

## **IN** Carta

Image Analysis Software Version 1.17

Installation Guide





#### IN Carta Image Analysis Software Installation Guide

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#### Chapter 1: IN Carta Image Analysis Software



The IN Carta<sup>®</sup> Image Analysis Software combines powerful analytics with an intuitive interface to simplify workflows for advanced phenotypic classification and 3D image analysis. It provides robust, quantitative results from complex biological images and datasets utilizing advanced AI technology.

#### **Faster Data**

- Intuitive design makes complex analysis accessible with minimal training.
- Shorten analysis time with true parallel processing.

#### **Reliable Data**

- Sophisticated algorithms generate reliable data with minimal user input.
- Improved segmentation algorithms represent cellular structures more accurately.

#### **Results that Matter**

- See real results quickly—from populations to single cells—using integrated data visualization tools.
- User-friendly interface guides you through your discoveries with continual updates that grow with your needs.

#### **Obtaining Support**

Molecular Devices is a leading worldwide manufacturer and distributor of analytical instrumentation, software, and reagents. We are committed to the quality of our products and to fully supporting our customers with the highest level of technical service.

Our Support website—www.moleculardevices.com/service-support—describes the support options offered by Molecular Devices, including service plans and professional services. It also has a link to the Molecular Devices Knowledge Base, which contains documentation, technical notes, software upgrades, safety data sheets, and other resources. If you still need assistance, you can submit a request to Molecular Devices Technical Support.

#### **Technical Support**

To contact Molecular Devices Technical Support, submit a support request through the Molecular Devices Knowledge Base at support.moleculardevices.com.

You can also submit a support request by phone. For regional support contact information, go to www.moleculardevices.com/contact.

To expedite support, be prepared to provide the software version and the license ID.

- To display the software version, in the top right corner of the IN Carta window, click **System > About**.
- To display the license ID, in the top right corner of the IN Carta window, click **System > License**.



#### Documentation

Review the product documentation on the Molecular Devices Knowledge Base at support.moleculardevices.com. In addition, online Help is available within the IN Carta software.

#### Additional Resources

Web-based microscopy courses:

- www.microscopyu.com
- www.ibiology.org/ibioeducation/taking-courses/ibiology-microscopy-short-course.html

The *Molecular Probes Handbook* offers advice on fluorescent probes and can help you determine if there are better stains available for your analysis:

• www.thermofisher.com/us/en/home/references/molecular-probes-the-handbook.html

The Assay Guidance Manual details state-of-the-art approaches to high-content screening (HCS) and discussed challenges specific to HCS. It serves as a good introduction for new HCS practitioners.

• www.ncbi.nlm.nih.gov/books/NBK100913

#### **About This Guide**

This guide is intended for the scientist or IT professional who will be installing and configuring the IN Carta software. It contains critical information that helps you successfully install the software.

The information in this guide is valid for IN Carta software version 1.17 and is subject to change without notice. We recommend that you review the guide on the Molecular Devices Knowledge Base at support.moleculardevices.com for the most up-to-date information.



**CAUTION!** We recommend installing the IN Carta software on a computer that meets the minimum requirements. If you install on a computer that does not meet the minimum requirements, Molecular Devices cannot guaranteed system functionality and performance.

The following table describes the minimum and recommended requirements for the IN Carta computer:

Requirement	Minimum	Recommended
Operating System	Windows 10 Professional, 64-bit	Windows 10 Professional, 64- bit
Windows Region	English (US)	English (US)
Processor Frequency	3.2 GHz	4.6 GHz
Processor Cores	8	36
RAM	16 GB	128 GB
Hard Disk	1 TB (50 GB free)	<ul> <li>Both of the following:</li> <li>2 TB Solid-State Drive (with 50 GB free)</li> <li>4 TB Hard Disk Drive</li> </ul>
Nvidia GPU Memory (optional, see below)	1GB	24 GB
Nvidia GPU CUDA Compute Capability (optional, see below)	3.5	
Monitor Size		Optimized for a 24-inch screen
Monitor Resolution		Optimized 1920 × 1200



**Note:** The Nvidia graphics processing unit (GPU) is required only for the optional SINAP module or the optional IN Carta 3D Viewer.

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This section describes the procedures required before running the IN Carta software installer:

- Setting the Windows Region Formats, see below
- Removing an Earlier Version of the Software, see page 12
- Checking the Computer, see page 12

#### Setting the Windows Region Formats

Installing the IN Carta software requires that the Windows Region Formats be set to English (United States).

