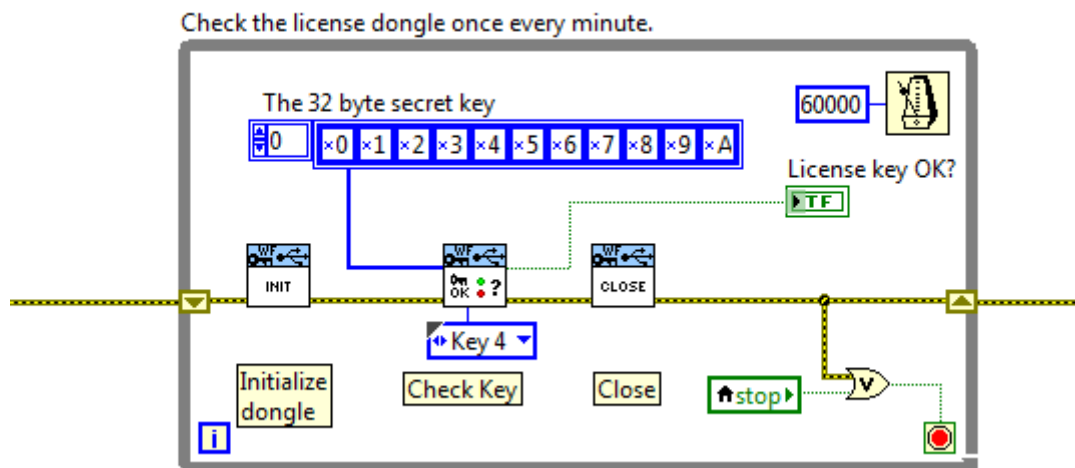
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# Introduction

This document is for those who prefer hands-on practice on how to use the WireFlow security suite.

The Quick Guide in this user's manual gives a step-by-step instruction on how to design, implement and deploy simple license check functionality in a LabVIEW application. By reading the complete user's guide (“AC0045-002 WF Security Suite Users Manual”) and studying the WF Security Suite LabVIEW driver, an application designer can implement a variety of different security functions.




# Quick Guide

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This quick guide gives a detailed step-by-step guide for how to ensure that a LabVIEW application does not start until the end user plugs a USB dongle containing the correct secret key into the system.

## Preconditions

- The LabVIEW application to protect is contained in one LabVIEW VI. 
- The application is distributed as an installer file that installs an .exe file.
- The application runs on a Windows PC.
- The application shall only start if a correct USB dongle is attached to the PC.

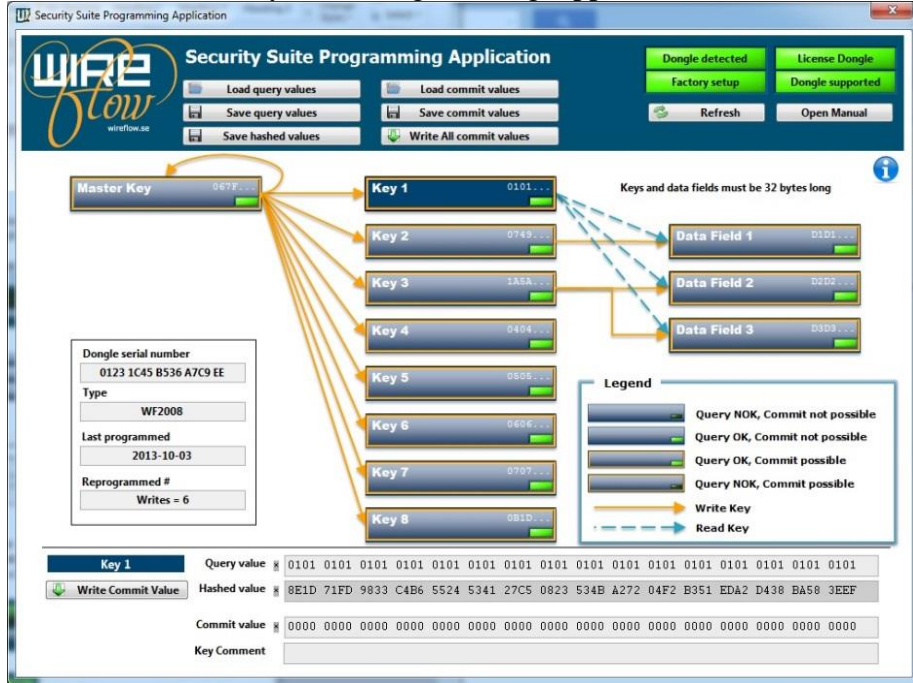
## Acquire the required equipment and tools.

