WHITEPAPER

Dragging Tools: More Transparency and Speed for Drag & Drop Actions

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Contents

Introduction

This whitepaper introduces the new tools coming with VARCHART XGantt 5.0 that support and improve drag & drop actions.

Gantt charts enable the planner to easily re-plan orders, tasks or resources by shifting them back and forth. However, positioning a node at a certain point of the timeline or directly after another node can be tricky because a certain spot in the Gantt has to be exactly hit by mouse.

Besides, in many Gantt charts, multi-level groups are used. In large plans dragging a node from one group or its subgroup to another one by mouse can at times get a bit inconvenient and confusing if the target group is located quite far away.

Both problems can now easily be solved with the new tools of VARCHART XGantt.

Snap Tools: Support for horizontal dragging

Many dragging applications or design tools already offer the so-called snap-grids as help for exactly positioning objects by means of a predefined grid, usually pixel-spaced. VARCHART XGantt now offers a similar functionality. The moved objects are not adjusted to a fixed grid but to other objects in the graphic, these objects thus defining a snap grid with irregular distances.

Objects as snap targets

Nodes (or their layers), date lines, line grids and calendar grids allow to define so-called snap targets. That means that these objects define certain places at themselves serving as targets of a snap action of other objects. When moving a node horizontally or modifying the size of a node or a layer, start or end date of this node or layer will be chronologically adjusted to the defined snap tools of the other objects. The start or end date will move towards the snap target within 5 pixels next to it thus taking over the exact date of the target.

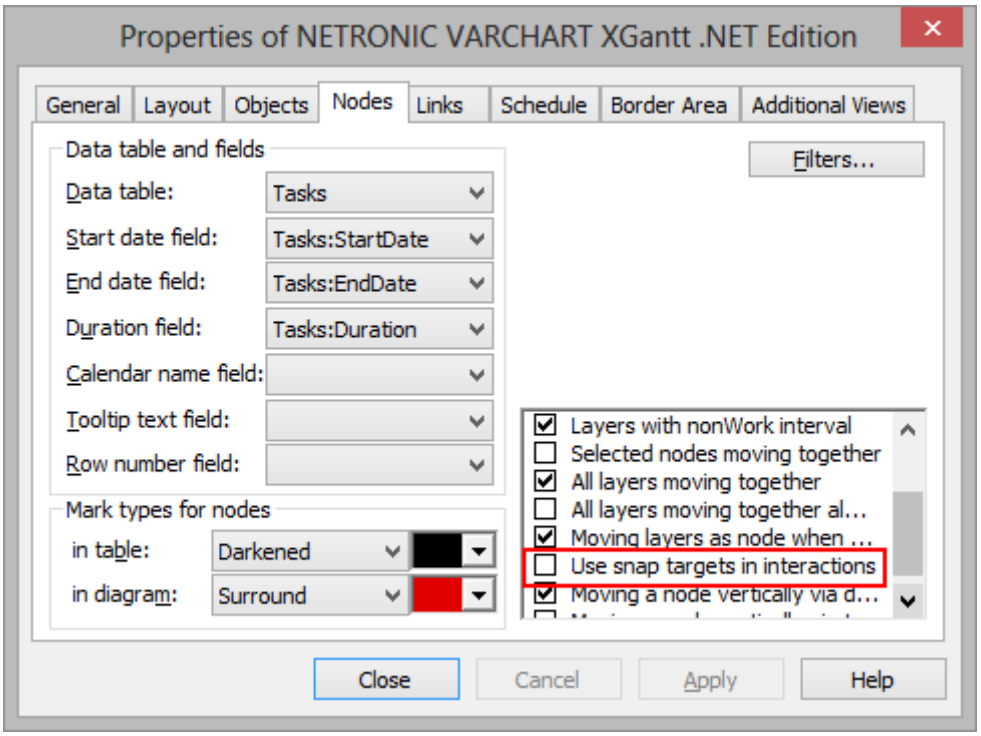
Individual behavior for each node layout

Special behaviors have been defined for each node layout (ungrouped, grouped, hierarchical arrangement; given that the according objects define snap tools):

- All node layouts: the layer-to-be-moved is adjusted to date lines, line grids and calendar grids.
- Ungrouped layout: The layer-to-be moved is adjusted to the layers of all nodes.
- Grouped layout: The layer-to-be-moved is adjusted to the layers of the nodes of one group (without subgroups). If the group is changed during the interaction, the layer will be adjusted to the objects of the new group.
- Hierarchical arrangement: The-layer-to-be-moved will be adjusted to the layers of the nodes of the same branch (with sub-branches). If the branch is changed during the interaction, the layer will be adjusted to the objects of the new branch.

