INTEL® REALSENSE™ D400 SERIES
DEVICE FIRMWARE UPDATE (DFU) TOOL FOR WINDOWS INSTALL AND USER GUIDE
VERSION 1.4
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Device Firmware Update (DFU) for Windows
DFU Usage & Options Menu

- Device Firmware Update (DFU) tool required to update Intel® RealSense™ D400 series camera firmware
- Camera firmware is updated using “signed firmware” binary files provided by Intel Corp.
- DFU tool and latest available “signed firmware” binary file can be downloaded from https://realsense.intel.com/intel-realsense-downloads/#firmware

**DFU for Windows Tool Options Menu**

```
Intel (TM) D400 Windows Device Firmware Update Tool for Intel RealSense Technology Main Menu
1: Update Camera Device.
2: Show camera devices that can be upgraded.
3: Recover devices stuck in Upgrade Mode.
4: Show connected camera device details.
5: Configure D400 Series Windows Device Firmware Update Tool Settings (Can run with or without camera device connected).
Q: Quit
```
## Depth Cameras Supported by DFU Tool

<table>
<thead>
<tr>
<th>DEPTH CAMERA</th>
<th>DESCRIPTION</th>
<th>PACKAGE CONTENTS</th>
</tr>
</thead>
</table>
| ![Intel® RealSense™ Depth Camera D415](image) | Intel® RealSense™ Depth Camera D415 | Intel® RealSense™ Depth Camera D415  
USB3.1 Type-C to USB3.1 Micro-B Cable  
(Used to connect Depth Camera to host USB3.1 port) |
| ![Intel® RealSense™ Depth Camera D435](image) | Intel® RealSense™ Depth Camera D435 | ![Intel® RealSense™ Depth Camera D435](image)  
USB3 Type-C to USB3 Micro-B Cable  
(Used to connect Depth Camera to host USB3.1 port) |

- DFU Tool supports firmware updates for integrated depth cameras built with Intel® RealSense™ Vision Processor D4 and Depth Modules from Intel® RealSense™ D400 series

- For information on Intel® RealSense™ D400 series, refer to Datasheet at https://realsense.intel.com/intel-realsense-downloads/#documents
Best Known Configuration (BKC)

Intel will specify the version of each component that should be used in the setup for each software release. To ensure Intel can provide the best support it is important that the version of each component matches the latest “best known configuration” table.

Windows* 10 Host Hardware Requirements:

<table>
<thead>
<tr>
<th>Component</th>
<th>Usage</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel processor-based platform with USB 3.1 port</td>
<td>Host System</td>
<td>N/A</td>
</tr>
<tr>
<td>4GBs DDR RAM</td>
<td>Required for Intel® RealSense™ D400 series camera functionality</td>
<td>SODIMM</td>
</tr>
<tr>
<td>&gt;128 GB HDD/SSD</td>
<td>At least 128GBs for OS + LibRealSense Packages</td>
<td>N/A</td>
</tr>
<tr>
<td>Intel® RealSense™ D400 Series</td>
<td>Depth Camera</td>
<td>D400/D410/D415/D420/D430/D435</td>
</tr>
</tbody>
</table>

Windows 10 Host Software Requirements:

<table>
<thead>
<tr>
<th>Component</th>
<th>Usage</th>
<th>Version</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Operating System - Windows 10</td>
<td>Update Camera Firmware / Run LibRealSense Examples</td>
<td>Windows 10, 64bit RS2 (Ver. 1703) Pro, 64bit</td>
<td>Press START Button -&gt; Type &quot;Winver&quot; -&gt; Press [ENTER]</td>
</tr>
<tr>
<td>Device Firmware Update Tool (DFU) for Intel® RealSense™ D400 Series Cameras</td>
<td>Install latest camera firmware on RealSense™ Cameras</td>
<td>Public Release</td>
<td><a href="https://realsense.intel.com/intel-realsense-downloads/#firmware">https://realsense.intel.com/intel-realsense-downloads/#firmware</a></td>
</tr>
</tbody>
</table>

The software installation process requires industry tools and software to be installed on a host system. The version of these tools is less strict then the software components, but recommended to align versions where possible.
Camera Enumeration
Device Enumeration – Windows* 10 Host System

In order for Windows* 10 to recognize D400 Series devices and install correct drivers; all Windows Updates must be applied prior to plugging D400 Series camera to Windows Host System. For below instructions, D410 camera was used, device enumeration will differ from D400/D415/D420/D430/D435. Driver installation across Windows* 10 remains the same.