1. Buy some WF 2008, USB Security dongles for LabVIEW from WireFlow. You will need one dongle for each system you need to deploy, and maybe also one for your own R&D and support.
2. Download the WF Security Suite Programming Application from [www.wireflow.se](http://www.wireflow.se) and install the application. (For installation instruction see the document "AC0045-002 WF Security Suite Users Manual")
3. Buy a license for the WF Security Suite Programming Application from WireFlow. When buying the license you will get an USB dongle that activates all functionality in the WF Security Suite Programming Application.
4. Download and install the LabVIEW drivers; WF USB Security dongle driver and WF Authentication module from [www.wireflow.se](http://www.wireflow.se) or from within VI Package Manager.
5. Install the WF USB dongle device driver for Windows.  
The device driver is an .inf file that can be found on your computer in the folder:  
C:\ProgramData\WireFlow\WF Security Suite\Device driver\Windows Device driver  
The device driver .inf file can also be downloaded from [www.wireflow.se](http://www.wireflow.se).  
Follow the installation instruction located together with the .inf file.

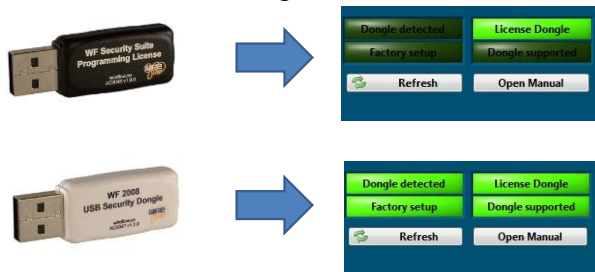
## Program the dongles with the secret keys

1. There are many options for how to use the keys and data fields that exist in the dongles. If you don't have any specific requirements and only want a quick way to use the dongles for one secret key, we recommend this setup:
  - a. Use the Master key for a Company Wide secret code. As long as you know this code you can always re-program the dongles if needed. For this quick guide we will use the 32 byte secret code 0x00, 0x01, 0x02, 0x03, 0x04 ..... 0x1F
  - b. Use Key 4 for the secret code for the application. For this quick guide we will use the 32 byte secret code 0x00, 0x02, 0x04, 0x06, 0x08 ..... 0x3E

2. Start the WF Security Suite Programming Application.




3. Insert the WF Security Suite Programming License dongle into the PC and make sure that the License Dongle indicator on the Programming Application turns green. Then insert the security dongle to program, in this case a WF 2008 dongle. Now all indicators should turn green.



4. Click on the Master Key symbol.



5. Now Master Key is selected in key management field in the lower part of the application. Now enter your new Master Key value into the Commit value data field.

|   |              |   |
|---|--------------|---|
| <b>Master Key</b>   | Query value  | 067F 70E9 E65C 3C6B FFDD 59E5 D50D BD04 CCEB 56E1 30B1 17ED 31C1 0AA3 3AE7 8606 |
|  | Hashed value | 55B3 673B 1FD9 CE26 D2EF A309 2541 3221 2AB1 F750 2AC2 FD4D 75BE FE92 B893 EFF2 |
|   | Commit value | 0001 0203 0405 0607 0809 0A0B 0C0D 0E0F 1011 1213 1415 1617 1819 1A1B 1C1D 1E1F |
|   | Key Comment  |   |


