



WHAT'S NEW IN VICON NEXUS 2.11?

WHAT'S INSIDE?

About Vicon Nexus 2.11 2

Nexus 2.11 new features and functions 3

Requirements and upgrading 8

Addressed issues 19

Known issues 22



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About Vicon Nexus 2.11

About Vicon Nexus 2.11

Vicon Nexus 2.11 is a point release that provides features and enhancements in addition to those that were included in earlier releases of Nexus 2. For more information, see [Nexus 2.11 new features and functions, page 3](#).

Nexus 2.11 new features and functions

Nexus 2.11 new features and functions

Nexus 2.11 provides the following new features and enhancements:

- [Compatibility with Vicon Vantage+, page 4](#)
- [Data management upgrade, page 6](#)
- [Other enhancements, page 7](#)

Nexus 2.11 new features and functions

Compatibility with Vicon Vantage+

Nexus 2.11 supports the use of the Vantage+ firmware upgrade (Firmware 725), enabling you to use **High Speed** mode on your Vantage cameras without having to change the field of view (FOV) or lens. When you capture optical data, subsampling (selectively reducing the pixel count) enables you to run at high camera frame rates without reducing the FOV (frame size).



Important

To use the new **High Speed** mode, you must upgrade to Firmware 725 or later.

Previously, to run Vantage cameras at higher frame rates while maintaining their maximum resolution, windowing was used, which reduces the size of the FOV.

Now, in new **High Speed** mode, you can run your Vantage cameras at higher frames rates while maintaining the FOV. You can change frame rates during capture and you do not need to set up your cameras again when you increase the frame rate, as the FOV is unchanged.

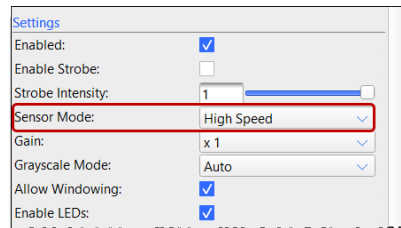
Note that because the higher speeds are achieved through subsampling (removing some pixels from the frames), some reduction in resolution is incurred. For details, see High-speed mode in the *Vicon Vantage Reference Guide*.


To select high-speed mode:

1. With your Nexus system in Live mode, set the system frame rate to the speed you want to use in High Speed mode.
A warning may temporarily be displayed, alerting you to the discrepancy between the requested frame rate and the actual system frame rate, until you select high speed mode for all the relevant cameras, as explained next.
2. On the **System** tab, select one or more cameras.

Nexus 2.11 new features and functions

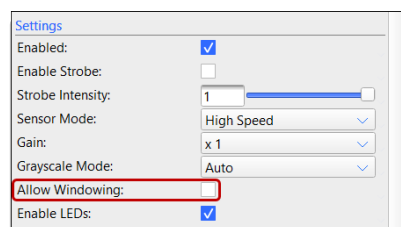
3. In the **Properties** pane, ensure the Advanced properties are displayed and in the **Settings** section, click the **Sensor Mode** menu and select **High Speed**.



In the **Camera** view pane, notice that the High Speed mode icon is displayed in the bottom left corner of the view .

4. With **Allow Windowing** selected (the default), windowing (reducing the size of the field of view) is used above the following frame rates:
 - V16: 500 fps
 - V8: 900 fps
 - V5: 1060 fps

If you don't want to use windowing in addition to High Speed mode, clear the **Allow Windowing** check box.



After a few moments, the system runs at the new speed.

Nexus 2.11 new features and functions

Data management upgrade

Nexus 2.11 includes Vicon ProEclipse 1.4.0, the latest version of Vicon's data management software. This version offers the following improvements:

- An indicator is now displayed to let you know when a backup is available for nodes.
- When you close ProEclipse, modified search schemes are automatically saved.

Nexus 2.11 new features and functions

Other enhancements

Nexus 2.11 also includes these enhancements:

- Calibration of large systems has been improved to reduce the chances of a split calibration.
- The reading and writing of X1D and X2D files has been upgraded to improve the performance of large systems during capture.

Requirements and upgrading

Requirements and upgrading

For information about requirements and systems supported for this version of Nexus, see:

- [Requirements for Nexus 2.11](#), page 9
- [Systems supported for Nexus 2](#), page 11
- [Upgrading Nexus](#), page 12

Note

The Vicon motion capture system and the Nexus software, manufactured by Vicon Motion Systems Limited, have been tested prior to shipment and meet the metrological requirements as detailed in the Medical devices directive.

