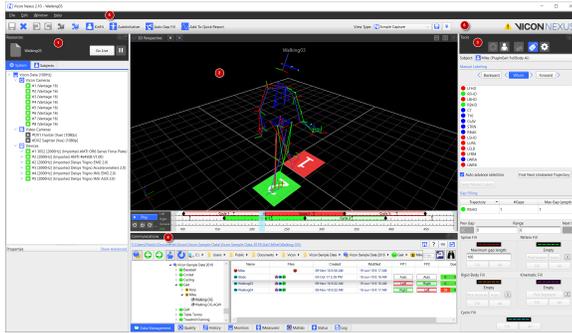


Get to know Vicon Nexus

The Nexus user interface enables you to access the tools you need quickly and easily. Within the primary panes (**Resources**, **View**, **Tools**, and **Communications**), you use the tabs and buttons to open secondary panes containing tools and options for specific parts of the motion capture workflow.



On this page:

- Manage mocap data on the Data Management tab
- Manage system and subjects in the Resources pane
- Display data in the View pane
- Manage the motion capture workflow in the Tools pane
- Play back data with the time bar
- Access menu options from the Nexus menu bar
- Access common commands from the Nexus toolbar
- Manage configurations in Vicon Nexus
- Customize the Vicon Nexus user interface

- 1 Resources pane:** Manage the different components of your Vicon system, and the subjects whose motion is to be captured, on the **System** tab and the **Subjects** tab. See [Manage system and subjects in the Resources pane](#).
- 2 View pane:** Set up the way you want to visualize the capture data from one or more cameras (or supported third-party devices) either live in real time or offline, from a saved file. See [Display data in the View pane](#).
- 3 Tools pane:** Work through the main stages of the motion capture workflow, using the tabs in the Tools pane from left to right: System Preparation, Subject Preparation, Capture, Label/Edit and Pipeline (this last tab enables you to group and run operations that you use throughout the workflow). See [Manage the motion capture workflow in the Tools pane](#).
- 4 Communications pane:** Store and manage all data associated with your motion capture trials (**Data Management** tab: see [Manage mocap data on the Data Management tab](#)), assess trial health (**Quality** tab: see [Review data quality](#)), view stored processing history (**History** tab: see [Review processing history](#)), set up and control monitors for your trials (**Monitor** tab), use Vicon IMUs with Nexus (**IMeasureU** tab: see [Work with IMUs](#)), interact with MATLAB (**Matlab** tab: see [Modeling with MATLAB](#)), view system status information (**Status** tab), and view a log of Nexus system activity since start up (**Log** tab).
- 5 Menu bar:** Access menu options. See [Access menu options from the Nexus menu bar](#).
- 6 Toolbar:** Access frequently used commands and create and select view types. See [Access common commands from the Nexus toolbar](#).

Basic keyboard shortcuts and mouse actions

You can use the mouse to manipulate items and manage the way data is visualized in Nexus, and you can combine standard mouse actions with keyboard keys. The following mouse and keyboard combinations are used most frequently in Nexus.

Navigate in the 3D Perspective view:

- Zoom: Right-click + drag forward or backward
- Orbit: Click + drag
- Translate/Move: Click wheel button (or left-and-right-click) + drag



Tip

To open files in Nexus, in addition to loading files as described in [Play back data with the time bar](#), you can drag and drop Nexus files onto a **3D Perspective** view (or any other view). File types that you can load in this way include: C3D, ENF, VSK/VST, X1D, X2D, and XCP.

Select objects in the view pane:

- Select a single item: Click
- Select multiple consecutive items: SHIFT + click
- Select multiple non-consecutive items: CTRL + click
- Select items within a bounding outline: ALT + click and drag

Display/hide a section within a pane:

- Click the Display Section arrow on the right



- Click the Hide Section arrow on the right



For lists summarizing more Nexus shortcuts and mouse actions, see [Hot keys and shortcuts](#).

For more information on getting to know the Nexus user interface, see:

- [Manage mocap data on the Data Management tab](#)
- [Manage system and subjects in the Resources pane](#)
- [Display data in the View pane](#)
- [Manage the motion capture workflow in the Tools pane](#)
- [Play back data with the time bar](#)
- [Access menu options from the Nexus menu bar](#)
- [Access common commands from the Nexus toolbar](#)
- [Manage configurations in Vicon Nexus](#)
- [Customize the Vicon Nexus user interface](#)

Manage mocap data on the Data Management tab

The **Data Management** tab of the **Communications** window enables you to create a hierarchical structure in which to store and manage all the data associated with your motion capture trials. For information on how to do this, see [Prepare a data storage location](#).