New properties and API calls

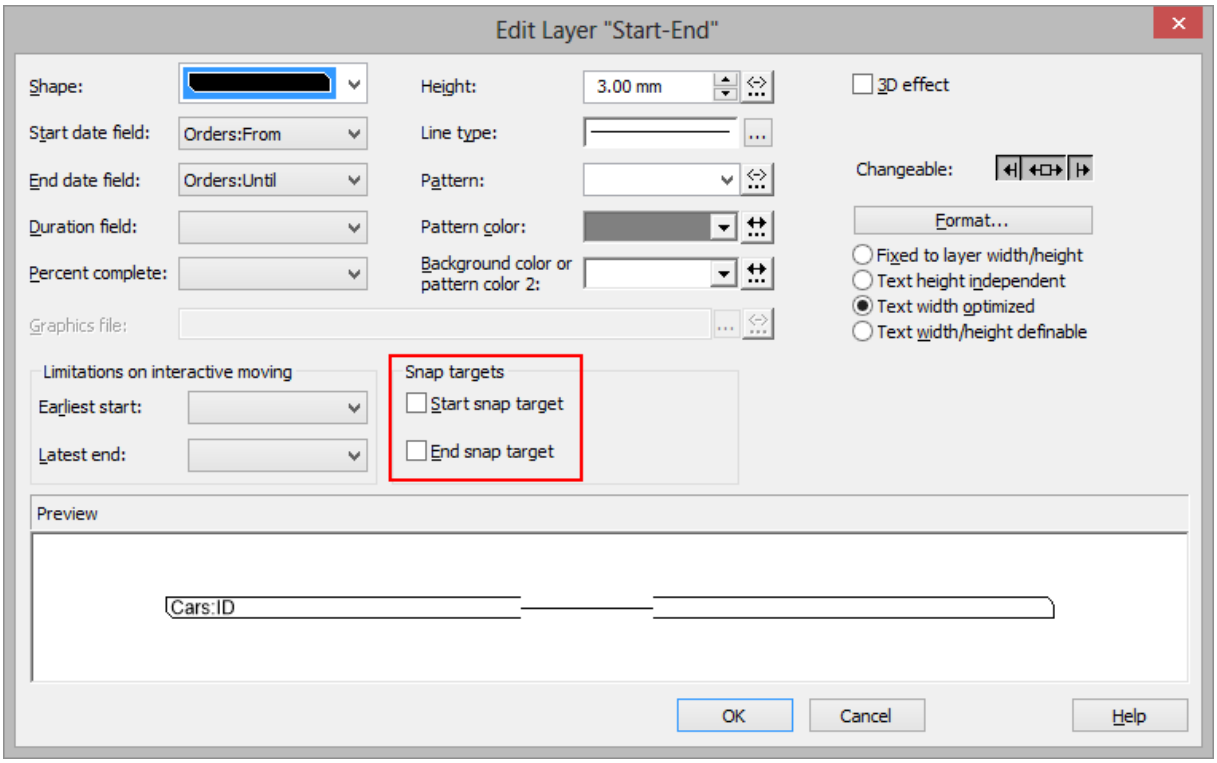
For the snap tools to take effect, they have to be enabled on the **Nodes** property page.