(See *Regulatory information* in the Nexus documentation area of the Vicon website, docs.vicon.com/¹.)

¹ <http://docs.vicon.com/>

Requirements and upgrading

Requirements for Nexus 2.11

Note the following requirements for Nexus 2.11.

- [Operating systems for Nexus 2.11, page 9](#)
- [Basler video cameras and Nexus 2.11, page 10](#)
- [MATLAB and Nexus 2.11, page 10](#)
- [ProCalc and Nexus 2.11, page 10](#)
- [Vicon IMUs and Nexus 2.11, page 10](#)

For information on graphics cards, see [Graphics processors for Nexus, page 17](#).

For information on optimizing performance for AMD CPUs, see [Improving system performance on AMD CPUs²](#).

Operating systems for Nexus 2.11

Nexus 2.11 is supported under the following operating system:

- **Microsoft Windows 10, 64-bit** (this is the Vicon-recommended OS):
Compatible with and fully supported. Installation, software operation and required third-party drivers tested.

Although Nexus may install and function under other Microsoft Windows operating systems, Vicon does not support or recommend this.

² <https://docs.vicon.com/display/Connect/Improving+system+performance+on+AMD+CPUs>

Requirements and upgrading

Basler video cameras and Nexus 2.11

If Basler digital cameras will be connected to Nexus 2.11, ensure you have updated to the Basler Pylon5 SDK and drivers (v5.0.0), which are available from the Vicon website.

If you are using an Intel i340, i350 or i210 network card, when you install the drivers, select the option for **Filter drivers**, not **Performance drivers**.



Important

The Pylon5 driver supports Basler GigE cameras under Windows 10.

MATLAB and Nexus 2.11

If you are planning to use MATLAB with Nexus 2.11, ensure that, in addition to installing MATLAB, you install the **.Net Framework version 4.5³** or later.

ProCalc and Nexus 2.11

To run ProCalc with Vicon Nexus 2.11, you must install ProCalc 1.2.1 or later.

Vicon IMUs and Nexus 2.11

To update IMU firmware for Nexus 2.11, use Vicon Capture.U Desktop. For information, see the **Vicon Capture.U User Guide⁴**.

³ <https://www.microsoft.com/en-gb/download/details.aspx?id=30653>

⁴ <https://docs.vicon.com/display/IMU>

Requirements and upgrading

Systems supported for Nexus 2

Before you install Vicon Nexus 2.11, note the following limitations on supported systems:

- Nexus captures data only from Vicon systems (including Vicon Vero and Vicon Vue, Vicon Vantage, Vicon Bonita, Vicon T-Series, and MX+ and MX cameras and units).
- Nexus 2.11 does not support connection to the Reference Video System (Nexus Slave application).

Requirements and upgrading

Upgrading Nexus

This section describes functionality that is dependent upon the version of Vicon Nexus that is being upgraded:

- [Upgrading from Nexus 2.7 and earlier, page 12](#)
- [Upgrading from earlier versions of Nexus 2, page 13](#)
- [Upgrading from Nexus 1.x, page 14](#)

Note

Although data collected in Nexus 2.11 (ie, .c3d files) can be viewed in earlier releases of Nexus, you cannot reprocess this data (ie, .x2d with .xcp files) in releases earlier than 2.7.

Upgrading from Nexus 2.7 and earlier

Improvements to camera calibration that were provided by Nexus 2.7 have the following effects on compatibility of data between releases:

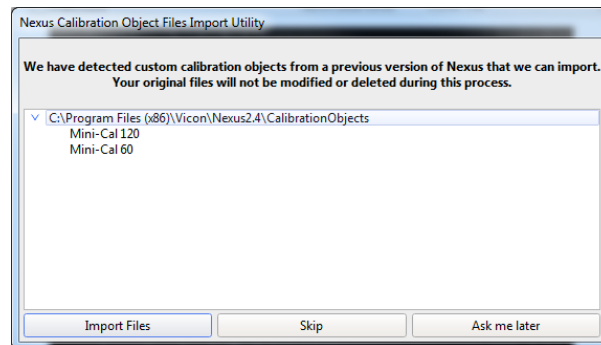
- Data collected in earlier releases of Nexus can be reprocessed in Nexus 2.11 because calibration (.xcp) files that were created in earlier releases are fully compatible with Nexus 2.11. Note that if you load a calibration (.xcp) file that was created in an earlier release of Nexus into Nexus 2.11 and save it, Nexus maintains its compatibility with earlier releases.
- You can use earlier releases of Nexus to view data that was collected in Nexus 2.11 (that is, you can open Nexus 2.11 .c3d files in Nexus 2.7 and earlier).
- However, calibration (.xcp) files that are created in Nexus 2.11 are not backward-compatible, that is, they cannot be read by releases of Nexus earlier than 2.7, and loading will fail if attempted.