Tip

To toggle the display of the **Data Management** tab, press F2.

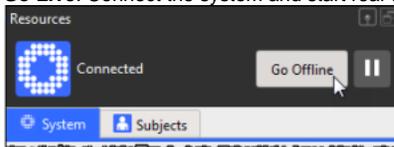
It also enables you to:

- Assess trial health with the tools on the **Quality** tab. For more information, see [Review data quality](#).
- View processing history on the **History** tab. For more information, see [Review processing history](#).
- Set up and control monitors for your trials with the **Monitor** tab.
- Interact with MATLAB.
- View system status information on the **Status** tab.
- View a log of Nexus system activity since start up on the **Log** tab.

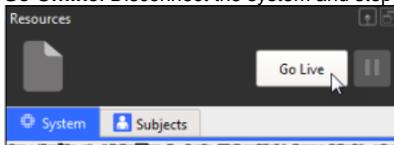
Manage system and subjects in the Resources pane

To manage Nexus system connection and real-time data-streaming, click the system connection buttons at the top of the **Resources** pane:

- **Go Live:** Connect the system and start real-time data streaming. The button's label changes to **Go Offline**.

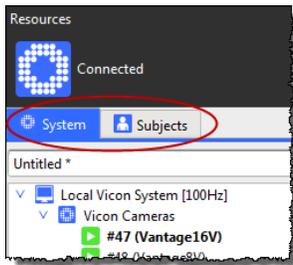


- **Go Offline:** Disconnect the system and stop real-time data streaming. The button's label changes to **Go Live**.



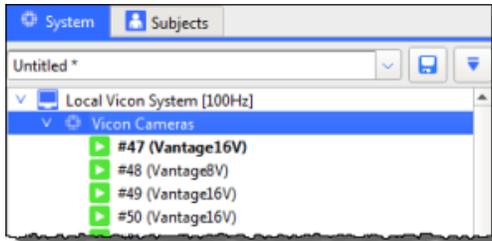
- **Pause:** Pause real-time data streaming. When you click the Pause button while the system is in Live mode, the button turns blue and a pause symbol  is displayed in the view pane. When the system is in Offline mode, the button is unavailable.

At the top of the **Resources** pane, click the tab for the resources you want to manage:



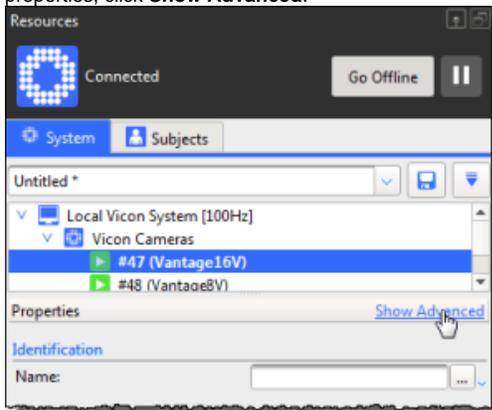
- **System:** View and configure Vicon system components
- **Subjects:** Load and manage files for mocap subjects

In the **System Resources** tree or **Subjects Resources** tree, select the item(s) you want to configure.



Depending on whether you are in Live mode, you can then:

- Right-click a node to display a context (shortcut) menu of commands that can be applied to that item, if one exists.
- In the **Properties** pane below the **Resources** tree, view the settings for the item(s) selected in the tree. To view all of the available properties, click **Show Advanced**.



For more information, see [Set properties in Vicon Nexus](#).

Set properties in Vicon Nexus

You can configure certain aspects of the Nexus system, such as system components and motion capture subjects, by configuring settings in the corresponding **Properties** section of the user interface.

Required properties for which you must specify a value are indicated in the Nexus user interface with a shaded background.

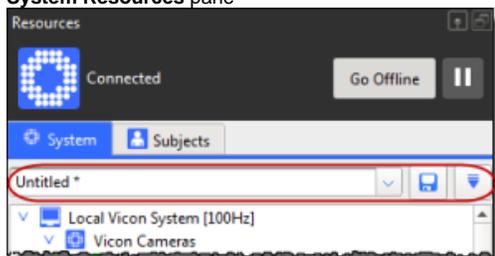
Some properties settings automatically persist, so Nexus remembers them in subsequent sessions. You must explicitly save other settings using the relevant configuration management controls for that area of the Nexus window.