API call: *vcGantt.UseSnapTargetsInInteractions = true/false*

Snap target LAYER

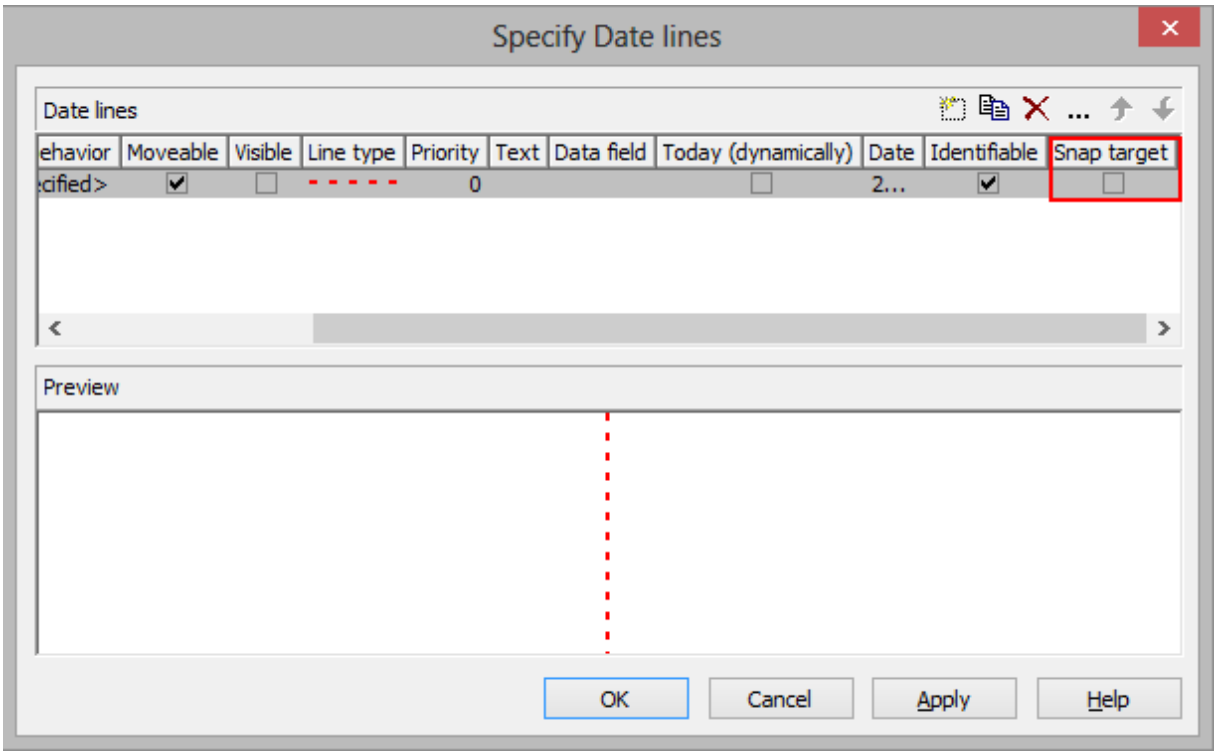
Layers can be defined as snap targets in the **Edit Layer** dialog. Ticking the checkboxes **Start snap target** and **End snap target** sets the layer's position (i.e. its dates) as snap targets for dragging a node or layer.



API calls: *VcLayer.StartSnapTarget = true/false*
VcLayer.EndSnapTarget = true/false

Snap target DATE LINE

Date lines can be defined as snap targets in the **Specify Date Lines** dialog. Ticking the checkbox **Snap target** sets the date line's position (i.e. its dates) as snap target for dragging a node or layer.