6. Press Write Commit Value to program the key into the dongle.



7. Now select Key 4 by clicking on the Key 4 symbol.



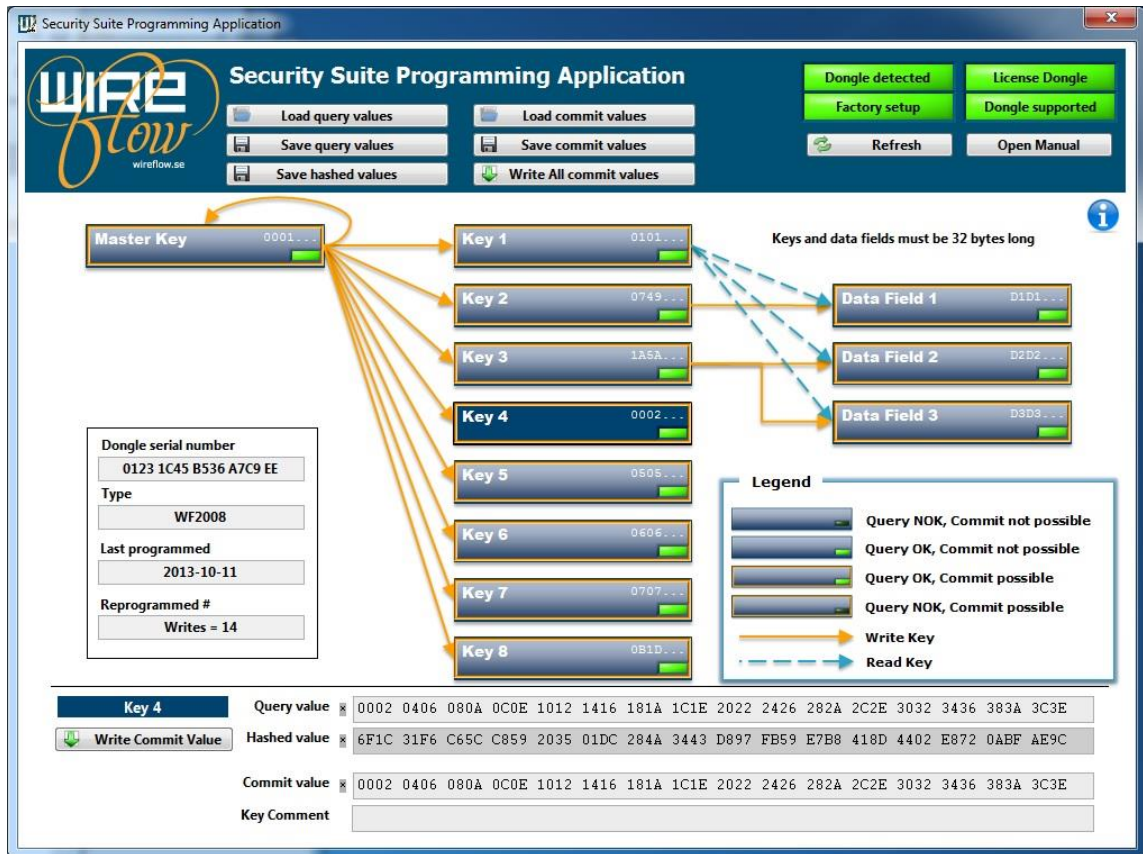
8. Now Key 4 is selected in key management field. Enter your new Key 4 value into the Commit value data field.

|  |              |   |
|--|--------------|---|
| <b>Key 4</b>   | Query value  | 0404 0404 0404 0404 0404 0404 0404 0404 0404 0404 0404 0404 0404 0404 0404 0404 |
|  | Hashed value | 8D56 3022 7820 73C2 5899 F84C B4BC ECD6 4994 B22E F88C 8A27 8A0B BCB0 3C64 1A5E |
|  | Commit value | 0002 0406 080A 0C0E 1012 1416 181A 1C1E 2022 2426 282A 2C2E 3032 3436 383A 3C3E |
|  | Key Comment  |   |

9. Press Write Commit Value to program the key into the dongle.



10. Now we are done. The dongle is now programmed with our secret codes. You may save this configuration to file by pressing the *Save commit values* button.



The screenshot shows the 'Security Suite Programming Application' interface. At the top, there are buttons for 'Load query values', 'Load commit values', 'Save query values', 'Save commit values', 'Save hashed values', and 'Write All commit values'. On the right, there are status indicators: 'Dongle detected', 'License Dongle', 'Factory setup', 'Dongle supported', 'Refresh', and 'Open Manual'.

The main area displays a diagram where a 'Master Key' (0001...) is linked to eight individual keys (Key 1 to Key 8). Each key has a 32-byte hexadecimal value. Key 4 is highlighted. Below the keys, there are three 'Data Field' boxes (Data Field 1, 2, 3) with their respective 32-byte values. A legend explains the key status: 'Query NOK, Commit not possible', 'Query OK, Commit not possible', 'Query OK, Commit possible', and 'Query NOK, Commit possible'. It also defines 'Write Key' (solid orange arrow) and 'Read Key' (dashed blue arrow).

On the left, a box shows dongle information: 'Dongle serial number: 0123 1C45 B536 A7C9 EE', 'Type: WF2008', 'Last programmed: 2013-10-11', and 'Reprogrammed #: Writes = 14'.

At the bottom, a detailed view for 'Key 4' shows:
 