Requirements and upgrading

Upgrading from earlier versions of Nexus 2

If you are upgrading from a previous version of Nexus 2, during installation a dialog box gives you the option of adding the **Auto Intelligent Gap Fill** button and/or the **Add to Quick Report** button to your Nexus toolbar. For more information on these features, see Automatically fill gaps in trial data in the *Vicon Nexus User Guide* and Quick Reports in the *Vicon Nexus Reference Guide*. To add the additional button(s) to your toolbar, click **Upgrade Files**.

On first launch, Nexus 2.11 scans the installation directories of earlier versions of Nexus 2 and offers to automatically transfer custom objects that it finds.



If you click **Import Files**, Nexus 2.11 copies custom calibration objects from earlier versions of Nexus (2.0 and later) to the **Public Documents** folder (eg C:\Users\Public\Documents\Vicon\Nexus2.x\CalibrationObjects).

Important

When you create new custom calibration objects, ensure you save them into this folder (not to the Nexus installation folder), so that they are available to future versions of Nexus.

Requirements and upgrading

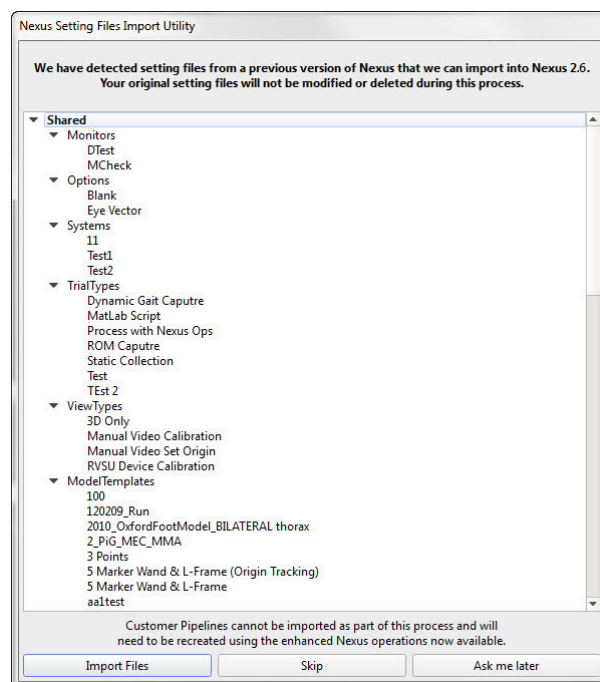
Upgrading from Nexus 1.x

Note

This section applies only to versions of Nexus that are earlier than 2.0.

Nexus 2.11 installs into its own folder, called *Nexus2.11*. If you already have Nexus 1.x installed, it will remain installed alongside the new Nexus installation.

On installation, Nexus 2.11 automatically scans for Nexus 1.x files, displays a list of any older files that it finds, and provides an automated system for importing these into Nexus 2.11.



This process copies all the old files and converts the copies, ensuring that original files are not moved, altered, or destroyed.

Requirements and upgrading



Important

Custom pipelines are not copied from earlier versions of Nexus, so if you want to use your old pipelines, copy them from the following Vicon product installation folder (by default in *C:\Program Files (x86)\Vicon* or *C:\Program Files\Vicon*):

\Nexus\WorkstationPlugins

and paste them to the following location in the Vicon production installation folder (by default in *C:\Program Files (x86)\Vicon* or *C:\Program Files\Vicon*):

\Nexus2.#\LegacyPlugins

They will then be available in the **Legacy** pipeline operations in Nexus 2.11.

For more information on the installation and licensing process, see *Installing and licensing Vicon Nexus*.

Requirements and upgrading

Regulatory information

For Vicon Nexus regulatory details, see Vicon Nexus regulatory information in the Nexus documentation area of the Vicon website (docs.vicon.com⁵).

⁵ <http://docs.vicon.com/>

Requirements and upgrading

Graphics processors for Nexus

Nexus is tested and fully supported with NVIDIA graphics processors. This is the Vicon-recommended graphics processor for PCs that are to run your Vicon system and Nexus software.

Using other graphics processors is not recommended and may affect the performance of the software.