To set Windows Region Formats for the software:

- 1. In Windows, click Edit, then expand Windows System, and click Control Panel.
- 2. Click the View by drop-down, and select Category.
- 3. Click Clock and Region.
- 4. In the Clock and Region window, click Region.



5. In the Region window, on the Formats tab, set the Format field to English (United States).

mats Administrative	
ormat:	
English (United Stat	es) ~
	~
Date and time form	===
Short date:	M/d/www
	101 Gryyyy
Long date:	аааа, мимии а, уууу
Short time:	h:mm tt 🗸 🗸
Long time:	h:mm:ss tt 🗸 🗸 🗸
First day of week:	Sunday 🗸
Examples	
Short date:	8/24/2021
Long date:	Tuesday, August 24, 2021
Short time:	11:41 AM
Long time:	11:41:27 AM
	Additional settings

6. Click Additional settings.

7. In the **Customize Format** window, on the **Numbers** tab, click **Reset**. This ensures that the default English language number settings are used.

Numbers Currency Time Date		
Example Positive: 123,456,789.00	Negative: -123,456,789.	00
Decimal symbol:		~
No. of digits after decimal:	2	$\sim$
Digit grouping symbol:	,	$\sim$
Digit grouping:	123,456,789	$\sim$
Negative sign symbol:	-	$\sim$
Negative number format:	-1.1	$\sim$
Display leading zeros:	0.7	$\sim$
List separator:	,	~
Measurement system:	U.S.	$\sim$
Click Reset to restore the system def numbers, currency, time, and date.	ault settings for	Reset

- 8. Click OK.
- 9. In the **Region** window, click the **Administrative** tab.

	-		
🔗 Regi	on		>
Formats	Administrative		
Welc	ome screen and new user accou	nts	
View	v and copy your international se ounts and new user accounts.	ttings to the welcome screen, system	
		Copy settings	
Lang	uage for non-Unicode program	5	
This text	setting (system locale) controls in programs that do not suppor	the language used when displaying t Unicode.	
Cur	rent language for non-Unicode	programs:	
	English (United States)		
		Change system locale	
		OK Cancel A	pply
			_

10. On the Administrative tab, set the Language for non-Unicode programs to English (United States).



11. In the **Welcome screen and new user accounts** section, click **Copy settings**.

12. Select the Welcome screen and system accounts check box.



Note: This check box may not be available in all Windows 10 versions.

- 13. Click OK.
- 14. Click the Formats tab.
- 15. Click Language preferences.
- 16. On the Language window, set the Windows display language to English (United States).



Note: If English (United States) is not available in the drop-down, click the Add a Windows display language in Microsoft Store to obtain the correct Local Experience Pack.

17. Under **Preferred languages**, set **English (United States)** as the **Default app language** and **Default input language**. The default language appears at the of the list of languages.

Prefe	erred languages
Apps a suppo keybo	and websites will appear in the first language in the list that they rt. Select a language and then select Options to configure ards and other features.
+	Add a preferred language
⊕ Ă字	English (United States) 📌 🖒 🖟 и и Efault app language; Default input language Windows display language
A字	English (World) Language pack available
Ă字	English (Netherlands) Language pack available

Note:

- If **English (United States)** is not already set, click it, and use the arrow buttons to move it to the top of the list.
- If English (United States) is not listed, click Add a preferred language, and follow the on-screen prompts to install it.
- 18. If you made changes to any settings, restart the computer.

#### Removing an Earlier Version of the Software

If you are upgrading to version 1.17 of the IN Carta software from version 1.16 or version 1.15, you must first uninstall the following earlier versions of the IN Carta software before running the IN Carta software installer.

- INCarta
- INCarta\_Base

SINAP users can leave IN\_Carta\_Models in place.

**Note:** We recommend restarting the computer BOTH before and after uninstalling an earlier version of the software.

If you are upgrading from a software version earlier than version 1.15, contact Molecular Devices Technical Support. See Obtaining Support on page 6 for details.

#### After Upgrading

After upgrading the IN Carta software, you can access existing results in version 1.17 if either of the following is true:

- The results were generated in version 1.16 or 1.15 of the software.
- The results were converted to the version 1.16 or 1.15 data format (during an earlier upgrade).