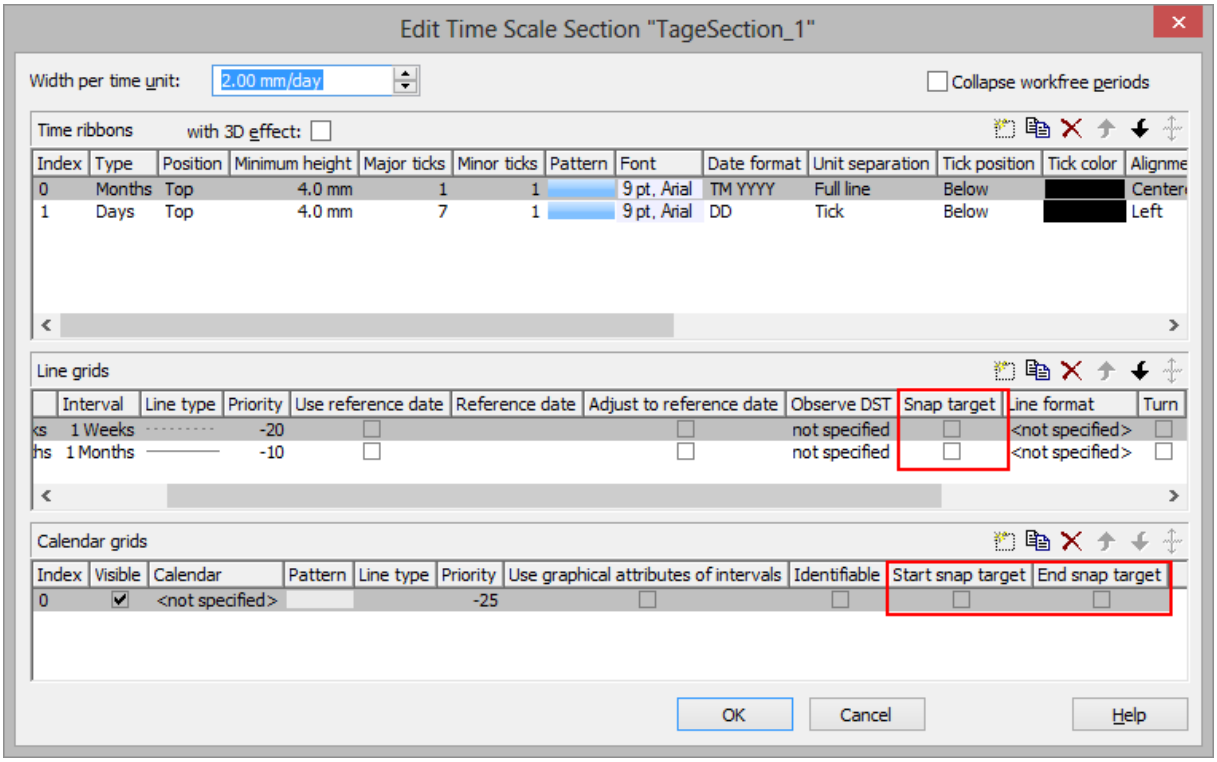
API call: *VcDateLine.SnapTarget = true/false*

