Cascade® Software Installation Overview

This document contains a summary of how to install and activate the Cascade® software, configure Windows for an optimal user experience, update firmware on the Cascade® hardware, and optionally connect to a CadLink Server. If the computers were purchased from Cadwell, the software is already installed and configured.

If more than one Cascade® Surgical Studio system will be existing on the same network, it is strongly advised that a CadLink Server is part of the configuration. The CadLink Server is used to connect multiple Cascade® systems together with centralized storage and management of patient data, reports, users, and settings. It is also required for remote monitoring.

Minimum computer requirements

The computer used to run the Cadwell Cascade® system is an integral part of the Cascade® neuromonitoring system. For optimum performance, use a computer that meets the following criteria. Standard computers purchased from Cadwell will meet the listed requirements.

Performance requirements

These requirements represent the minimum computer performance requirements necessary to run the Cascade® system. Your Cascade® equipment will run better when used with a computer that has a faster processor and more RAM than listed here:

- Operating System: Windows 7 Professional (64-bit) or Windows 10. Recommend Windows 10.
- Processor: Dual Core Intel i7, 3.0 GHz or faster. Recommend Quad Core i7.
- Hard Disk Drive: 128 GB at 7200 RPM. Recommend SSD.
- Memory (DRAM): 8 GB.
- Archive Device: Recordable DVD+R/+RW and CD-RW drive to use built-in archive utility in software. Or any Windows supported device.
- Graphics: 1366 x 768 resolution. Recommend 1920 x 1080 resolution.
- Network: 10 Base-T Ethernet card; Second card (10/100 Base-T) or wireless required for remote monitoring.

US and Canada regulatory requirements

Computer and information technology equipment connected to the Cascade® must be third-party certified to UL1950 or IEC950.

European Union regulatory requirements

Computer and information technology equipment connected to the Cascade® must be third-party certified to EN60950.

Software Installation Instructions

These steps are only necessary if you did not purchase a Cadwell PC to run Cascade® Classic and Surgical Studio.

Administrator Rights

You must log into your computer with Administrator rights in order to install Cascade® Classic and Surgical Studio.

Ensure Windows compatibility

Open the Windows start menu, search for "system information", and run it to see your Windows edition. Ensure your computer is Windows 7 Professional (64-bit) or later. Close the system information and continue with the install.

Uninstall Previous Cascade® Classic Software Versions

This step is not necessary if only installing Cascade® Surgical Studio.
This will not remove your unique procedure setup files, report templates or patient data files.

1. Open the Windows start menu, search for "remove program", and run "Add or remove programs".
2. Right-click on "Cascade Classic" and click "Uninstall".
3. Follow uninstall process.

Install Cascade® Classic and Surgical Studio

1. If installing Cascade® Classic on a Windows 10 PC, open the Windows start menu, search for "windows features", and run "Turn Windows features on or off". Please ensure the ".NET Framework 3.5" feature is checked and click OK. If the feature was previously unchecked, restart your PC for the changes to take effect.
2. Insert the installation CD into the computer.
3. Browse to the media drive and run either "Cascade Classic 3.1 SP2 Setup.exe" or "Cascade Surgical Studio 3.1 SP2 Setup.exe".
4. Follow the installation process.

Third Party Applications

It is not recommended to install third party applications on the computer running the Cadwell Cascade® system. Third party applications can cause undesirable results with medical equipment such as Cascade®. It is impossible for medical equipment manufacturers to test every possible combination of software that might be loaded onto a device. Only install applications that are absolutely necessary on your Cadwell Cascade® systems.

Configure Windows for Cascade®

If you purchased your computer from Cadwell, Windows is already configured for the optimal performance of Cascade® Surgical Studio. Otherwise, follow the instructions below to configure.

Network Card

1. Click the desktop start menu, and then click "Control Panel."
2. View the options by Category.
3. Under Network and Internet, select "View network status and tasks."
4. In the left toolbar, click "Change adapter settings"
5. Right-click on the LAN or high-speed internet connection that will be used to communicate with the Cascade® base unit, and then select "Properties."
6. The Properties window will open.
   a. Uncheck all protocols in the list except for the Internet Protocol Version 4 (TCP/IPv4).
   b. Double-click the Internet Protocol Version 4 (TCP/IPv4).
      i. Select "Use the following IP address."
      ii. Input the default Cadwell IP address: 192.168.113.66 and the Subnet Mask: 255.255.255.0
      iii. Click the Advanced... button on the bottom right of the window.
      iv. Click on the WINS tab at the top of the window.
         1. Un-check the box next to "Enable LMHOSTS lookup."
         2. In the NetBIOS section, click "Disable NetBIOS over TCP/IP.
         3. Click the OK button.
      v. Click the OK button.
   c. Click the OK button.
7. Click on the "Configure" button in the upper-right corner.
   a. Click on the "Advanced" tab, select "Speed & Duplex", and then select "10 Mbps Full Duplex" from the drop down value list on the right. *"Speed & Duplex" might also be displayed as "Media Type", "Connection Type", or "Link Speed & Duplex". Some systems may have a completely separate "Link Speed" tab.*
   b. Click on the "Power Management" tab and deselect "Allow the computer to turn off this device to save power". *Note that not all network cards will have a power management tab.*
8. Close the network connections window.