Existing datasets are converted to the current format the first time you open them in version 1.17. After a dataset is converted, the results can no longer be viewed in the earlier version.

#### Checking the Computer

To run the IN Carta software, confirm that the following is true:

- The computer meets the minimum requirements described in IN Carta Software Requirements on page 7.
- The User Account Control Setting in Windows settings (Control Panel > System and Security > Security and Maintenance > Change User Account Control) is set to Never Notify during installation.



**Note:** This setting is only required during installation. You can revert the setting after the software is installed.

- You are logged in to the computer with a Windows administrator account.
- The user name for the Windows administrator account on the IN Carta computer contains only alphanumeric characters. No special characters (including spaces, periods, or underscores) are allowed. You may need to work with your IT Department to get an account that meets this requirement.
- No other installation of the IN Carta software exists on the computer. See Removing an Earlier Version of the Software on this page for details.
- The IN Carta folder (C:\Program Files\INCarta) does not exist on the computer. If it does exist, delete it.
- All files, folders, and programs are closed.
- The Windows Region Formats are set to **English (United States)** as described in Setting the Windows Region Formats on page 9.

#### Chapter 4: Installing the IN Carta Software



This section describes the procedures required to install version 1.17 of the IN Carta software:

- Downloading the Software Installers, see page 14
- Installing the Software, see page 15
- Verifying the GPU Driver for the SINAP Module and IN Carta 3D Viewer, see page 16 (optional)
- Installing the SINAP Deep Learning Models, see page 17 (optional)
- Activating the Software License, see page 18

**Note:** The IN Carta software does not support direct upgrades from earlier versions. If you are upgrading from an earlier version, you must uninstall that version before running the IN Carta software installer. See Removing an Earlier Version of the Software on page 12 for details.

#### **Downloading the Software Installers**

You can download the IN Carta software installers from the Molecular Devices Knowledge Base.



**Note:** If the IN Carta computer is not connected to the Internet, use another computer that has an Internet connection to download the software installers, and then transfer it to the IN Carta computer.

To download the software installers:

1. In a browser, log in to the IN Carta page of the Molecular Devices Knowledge Base at www.meta.moleculardevices.com/links/incarta.

#### Note:

- If you do not have a Knowledge Base account, click **Create Account**, and follow the on-screen instructions.
- With a computer purchased from Molecular Devices, you can also click IN Carta download on the Windows Desktop to connect to the IN Carta page on the Molecular Devices Knowledge Base.
- 2. Under Software Downloads, click IN Carta 1.x Software Download.
- 3. Download the current version of the IN Carta installer and corresponding checksum file to the **Desktop** folder:
  - INCarta\_1.17.xxxxxxx.exe
  - INCarta\_1.17.xxxxxxx\_checksum.exe
- 4. Download the current version of the IN Carta Base installer and corresponding checksum file to the **Desktop** folder:
  - INCarta\_Base\_1.5.xxxxx.exe
  - Base\_1.5.xxxxx\_checksum.exe
- 5. If you are installing the SINAP module, download the IN Carta Models installer and corresponding checksum file to the **Desktop** folder:
  - INCarta\_Models\_1.3.xxxxx.exe
  - Models\_1.3.xxxxx\_checksum.exe
- 6. Double-click each checksum file to verify the integrity the installers.

Note: If a Microsoft Defender message appears, click More info, then click Run anyway.

- If the checksum test passes, the installer version displays.
- If the checksum test fails, a file corruption error displays. Repeat these steps to download the installer again.

#### Installing the Software

**CAUTION!** You must complete the steps described in Before Installing the IN Carta Software on page 9 in order to run the IN Carta software installer. Otherwise, system functionality and performance may be affected.

To install the IN Carta software:

- 1. Do the following to install INCarta\_Base:
  - a. On the Windows Desktop, right-click **INCarta\_Base\_1.5.xxxx.exe** and select **Run as** administrator.

**Note:** If a Microsoft Defender message appears, click **More info**, then click **Run anyway**.

- b. Click Yes.
- c. Click Install.
- d. When the installation completes, click **Close**.
- 2. Do the following to install IN Carta software.
  - a. On the Windows Desktop, right-click **INCarta\_1.17.xxxxxx.exe** and select **Run as** administrator.

Note: If a Microsoft Defender message appears, click **More info**, then click **Run** anyway.