To set properties in Nexus:

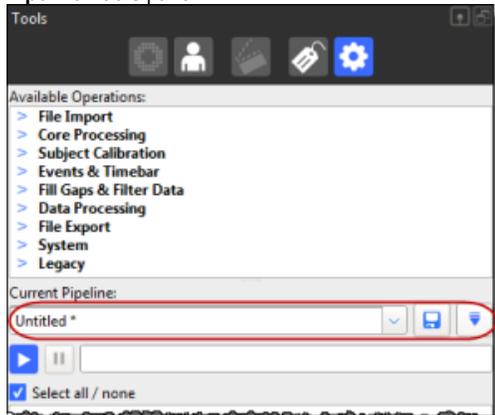
1. In the Nexus window, open the pane or dialog box containing the properties whose settings you wish to configure. For example:
 - System components - **System Resources** pane
 - Motion-capture subjects - **Subjects Resources** pane
 - Camera calibration process - **System Preparation Tools** pane
 - Subject calibration process - **Subject Preparation Tools** pane
 - Data processing operations - **Pipeline Tools** pane
 - Monitor and event actions - **Monitors** tab in the **Communications** pane
 - Data visualization - **Options** dialog box
2. To view all of the available properties, click the **Show Advanced** link. To show only the basic properties, click the **Hide Advanced** link.
3. View or change the setting for the desired properties using its entry field or control.

4. When you are working in the following areas of the Nexus window, you can save any changes you have made to the settings, using the configuration management controls (indicated in the following images). Your settings are saved to a configuration file, so that you can re-use them later.

- **System Resources** pane



- **Pipeline Tools** pane



- **Monitors** tab in the **Communications** pane



- **Options** dialog box (press F7 to display)



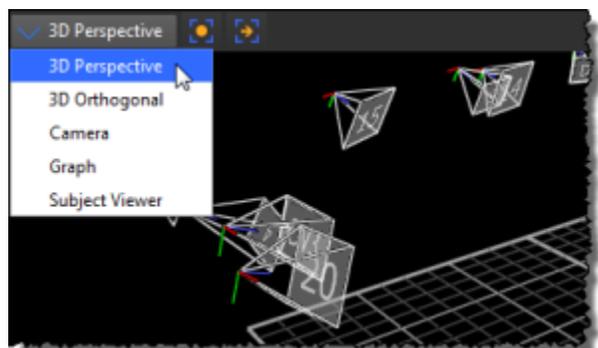
- **Nexus toolbar** (working with the layout of the view panes)



For more information on configuration files, see [Manage configurations in Vicon Nexus](#).

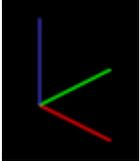
Display data in the View pane

At the left of the View pane toolbar, click the drop-down list and select one of the available views:



- **3D Perspective:** Display 3D reconstructions of Vicon camera data.

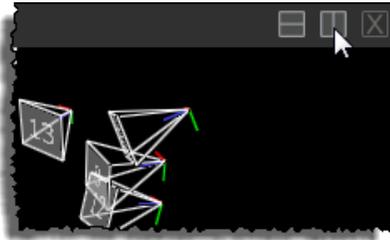
- **3D Orthogonal:** Orthogonal views of 3D data: -Z, +Z, +X, -X, +Y, or -Y



RGB = XYZ

- **Camera:** Display 2D optical data from Vicon cameras or video streams from connected video cameras.
- **Graph:** Display variables (model outputs), or system components such as force plate or EMG activity.
- **Subject Viewer:** Display the base (default) pose for the labeling skeleton template (VST) of the currently selected subject. This is useful when you are calibrating and manually labeling a labeling skeleton, which are explained in [Prepare a subject](#).

At the right of the View pane toolbar, click the buttons to specify the number and arrangement of views displayed:



- Horizontal
- Vertical
- Close

Depending on the view selected, additional lists and buttons are available to manage the display options.



Tip

To display multiple **Camera** views, in the **System Resources** tree, SHIFT+click to select multiple cameras and in the View workspace, select **Camera** view.