Disable Screensaver

1. Open the Windows start menu, search for "screensaver", and run "Turn screen saver on or off".
2. Set screen saver to "(None)" and click "OK".

PC Power Settings

1. Open the Windows start menu, search for "power options", and run "Power Options".
2. Select "High Performance". You may need to expand "Show additional plans" to see this option.
3. Click "Change plan settings" under "High Performance".
4. Set "Turn off the display" to "Never".
5. Set "Put the computer to sleep" to "Never".
6. Click "Change advanced power settings"

7. Under "PCI Express", under "Link State Power Management", change the setting to "Off".
8. Click OK to back out of all windows.

Activating the Cascade® Software

Activating Cascade® Classic

Upon running Cascade® Classic for the first time, you will be asked to enter a license key. Select "Yes" and follow the on-screen instructions.

Activating Cascade® Surgical Studio

Upon running Cascade® Surgical Studio for the first time, you will be asked to enter a trial mode or activate the software. To activate a free 60-day trial of all features, select "Enter Trial Mode". To activate the purchased features and application, select "Activate the Software" which produces the two following options:

- If the computer has current access to the internet, select "Activate Online". Enter the License ID which can be found on the installation CD. Enter a description of the computer and select "Continue". The software will automatically unlock with the features that were purchased and assigned to the previously entered License ID.
- If the computer does not have an internet connection, select "Activate by Phone". Enter the License ID for that system which can be found on the installation CD and select "Continue". Follow the remaining on-screen instructions to unlock the features that were purchased and assigned to the previously entered License ID.

If one or more features are under trial and about to expire, a courtesy reminder is given to the user. Clicking on the question mark in Cascade® Surgical Studio and selecting "Product Licensing…" displays the license state for all features.

Update Firmware

Firmware is the software that runs on Cadwell's hardware. Firmware updates are available for base units, amplifiers, ES Detectors, electrical stimulators, junction board, TCS-1, TCS-4, TCS-1000 and ES-IX.

Firmware updates take 4 to 5 minutes, and up-to-date firmware is required to run procedures.

Versions

Hardware Type	Base	Junction Board	E-Stim Board
Cascade® Elite	4.3	2.2	5.9 If ES-IX, 0.11
Cascade® PRO	1.25	2.2	ES-IX, 0.11

Warning about downgrading firmware

If downgrading firmware on an Elite or Pro from software version 3.0 or higher to a 2.5 or earlier software release, you must downgrade the firmware in a step-wise fashion, going to software version 2.7 before going to 2.5 or earlier.

Automatically update firmware

Check for a device firmware update by either selecting "Start New Procedure" in Cascade Classic or just starting Cascade Surgical Studio. The device flash utility will begin an automatic update of your base unit firmware. When the firmware update is complete, power OFF the base unit, wait for 10 seconds, then power ON the base unit.

Manually update firmware for base unit in Windows 7

Even if firmware is up-to-date, a manual firmware update will reinstall the firmware.

1. Click the Start menu
2. Click All Programs
3. Click Cadwell
4. Click Cascade® Surgical Studio
5. Click Update Cascade® Elite Base OR Click Update Cascade® Pro Base
6. Follow the prompts for the firmware update. The update will automatically close Cascade® Surgical Studio software.
7. Once update is complete, you must turn off hardware for at least 10 seconds.
8. Turn on hardware.
9. Open Cascade® Surgical Studio software. Your update is complete.

Manually update all firmware

Even if firmware is up-to-date, a manual firmware update will reinstall the firmware.

1. Ensure that the peripheral hardware that needs updating is attached to the base unit, and that the base unit is connected to the PC.
2. Navigate to C:\Program Files\Cadwell\Cascade Surgical Studio_FirmwareUpdateLinks
3. Select the firmware update from the list. Double-click, and follow the prompts.
4. Once the firmware update is complete, you must turn off hardware for at least 10 seconds.
5. Restart the hardware and open the Cascade® Surgical Studio software. Firmware update is complete.

Connecting to a CadLink Server

If more than one Cascade® Surgical Studio system will be existing on the same network, it is strongly advised that a CadLink Server is part of the configuration. In order to have the Cascade® Surgical Studio client communicating with the CadLink Server, the CadLink Client on the system much be configured to point to that server.

1. Open the CadLink Client Control Panel by clicking on it in the task tray (most likely a gray checkmark).

2. Select "Tools" → "Advanced Settings". Check the box that says "Using CadLink Server".
3. Enter the server name. The server port can be left as the default unless IT changed it.
4. Select "OK" to connect and synchronize with the CadLink Server. Once the client is connected to the server and fully up-to-date, the CadLink Client Control Panel icon in the task tray should become a green checkmark. This process may take several minutes.