Snap target LINE GRIDS/CALENDAR GRIDS

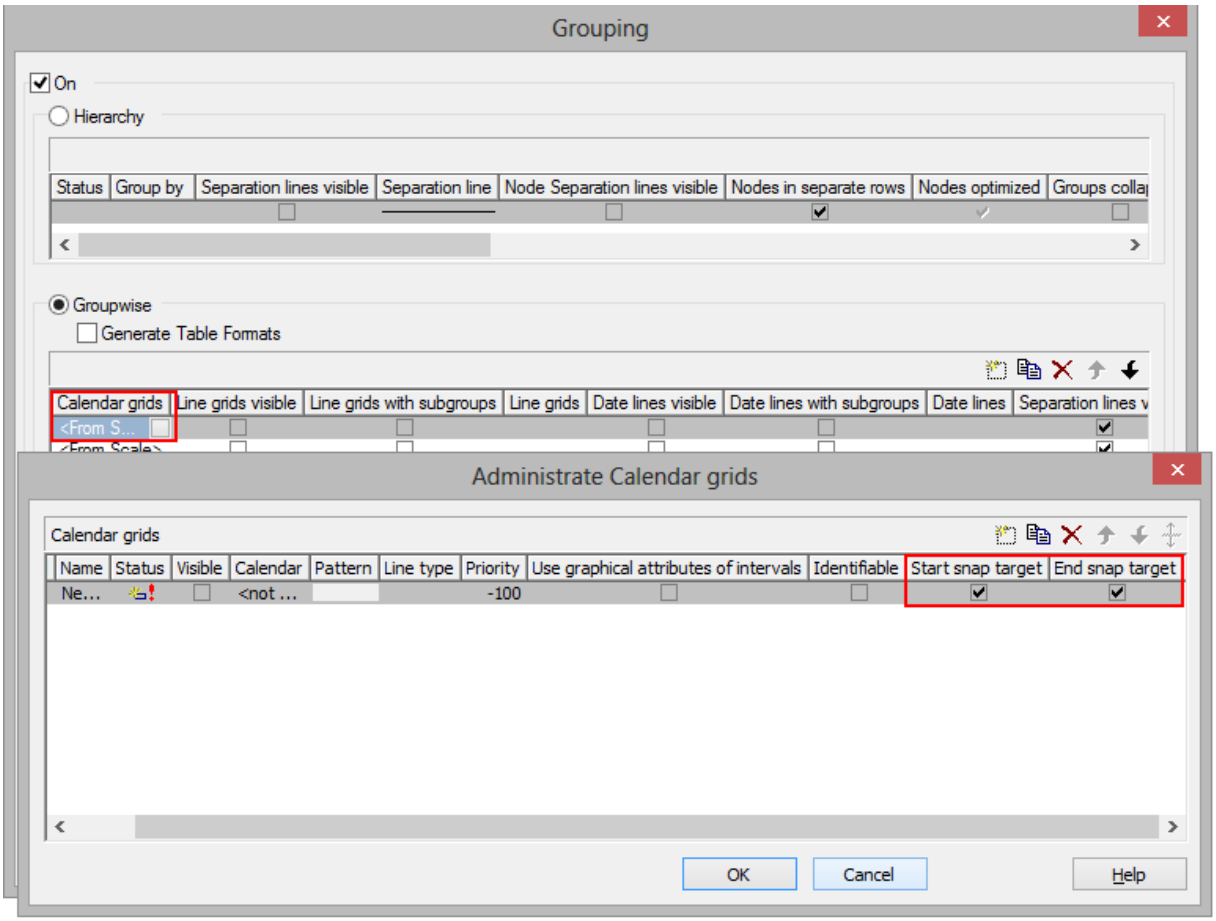
Line grids and calendar grids can be defined as snap targets at two different places:

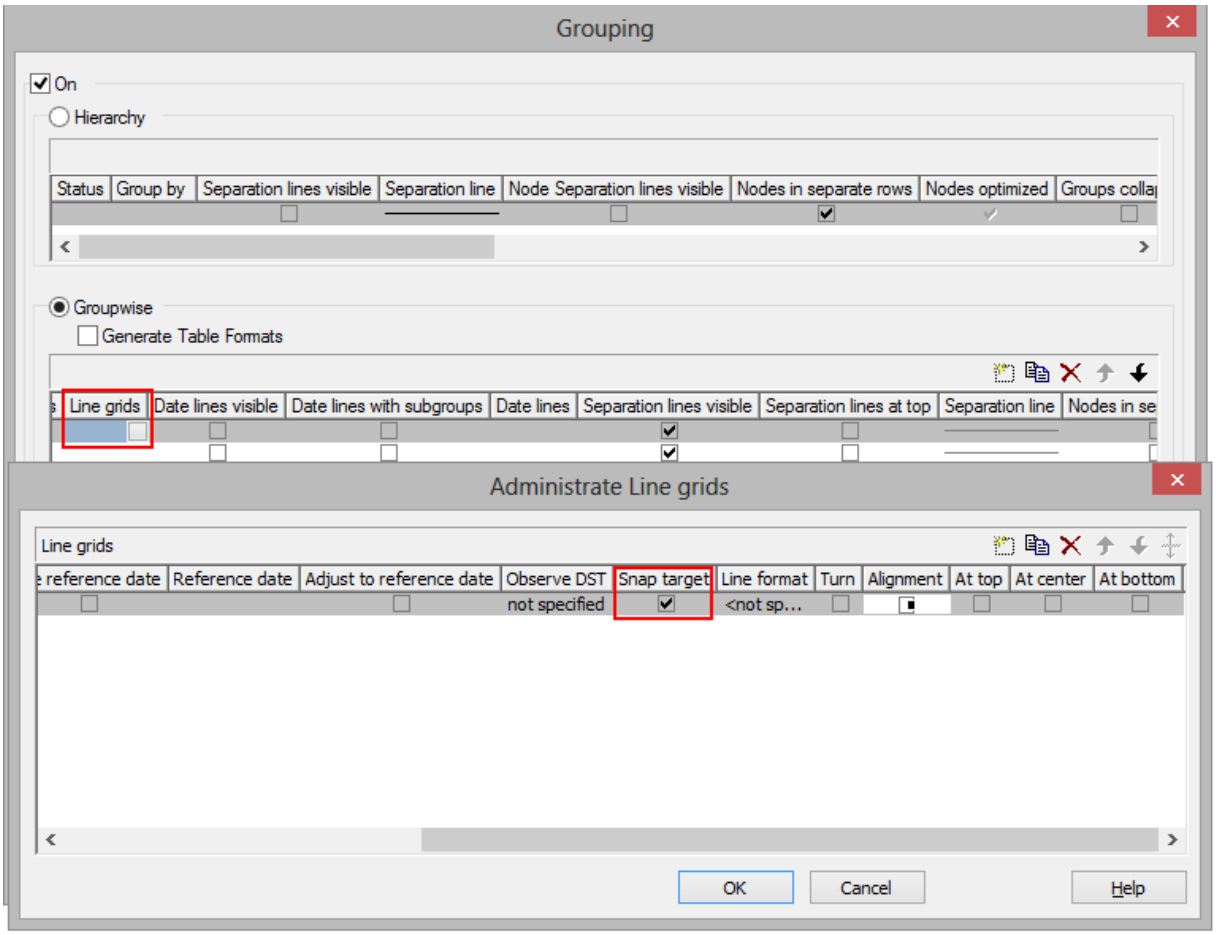
- In the **Edit time scale section** for not individual objects
- Below the **Grouping** dialog for individual, group- or node-related objects.