Manage the motion capture workflow in the Tools pane

At the top of the **Tools** pane, click the buttons for tools relating to the stage in the workflow that you want to display. The buttons are displayed in the order of a typical Nexus workflow (from left to right) and are enabled appropriately, depending on whether you are in Live or Offline mode (the following image is in Live mode).



- **System Preparation:** Prepare your Vicon system for motion capture.
- **Subject Preparation:** Prepare subjects whose motion is to be captured.
- **Capture:** Collect motion data.
- **Label/Edit:** Label and fill any gaps in trial data.
- **Pipeline:** Create and manage sequences of operations to process trials.

To find out more about the motion capture workflow, see [Vicon Nexus motion capture workflow](#).

Play back data with the time bar

To explore the time bar:

1. Ensure a **3D Perspective** view is displayed (see [Display data in the View pane](#)).
2. On the **Data Management** tab at the bottom of the Nexus window, navigate to an existing database. You can do this by expanding the displayed hierarchy and using the **Go forward to the next node**, **Go back to the last node**, and **Move up one folder level** buttons .
3. In the **Name** column, double-click the trial that you want to load. Nexus opens the trial.

- On the time bar, click the **Play** button or drag the current time indicator (blue vertical line) to play back offline capture data. To crop a trial (restrict playback to a range of frames), you can drag the Start and End Range indicators (the blue triangles at the top of the timeline) along the time bar.



- To hide or display the **Data Management** window, double-click the **Data Management** tab at the bottom of the Nexus window.



Tip

In addition to using the time bar to view and navigate trials, you can also use it to:

- View data quality as a heat map. For more information, see [Review trial data using the time bar](#).
- Create and manage events (for example, a foot striking a force plate, or a joint attaining a specified angle, etc). For more information, see [Add events to trials](#).

Access menu options from the Nexus menu bar

The Nexus menu bar enables you to access common commands.



Access common commands from the Nexus toolbar

Access frequently used commands from the Nexus motion capture workflow from the Nexus toolbar.



The Nexus toolbar contains buttons that enable you to save the current trial, close the current trial, and undo and redo actions. In addition it contains the following controls:

- Reconstruct** Runs the **Reconstruct** pipeline defined in the **Pipeline Tools** pane. (Reconstruction is the process by which Nexus calculates the position of markers in three-dimensional space and links these points frame-by-frame into a trajectory.) For examples of using this pipeline, see [Calibrate a labeling skeleton](#).
- Reconstruct and Label** Runs the **Reconstruct and Label** pipeline defined in the **Pipeline Tools** pane. (The Label process is where labels defined in the labeling skeleton template for the subject are applied, either manually or automatically, to a point in the trajectory of a marker.) Normally used when processing trials. For an example of using this pipeline, see [Reconstruct and label movement trials](#).
- KinFit** Runs the **Kinematic Fit** pipeline defined in the **Pipeline Tools** pane. This pipeline is often used before running a **Fill Gaps - Kinematic** operation for filling gaps in trajectories, and for visualizing or graphing segment- or joint-based data in realtime.
- Autolocalize** Runs the **Auto Initialize Labeling** pipeline defined in the **Pipeline Tools** pane. Often used as part of calibrating a labeling skeleton For an example of using this pipeline, see [Calibrate a labeling skeleton](#).
- Auto Gap Fill** Runs the **Auto Intelligent Gap Fill** pipeline defined in the **Pipeline Tools** pane. This enables you to quickly fill gaps in your trial, without having to choose which fill method is best for each gap. For good results, you must configure the relevant pipeline operations for your particular trials. For information on using this command, see [Automatically fill gaps in trial data](#).
- Add To Quick Report** Adds the current trial to a Quick Report. For more information, see [Quick Reports](#) in the *Vicon Nexus Reference Guide*.
- Any user-customized buttons** If required, you can create your own additional buttons and configure them to run a specified pipeline or load a previously created view configuration. You can create or change toolbar buttons in the **Customize Toolbar** dialog box.
- View Type** list Lists any saved view types. The adjacent configuration buttons enable you to create and save custom view types.

Clicking a button on the toolbar executes the defined action for the button. A button is dimmed if it is not available, for example, if it cannot be run at that stage of the workflow or if a customized button has been deleted or renamed.