- b. Review the license agreement.
- c. If you accept the license agreement, select the **I agree to the license terms and** conditions check box.
- d. Click Install.
- e. If a message displays about monitor resolution, click **Yes** to continue installing.
- f. When the installation completes, click **Close**.

#### Verifying the GPU Driver for the SINAP Module and IN Carta 3D Viewer

**Note:** If you did not purchase the SINAP module or the IN Carta 3D Viewer, you can skip this procedure.

The optional IN Carta SINAP module requires a supported Nvidia graphics processing unit (GPU) with the latest driver and a CUDA compute capability of at least 3.5. For details on determining the CUDA compute capability of your Nvidia GPU, go to developer.nvidia.com/cuda-gpus.

To verify the GPU driver installed in the IN Carta computer:

- 1. Right-click 🖽 Start, and select Device Manager.
- 2. Under Display Adapters, verify that an Nvidia GPU is listed.



- 3. Double-click the Nvidia GPU and click the Driver tab.
- 4. Note the GPU model and the last five digits of the driver version.

NVIDIA Quadro M1000M	Properties ×
General Driver Details	Events Resources
NVIDIA Quadro	M1000M
Driver Provider:	NVIDIA
Driver Date:	3/10/2021
Driver Version:	27.21. 4.6192
Digital Signer:	Microsoft Windows Hardware Compatibility Publisher
Driver Details	View details about the installed driver files.
Update Driver	Update the driver for this device.
Roll Back Driver	If the device fails after updating the driver, roll back to the previously installed driver.
Disable Device	Disable the device.
Uninstall Device	Uninstall the device from the system (Advanced).
	OK Cancel

5. In a browser, go to www.nvidia.com/download/index.aspx.

6. On the NVIDIA Download Drivers page, select your GPU model and operating system.

<b>NVIDIA Driver</b>	<sup>-</sup> Downloads	
Select from the dropdo	wn list below to identify the appropriate drive	r for your NVIDIA product.
Product Type:	NVIDIA RTX / Quadro	~
Product Series:	Quadro Series (Notebooks)	~
Product:	Quadro M1000M	~
Operating System:	Windows 10 64-bit	~
Download Type:	Production Branch/Studio	✓ ?
Language:	English (US)	~

#### Note:

- If a Download Type drop-down appears, select Production Branch/Studio or Studio Driver (SD).
- With a Telsa series GPU, in the CUDA Toolkit drop-down, select 11.0.
- 7. Click Search.
- 8. Check the version of the driver that displays and do one of the following:
  - If the displayed driver is the same as your installed driver, no action is required. You can skip the rest of this procedure.
  - If the displayed driver is a later version than your installed driver, continue this procedure to download and install the latest driver.

**Note:** The driver version number appears differently on the Nvidia website and in the Device Manager Properties dialog. The decimal point is shown in different place. For example, the driver shown on the website as version 471.68 appears in the Device Manager Properties dialog as version 4.7168.



- 9. Click **Download** and follow the on-screen prompts to download the driver.
- 10. In Windows File Explorer, browse to the location of the downloaded driver.
- 11. Double-click the driver and follow the on-screen prompts to install it.

#### Installing the SINAP Deep Learning Models

If you are installing the software for the first time, the optional SINAP module requires that you install the deep learning models.

**Note:** If you are upgrading the IN Carta software from version 1.16 or version 1.15 or you did not purchase the SINAP module, you can skip this procedure.

To install the deep learning models for the SINAP module:

1. On the Windows Desktop, right-click **INCarta\_Models\_1.3.xxxx.exe** and select **Run as** administrator.

**Note:** If a Microsoft Defender message appears, click **More info**, then click **Run anyway**.

- 2. Click Install.
- 3. When the installation completes, click Close.

#### Activating the Software License

To activate the IN Carta software license, you need the following:

- IN Carta License Activation utility, which is installed on your computer along with the IN Carta software.
- Activation Code, which you received from Molecular Devices.



- If you do not have your activation code, contact Molecular Devices Technical Support. See Obtaining Support on page 6 for details.
- An activation code can only be used to activate a license one time. If you need to reuse a code, it must be reset by Molecular Devices Technical Support.

Activating the software license requires a computer with an Internet connection to download a license file. If the IN Carta computer is not connected to the Internet, you can use another computer that has an Internet connection to download a license file, and then transfer it to the IN Carta computer.