If you experience issues with the software and you have been informed by Vicon Support that this is due to the graphics processor, note these points:

- Issues can occur when you first start the software, or may be due to a driver or Windows update.
- If you previously had a working configuration, consider rolling back the driver version or restoring Windows to a working restore point.
- Some laptops have both a dedicated graphics processor and an integrated processor. You can select the processor for use by an application. You can usually find the option for this by right-clicking the application's shortcut. You can find further general controls in the NVIDIA control panel.

If an NVIDIA processor is not available and you experience a software crash, the following workaround may help. It involves installing an additional file to the Nexus program directory. To do this, you need read/write access to this location and may require the help of an administrator.

1. Download and unzip the file found in the OpenGL section at the bottom of [this page](#)⁶.
2. Rename the file to *opengl32.dll*.
3. With Nexus closed, place the *opengl32.dll* file in the folder that contains the Nexus executable (*Nexus.exe*), for example:
C:\Program Files (x86)\Vicon\Nexus2.11
4. Launch Nexus.
5. Repeat Step 3 for any other instances of Nexus.

This solution mitigates any crashes experienced whilst you're running Nexus, however, performance, such as redraw and general navigation, may be adversely

⁶ <https://www.vicon.com/software/nexus/?section=downloads>

Requirements and upgrading

affected. This solution has been tested on a limited number of Intel graphics cards for Windows 10.

Addressed issues

Addressed issues

- [Issues addressed in Vicon Nexus 2.11, page 20](#)
- [Issues addressed in Vicon ProEclipse 1.4.0, page 21](#)

Addressed issues

Issues addressed in Vicon Nexus 2.11

- An initialization issue with digital devices that could prevent sessions being opened, leading to no data and an inability to set the system origin, no longer occurs.
- TRC files now export marker names in a consistent order.
- The system frame rate no longer adjusts to keep subsampled camera rates above 24 Hz.
- Adding Motekforce Link treadmill devices no longer causes Nexus to stop responding.
- The **Update Skeleton Parameters** operation now correctly affect joint means when **Update Joint Mean & Covariance** is selected.
- Reaction-type outputs from BodyBuilder C3Ds and scripts now store and reload correctly as separate force, moment and point outputs.
- When you set model outputs via the SDK, the presence of NaNs in the data no longer forces all the values to zero.
- An issue accessing missing devices via the SDK, which could lead to CGM2 operations causing Nexus to stop responding no longer occurs.
- Older VSTs that do not fully specify joint pose attributes now load with the correct default values.
- VSTs that incorrectly use duplicate identifiers now produce a warning in the log when loaded.

Addressed issues

Issues addressed in Vicon ProEclipse 1.4.0


- The responsive area for double-clicking to open trials, modify descriptions, etc, has been expanded.
- A spurious error message that was displayed when you navigated into a session containing subjects for the first time no longer occurs.
- Fixed pop-up positioning for search query **Save** dialog box.
- Search scheme **Save As** dialog box can no longer be maximized.
- Filter text box no longer clips some characters.
- Database nodes of ProEclipse 1.0 Subject type are now correctly interpreted as Patient nodes.
- Path descriptor is now right-aligned to ensure the current location is in view.

Known issues

Known issues

The following issues are known to exist in this release.

(For information on CGM2 issues, see Known issues for CGM2 in the *Vicon Nexus Reference Guide*.)

Description	Workaround
The sample rate value for AMTI Force Plates displayed in the System tree doesn't match the Acquisition rate that is selected in the Properties of the AMTI Devices Controller. Except in the case of the initial value, the sample rate that is displayed in the System tree is the last selected Acquisition rate , not the current rate.	In the Properties of the AMTI Devices Controller, temporarily change the value (up or down) for Fz Threshold . The sample rate for the force plates in the System tree changes to match the selected Acquisition rate of the AMTI Devices Controller.
When you select a connected Delsys Trigno EMG digital device and in its Properties, set the Trigger Mode to Triggered and then configure the correct sync port, the Delsys device disconnects, and in the System tree, its icon goes gray. Devices do not reconnect until you set the Trigger Mode back to Not Triggered.	<ol style="list-style-type: none"> 1. In the Nexus System tree, right-click Local Vicon System and then click Resynchronize. 2. Wait for the Delsys device icon(s) to go green and during the next 4–5 seconds (while the device icons are green), press the START Trigger push button  at the top right (below the power indicator) on the Delsys Trigger Module. Delsys devices stay connected and green, synchronized and ready to capture a trial.