Tip

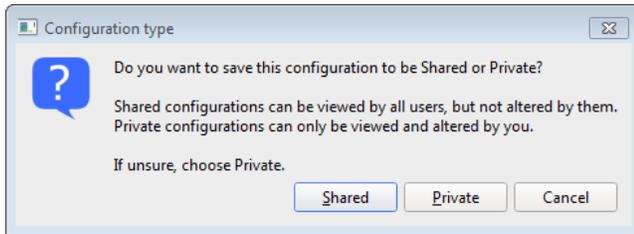
To display a tooltip that explains why a button is unavailable, hover the mouse pointer over the button.

Manage configurations in Vicon Nexus

You can determine how Nexus looks and behaves by creating and editing configurations in the configuration management controls in the Nexus window. To view and select any default configurations that were installed with Nexus, click the dropdown list in the relevant configuration management controls, for example, for View Types:



You can create different configurations to suit different types of motion capture applications and then select the appropriate configuration when required. You can also save configurations for use by multiple users (Shared) or for a specific user (Private), to suit your organization:



- **Shared** These configurations can be viewed by all users; they can be changed only by the user who was logged on when the file was first created and saved. Shared configuration files are stored in the appropriate folder, by default under:
C:\Users\Public\Documents\Vicon\Nexus2.x\Configurations
- **Private** These configurations can be viewed and changed only by the user who was logged on when the file was first created and saved. Private files are stored in the appropriate folder under the logged-in user's Application Data files folder, by default under:
C:\Users\<UserName>\AppData\Roaming\Vicon\Nexus2.x\Configurations\
- **System** These configurations are the default configurations that are installed with Nexus and are stored in the Nexus configurations folder, by default:
C:\Program Files (x86)\Vicon\Nexus2.#\Configurations

For more information, see [Recognize Shared, Private, and System files](#).



Important

The default Nexus toolbar is stored in the *Standard.toolbar* configuration file in the **Shared** Nexus configuration folder *Toolbars*. If you add, delete, or reposition buttons on the Nexus toolbar using the **Customize Toolbar** dialog box, these customizations are stored in your **Private** configuration folder.

To manage configurations in Nexus:

1. In the Nexus window, open the pane or dialog box containing the type of Nexus configuration file you want to manage:

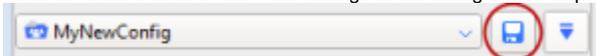
Nexus UI area	Configuration type	Configurations folder/file
Capture Tools pane	Motion capture settings	TrialTypes*.TrialTypes
Biomechanics Workflow area of Communications pane	Biomechanics workflow	CaptureWorkflows*.CaptureWorkflow
Sounds dialog box	Sounds settings	AudioSchemes*.AudioScheme
Monitors tab in Communications pane	Event monitors and actions	Monitors*.Monitors
Options dialog box	Data view options	Options*.Options
Pipeline Tools pane	Automated processing operations	Pipelines*.Pipeline
System Resources pane	System settings	Systems*.System
Toolbar	Toolbar buttons	Toolbars*.Toolbar (see Important note above)
View pane	View options and layouts	ViewTypes*.ViewType

2. Depending on whether you want to create a new configuration or change the current configuration either:
 - Leave the currently loaded configuration file. (If no configuration file has been created yet, **Untitled*** is displayed and no other options are available.)
 - or
 - Select another configuration file from the dropdown list. If you have made changes to the current configuration file, Nexus prompts you to save these before changing the configuration file.
3. In other areas of the Nexus pane or dialog box, make any desired changes to settings, such as those in a **Properties** section.
4. Click the configuration menu button  and select the required command from the displayed list:

- **New:** Create a new configuration in which to save the current settings. The name **Untitled*** is displayed in the **Choose configuration** list.
- **Save As:** In the **Save As** dialog box, enter a name to overwrite the default new configuration file name **Untitled*** or to create a new system configuration file in which to save a copy of the current configuration file and click OK.

Additional options include:

- **Rename:** In the **Rename** dialog box, enter a new name for the currently loaded configuration file and click OK.
 - **Delete:** At the **Delete** prompt, click Yes to delete the current file displayed in the configuration dropdown list.
 - **Mark Read-Only:** Select to protect the current configuration file from further changes.
 - **Set Defaults:** Returns values to their default settings.
 - **Import:** Enables you to select and import a configuration file. This is useful when you want to copy a configuration file from another machine.
 - **Reload:** Reload or delete an automatically saved configuration file. You can select from the list of timestamped files or, if required, delete all the saved configurations.
 - **Refresh List:** Re-display the contents of the configuration dropdown list. This is useful if you copy a file into one of the **Configurations** sub-folders, enabling you to update the options displayed in the relevant list, without having to re-start Nexus.
5. In the **Configuration type** dialog box, select the user permissions for the configuration: **Shared** or **Private**. The new file name is displayed in the configuration dropdown list.
 6. Click the Save button to store the settings in the configuration displayed in the configuration dropdown list.