Ticking the according checkboxes in the **Edit time scale section** dialog sets the related objects' position (i.e. their dates) as snap targets for dragging a node or layer.



In the **Grouping** dialog you can access the dialogs **Administrate Calendar Grids** and **Administrate Line Grids**, where ticking the according checkboxes sets the related objects' position (i.e. their dates) as snap targets for dragging a node or layer.





API calls: *VcDateLineGrid.SnapTarget = true/false*
VcCalendarGrid.StartSnapTarget = true/false
VcCalendarGrid.StartSnapTarget = true/false

Please note: Since it makes no sense to mix the snap targets of all objects (i.e. the objects from several ribbons) when moving several nodes, snap targets of individual objects are only taken into account if a single node is moved. A separate snapping of a node to the snap target of the ribbon it is situated in is not provided for.

Moving a node by arrow keys

Nodes can not only be moved interactively by mouse but also by the mouse keys on the keyboard. To do this, the following setting is needed:

vcGantt1.ArrowKeyMode = VcArrowKeyMode.vcResizeOrMoveNode

The value *vcNodeJumpToSnapTarget* was added to the enumeration *VcArrowKeyMode.* If this value is set, pressing CTRL + left or right arrow key causes a

marked node to snap to the next or the last snap target, this being s a cyclical operation: If the end is reached, everything starts at the beginning again.

Auto collapse/expand: Support for vertical dragging

Everybody has already moved files in the Windows explorer and knows the automatical expanding of the folder structure: You move the file onto a collapsed folder, pause the mouse shortly, the folder is opened and you can move further until you have reached the desired folder.

Behavior up to now

Up to now, when moving a node vertically to another group in VARCHART XGantt, searching for the target group could take quite a bit of time, if the chart had many nodes in many expanded groups. In most cases, automatic vertical scrolling was needed to reach the target group, this sometimes being tedious and therefore uncomfortable.

New: Easy orientation and fast vertical dragging

The new functionality considerably shortens the search for the target group. The combination and setting options being quite manifold, we'd like to confine ourselves to introducing one possible configuration here.