Known issues

Description	Workaround
When you're using a Blue Trident sensor to capture movement, and have Global Angle selected, global angles are streamed, but both global angles and 9-axis raw data is captured to the sensor.	None
When you're using Vicon Blue Trident sensors, at high device counts, some sensors begin to drop packets, so some flickering may be observed in the view pane.	When working with a large number of sensors, reduce the Bluetooth stream rate or the number of enabled axes. This issue does not affect the data recorded to the device.
If you drag the Report Options pane to outside of the Nexus Quick Reports window and release the mouse button, then try to drag it back, it does not re-attach inside the Nexus Quick Reports window.	To restore the Report Options pane to its previous docked location, double-click its title bar, then drag it to the required position within the Nexus Quick Reports window.
The Nexus Quick Reports window does not have a Close button.	To close the window, press F4.
A crash can occur if any Noraxon EMG error messages are not dismissed before shutting down Nexus.	Dismiss all Noraxon EMG error messages before exiting Nexus.
When run via the Run Python operation, the Load Trial command in the Python SDK is not able to load a trial.	Run the Python script from IDE or command line.
Some of the latest versions of the FFDSHOW video encoder fail to work properly.	Vicon recommends the use of <code>ffdshow_rev3562_20100907</code> .
Running a legacy VPI operation removes non-standard model outputs.	Use the equivalent native operations.

Known issues

Description	Workaround
AMTI digital device plugins missing required dependencies.	For AMTI Digital Device V1_00.vdd, download Microsoft Visual C++ 2008 SP1 Redistributable Package (x86) from https://www.microsoft.com/en-gb/download/details.aspx?id=5582 For AMTI Digital Device V1_10.vdd, download Microsoft Visual C++ 2010 Redistributable Package (x86) from https://www.microsoft.com/en-gb/download/details.aspx?id=5555
Basler cameras do not work under Windows 10 with Pylon drivers earlier than Pylon5.	If Basler cameras will be connected to Nexus 2.5 or later, update to the Basler Pylon5 SDK and drivers (v5.0.0), which are available from the Vicon website.
Device drivers for Cometa/Wave depend on your Windows version.	For Windows 10 device drivers, contact Cometa.
When the system frame rate is set above 80Hz, if you enable Preview mode, no preview is displayed for Vicon Vantage cameras (the Camera view is blank).	To use Preview mode with Vantage cameras, select a system frame rate below 80Hz.
When you right-click the Devices node on the System Resources pane, Noraxon is not available in the Add Digital Device menu.	When you install the Noraxon plug-in (ViconInterfaceForNoraxon - v1.0.2.1.msi), change the installation path to C:\Users\Public\Documents\Vicon\Nexus2.x\DigitalDevices\
Noraxon Telymyo DTS device halts camera and analog data delivery when Noraxon devices are housed/not charged.	Digital devices now have an Enabled parameter in their Properties pane. To prevent a given manufacturer's plugin from holding up the rest of Nexus, clear Enabled for ALL devices from that manufacturer.
Unable to run legacy Static Gait Model under Japanese Windows. Log entry reads: No parameter file found	The legacy Plug in Gait model does not support international character sets. Instead of using the legacy Plug-in Gait model, use the native Nexus 2 replacement gait model (found under Data Processing pipeline operations: Process Static Plug-in Gait Model and Process Dynamic Plug-in Gait Model).

Known issues

Description	Workaround
Export c3d at the end of a pipeline does not clear the trial and leaves the trial with a dirty flag (*).	The Export C3D operation does not write out the subjects associated with the trial. To remove the dirty flag on a trial, save the entire trial, which saves all associated files (x2d, xcp, etc), using the Save Trial - C3D + VSK operation.
Video capture duration can be limited directly after deletion from SSD storage.	After deleting your video files, wait a few seconds before starting your next capture. This is because some Solid State Drives require a few seconds to recover full Write speed after file deletion.
Spaces in variable names can cause BodyLanguage to fail.	When creating subject parameters for use in BodyLanguage modeling, use underscores instead of spaces.
Nexus can suffer many problems if Eclipse databases are created in locations that are Read-only. These problems range from data silently failing to save to crashes.	NEVER create Eclipse databases in locations that require administrator privileges to read or write.
Starting a capture very soon after a change to the system frame rate, or a resynchronization, can result in erratic capture behavior (failure or dropped frames).	Avoid starting captures soon after changing the hardware setup.
PAL or NTSC camcorders are included in Active Wand camera calibration if the MX system is set to run at the same standard (i.e. PAL or NTSC).	Before performing active wand camera calibration, disable the camcorders.