#### Activating on an IN Carta Computer Connected to the Internet

To activate the software license on an IN Carta computer with an Internet connection:

- 1. On the IN Carta computer, in Windows File Explorer, browse to the C:\Program Files (x86)\INCarta License folder.
- 2. Right-click INCartaLicensing.exe and select Run as administrator.

( IN Carta License Activation		– 🗆 X
Online license activation	Activate license for this PC	
Offline license activation	Save PC Information	Activate licence for another PC

- 3. Next to Online license activation, click Activate license for this PC.
- 4. In the **Enter the activation code** field, enter the activation code you received from Molecular Devices.

C Activating IN Carta License For This Com	outer	_	$\times$
Enter the activation code:			_
	Activate license		

5. Click Activate license.

#### Activating on an IN Carta Computer Not Connected to the Internet

To activate the software license with the IN Carta computer without an Internet Connection:

- 1. On the IN Carta computer, in Windows File Explorer, browse to the C:\Program Files (x86)\INCarta License folder.
- 2. Right-click INCartaLicensing.exe and select Run as administrator.

( IN Carta License Activation			-	$\times$
Online license activation	Activate license for this PC			
Offline license activation	Save PC Information	Activate licence for	another	PC

- Next to Offline license activation, click Save PC Information.
   The IN Carta License Activation utility creates an INCartaLicenseActivation folder on the Desktop.
- 4. Transfer this folder to the **Desktop** folder of a computer connected to the Internet.
- 5. On the computer connected to the Internet, right-click **INCartaLicensing.exe** and select **Run as administrator**.
- 6. Next to Offline license activation, click Activate license for another PC.
- 7. In the **Enter the activation code** field, enter the activation code you received from Molecular Devices.

C Activating IN Carta License For Another	Computer -	_	$\times$
Enter the activation code:			
Select file with PC information:	Browse		
	Activate license		

- 8. Next to Select file with PC information, click Browse.
- 9. Navigate to the INCartaLicenseActivation folder on the Desktop.
- 10. Select PCInfo.lcf.
- 11. Click Open.
- 12. Click Activate license.

The IN Carta License Activation utility creates a License file (license.lic) the INCartaLicenseActivation folder on the Desktop.

13. Transfer the License folder back to the C:\Program Files (x86)\INCarta\_License folder on the IN Carta computer.

#### Updating Protocols After Upgrading

After upgrading the IN Carta software, you must update any existing protocols before you can use them. Protocols that haven't been updated do not appear on the Protocols tab on the Protocol Editor table.



You can import the protocols to add them back to the list and make them available for use.

To update protocols after upgrading:

- 1. In the **Protocol Editor** table, click the **Import Protocols** tab.
- 2. Click Choose Files.
- 3. Go to the folder that contains the protocols, which is one of the following:
  - %localappdata%\INCarta\Protocols\1.15
  - %localappdata%\INCarta\Protocols\1.16
- 4. Select the IPJ files that you want to use
- 5. Click Open.
- 6. Click **Import**.



This section describes the procedures required after running the IN Carta software installer:

- Granting User Group Permissions, see below
- Granting Software Permissions, see page 22

#### **Granting User Group Permissions**

If multiple users will be logging in to the IN Carta computer, you must grant Full Control permission to the Users group for IN Carta folder.

Permissions for INCarta		×
Security		
Object name: C:\Program Files\	INCarta	
Group or user names:		
SCREATOR OWNER		^
SYSTEM		
Administrators (\Administrato	ors)	
Sers (\Users)		
StrustedInstaller		~
<		>
	A <u>d</u> d	<u>R</u> emove
Permissions for Users	Allow	Deny
Full control	$\checkmark$	^
Modify	$\checkmark$	
Read & execute	$\sim$	
List folder contents	$\sim$	
Read	$\checkmark$	
ОК	Cancel	Apply

To grant user group permissions:

- 1. In Windows File Explorer, browse to the C:\Program Files folder.
- 2. Right-click on the INCarta folder, and select Properties.
- 3. Click the **Security** tab.
- 4. Click Edit.
- 5. In the Group or user names list, select Users.
- 6. In the **Permissions for Users** list, next to **Full control**, select the **Allow** check box.
- 7. Click OK.
- 8. Click OK.

#### **Granting Software Permissions**

The first time you run the IN Carta software after installing, one or more Windows Security Alerts may appear.



These alerts are requesting that you grant the permissions required to run the software. If an alert appears, click **Allow access**.



Visit us on Spectranet.

#### **Contact Us**

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