Enumeration Details

1. **Plug D400 Series** camera to Windows 10 Host via USB3.1 port.
   > “Setting Up Device” dialog box should appear on very first plug in of device.
2. **Open Device Manager**
   > Right click Start button.
   > Click on Device Manger.
3. **Notice** the D400 series number of appropriate camera is shown under “Cameras”. If camera is not shown under “Cameras”, please make sure all Windows 10 Updates are downloaded and installed. Also verify if Windows 10 RS2 1706 is installed.
DFU Tool Install/Usage
Steps
1. Install Windows* 10 on Host with USB3.1 port.
2. Copy and paste DFU tool and corresponding D400 series firmware .bin files (signed firmware) to Windows* 10 host system. Note what directory files are stored.
3. Open to DFU Tool directory; and right click “intel-realsense-dfu.exe” and choose, “Run as administrator”.
   > You can also open a command line as admin and run the “intel-realsense-dfu.exe” from there.
4. Plug in D400 series camera/s to host USB3.1 port
5. Command line window should appear with main menu of tool being displayed.
   - Press “2” then [ENTER] to display a list of upgradeable cameras.
Steps (Contd.)

6. Notice a list is produced in command line window; press “1” [ENTER] to select D400 series camera and begin firmware update process.

7. Prompt asks user to input file path of firmware .bin file.
   > Type the full file path with firmware filename included and press [ENTER].

8. Notice output of downloaded bytes transmitting, this process takes ~3 minutes until completion.
Steps (Contd.)

9. When firmware upgrade is complete, the camera will reset. A windows icon saying “Device is undergoing additional setup” should pop up. The main menu will appear again.

10. Verify the firmware version installed on camera by pressing, “4” and [ENTER] followed by “1” and [ENTER]. Notice the firmware version has changed on the Intel® RealSense™ Camera selected for firmware update.
Intel Customer Support via Email

**Intel® Customer Support**
1. Go to http://customercare.intel.com and Sign Up to create an account.
2. Create an account.
3. Request Support and sign in.
4. Enter “RealSense” under “3. Find your product or service”.

Request Support
Let us help with your service and warranty issues (sign in required)
Intel® Customer Support via Email (Cont.)

- Submit a service request to Intel Customer Support through email at [http://customercare.intel.com](http://customercare.intel.com).

**Intel® Customer Support**

5. Select the RealSense™ Product you need support for.
6. Describe your issue and click on “Next Details”.
7. Provide more details on environment and issue.
8. Once all details are entered, submit request.
RealSense™ Community Issue Submission
Customers need to login on the Intel® RealSense™ Community
RealSense™ Community Link: https://communities.intel.com/community/tech

RealSense™ Community – Issue Submission Form
1. Open Welcome document, click: https://communities.intel.com/docs/DOC-111552
2. Click on “Click HERE to register”.
3. Register your account with valid email address. A verification email will be sent to registered email address.
4. Log into your email and activate account by clicking on link from Intel® email.
5. Return to website and log in: https://communities.intel.com/community/tech
Customers need to login on the Intel® RealSense™ Community

RealSense™ Community Link: https://communities.intel.com/community/tech

RealSense™ Community – Issue Submission Form

6. Click on “Intel® RealSense™ Community under “Boards and Kits”.

7. Click on link “Ask a question.”

8. A window will open and user can ask a question or state an issue they are seeing with their RealSense™ Camera.
   > Use a proper title (IE: D410 Intel® RealSense™ Camera does not stream video)
   > Enter as much details about issue as possible. The more information – the better the RealSense™ community can help with an issue.
   > Select a category for issue, such as “RealSense™ for PC”, depending on what camera is being used.

9. When all information is entered, click “Post” submit issue to RealSense™ Community.
Issue Submission via GitHub
Issue Submission Process on GitHub

- Customers need to create a GitHub account and login.
- GitHub Link: [https://github.com/IntelRealSense/libRealSense/issues](https://github.com/IntelRealSense/libRealSense/issues)

GitHub Issue Submission Process for LibRealSense Releases

1. Once logged into site, click on “Issues” tab.
2. Click “New Issue” Icon.
3. Enter proper name of new issue.
4. Fill out required information such as, camera model, FW version, OS, and actual issue description.
5. When finished documenting issue, click icon “Submit new issue”.
6. Once a new issue is submitted, a forum is created allowing for Intel® teams to begin fixing / commenting on new issue.