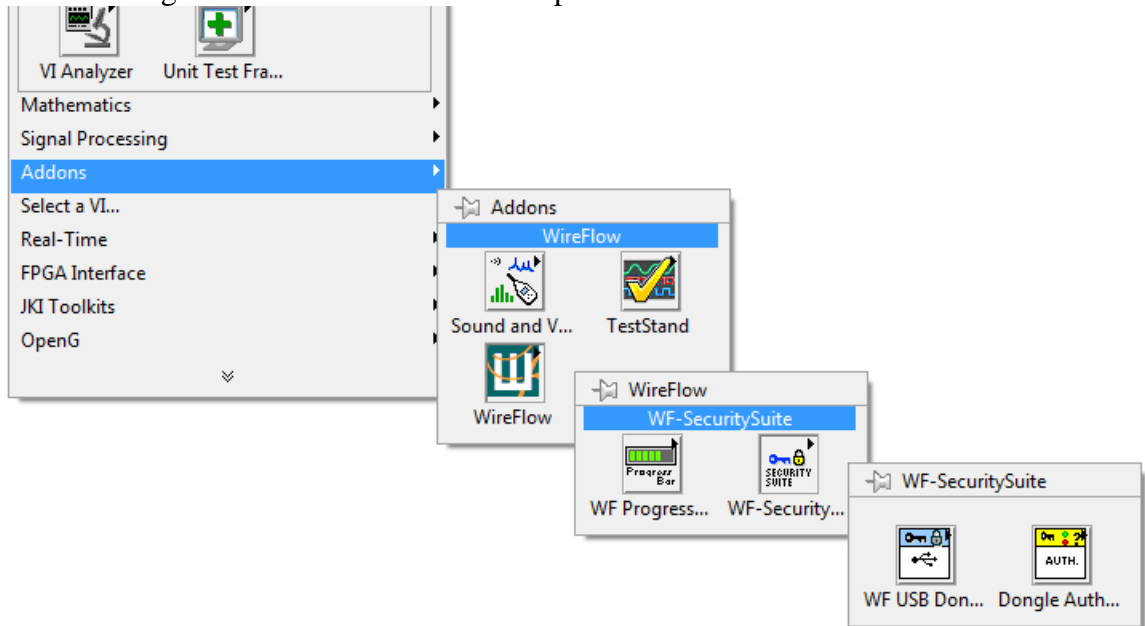
|              |   |
|--------------|---|
| Query value  | 0002 0406 080A 0C0E 1012 1416 181A 1C1E 2022 2426 282A 2C2E 3032 3436 383A 3C3E |
| Hashed value | 6F1C 31F6 C65C C859 2035 01DC 284A 3443 D897 FB59 E7B8 418D 4402 E872 0ABF AE9C |
| Commit value | 0002 0406 080A 0C0E 1012 1416 181A 1C1E 2022 2426 282A 2C2E 3032 3436 383A 3C3E |
| Key Comment  |   |

N.B. This simple procedure only works with dongles that have not been programmed before, i.e. they have the Factory setup Master Key value. Once the Master Key has been changed, it cannot be reprogrammed by you (or anyone else) without having entered the correct Master Key value in the Query value field.

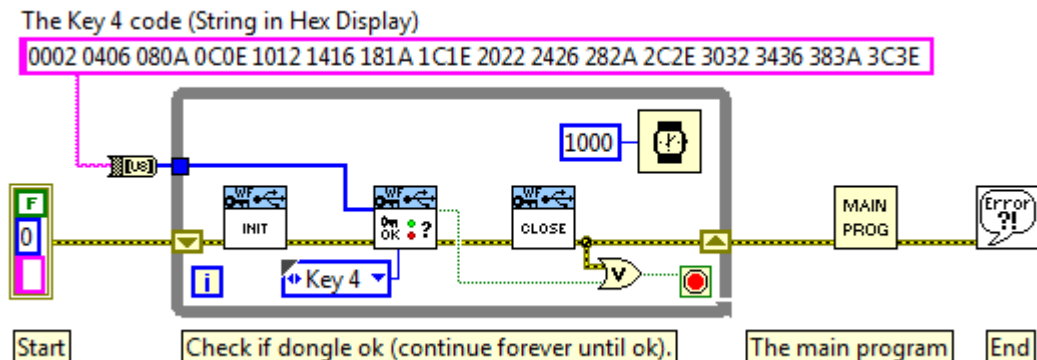


## Add license check to your LabVIEW application

1. Open a new empty VI that will be the top VI of your application. Now try to find the WF USB dongle driver VIs in the functions palette



2. Use the WF USB Dongle driver VIs and your main application VI to create your top level VI which should look like this:



3. When you want to test run the code against the dongle with the secret code it is recommended that you exit the WF Security Suite Programming Application and also remove the black license dongle to avoid any conflicts between the two systems.

## Create installer

1. Create an installer for your application which will install an .exe file on the target computer.
2. Since your application is to be run on a Windows target the WF USB dongle device driver for Windows (the .inf file) must also be installed on the target computer. If your end customer is supposed to do the installation himself then you must provide the .inf file to the end user so that he can install it on his machine.



## Deploy

1. To deploy your system you need to install your application and the .inf file on the target computer and then insert the USB security dongle with the correct key into an USB port on the target computer.
2. DONE!