For more information, see [Set properties in Vicon Nexus](#).

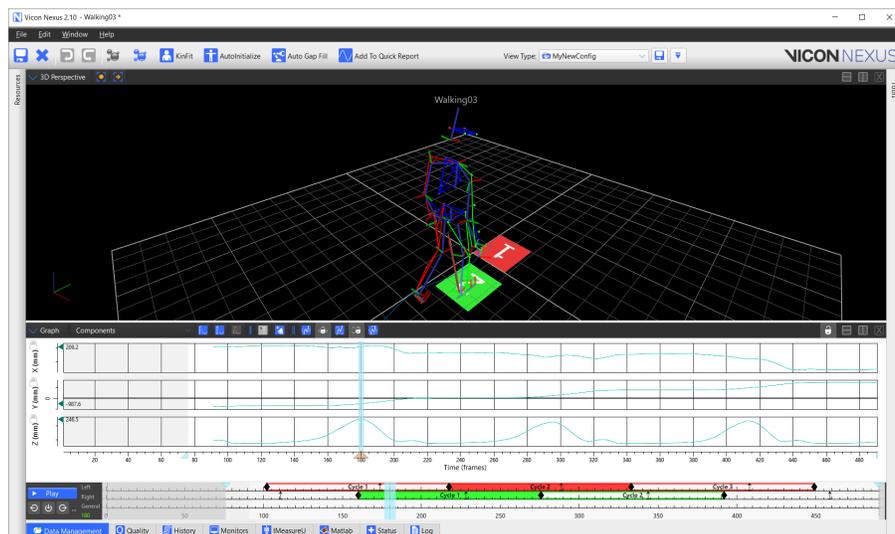
Recognize Shared, Private, and System files

When pipelines, view types, monitors, labeling skeleton templates, and configurations are displayed in Nexus (ie, listed in menus, etc), you can immediately recognize whether they are Private, Shared, or System files:

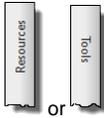
Icon	File type	Description
	Shared	Can be viewed by multiple users; can be changed only by the user who was logged on when the file was first created and saved. Shared files are stored in subfolders in: C:\Users\Public\Documents\Vicon\Nexus2.x
	Private	Can be viewed and changed only by the user who was logged on when the file was first created and saved. Private files are stored in subfolders in: C:\Users\<usname>\AppData\Roaming\Vicon\Nexus2.x
	System	Cannot be changed (Read-Only) and are upgraded when the next version of Nexus is installed. Stored in subfolders in the Nexus installation folder, whose default location is: C:\Program Files (x86)\Vicon\Nexus2.# or C:\Program Files\Vicon\Nexus2.#

Customize the Vicon Nexus user interface

In addition to the usual resize and close window options, you can slide the **Resources** and **Tools** panes to either side of the Vicon Nexus window and or minimize the **Communications** pane, to give you a larger workspace area.



Requirement	Action	Button

To hide the Resources and/or Tools panes	At the top of the Resources or Tools pane, click the UnPin button.	
To hide the Communications pane	Double-click a tab within the Communications pane; or To hide the pane whenever you load a trial, on the Window menu, select the Close Communications Pane on Trial Load option.	
To reveal the Resources and /or Tools panes	Click the text at the top of the tab at the side of the Nexus window.	
To reveal the Communications pane	Double-click a tab within the Communications pane; or To make the pane visible whenever you load a trial, on the Window menu, clear the Close Communications Pane on Trial Load option.	
To return a pane to being locked into place	At the top of the pane, click the Pin button.	
To undock (float) and dock a pane	At the top of the (pinned) pane, click the Undock or Dock button.	

Customize a View pane

The View pane cannot be undocked, repositioned, or resized in the Nexus window. However, you can open a separate floating view pane by selecting the **New floating workspace** command from the **Window** menu. This floating workspace can be repositioned and resized.

The width of the View pane is affected by resizing panes to the left and/or right of it. The height of the View pane is affected by resizing the panes below it.