Example: Collapse all groups except the current one

One possible configuration of VARCHART XGantt might be that when moving a node, all groups but the one having just been touched get collapsed. The status of this group will be maintained, in case the node is to be moved within the same group only. By collapsing the other groups, the vertical extension of the plan is reduced to a fraction of its original size, thus allowing to show considerably more groups than before and ideally, the target group will be already visible by now. If not, VARCHART XGantt can automatically scroll over the collapsed groups so that the target group can be found much faster than before. On reaching the target group, one pauses a moment, the target group is expanded and the movement can go on. The group having been touched before gets collapsed so that the plan size remains minimized. The dragging goes on, perhaps to another group that is expanded, the group having been expanded

before being collapsed again etc. until reaching the target. On releasing the node in the target group, the interaction is finished and, if desired, VARCHART XGantt can restore the original condition, scrolling to the new position of the moved node.

Many combination options

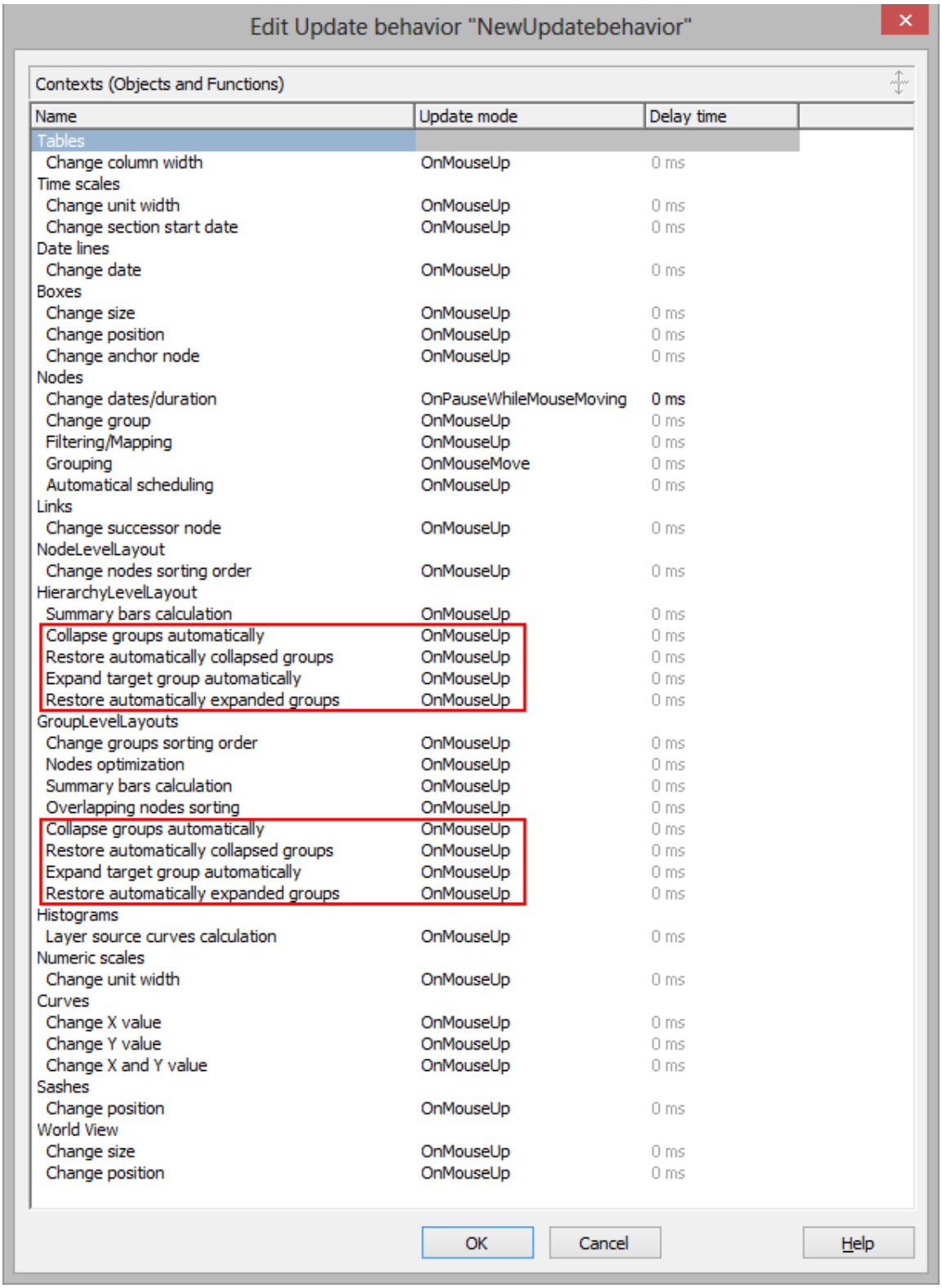
This was only one example of the new functionality. There are further options available for:

- Automatic collapsing of groups
- Automatic expanding of groups
- Automatic restoring of automatically collapsed or expanded groups, an update behavior allowing for a precise temporal control of this option.

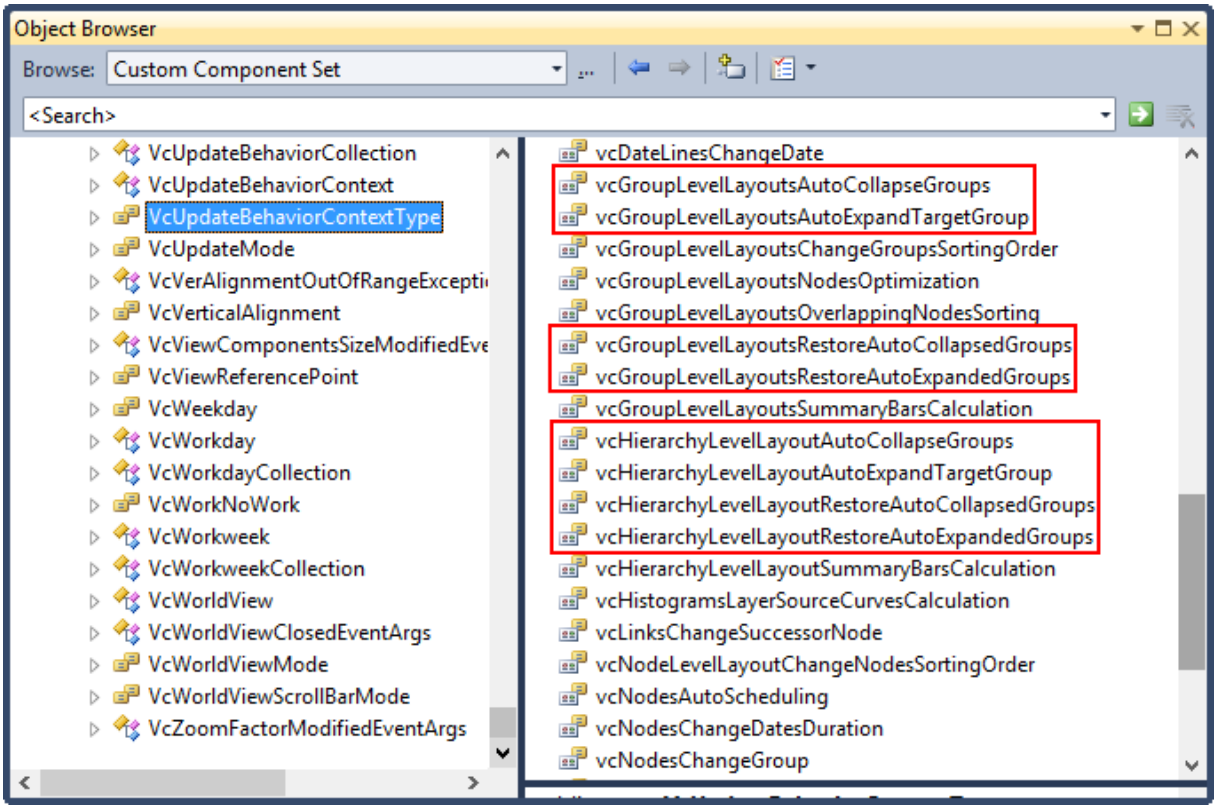
These settings can be made per grouping level and also for the hierarchical arrangement of the nodes, allowing for very detailed dragging operations.

New properties and API calls

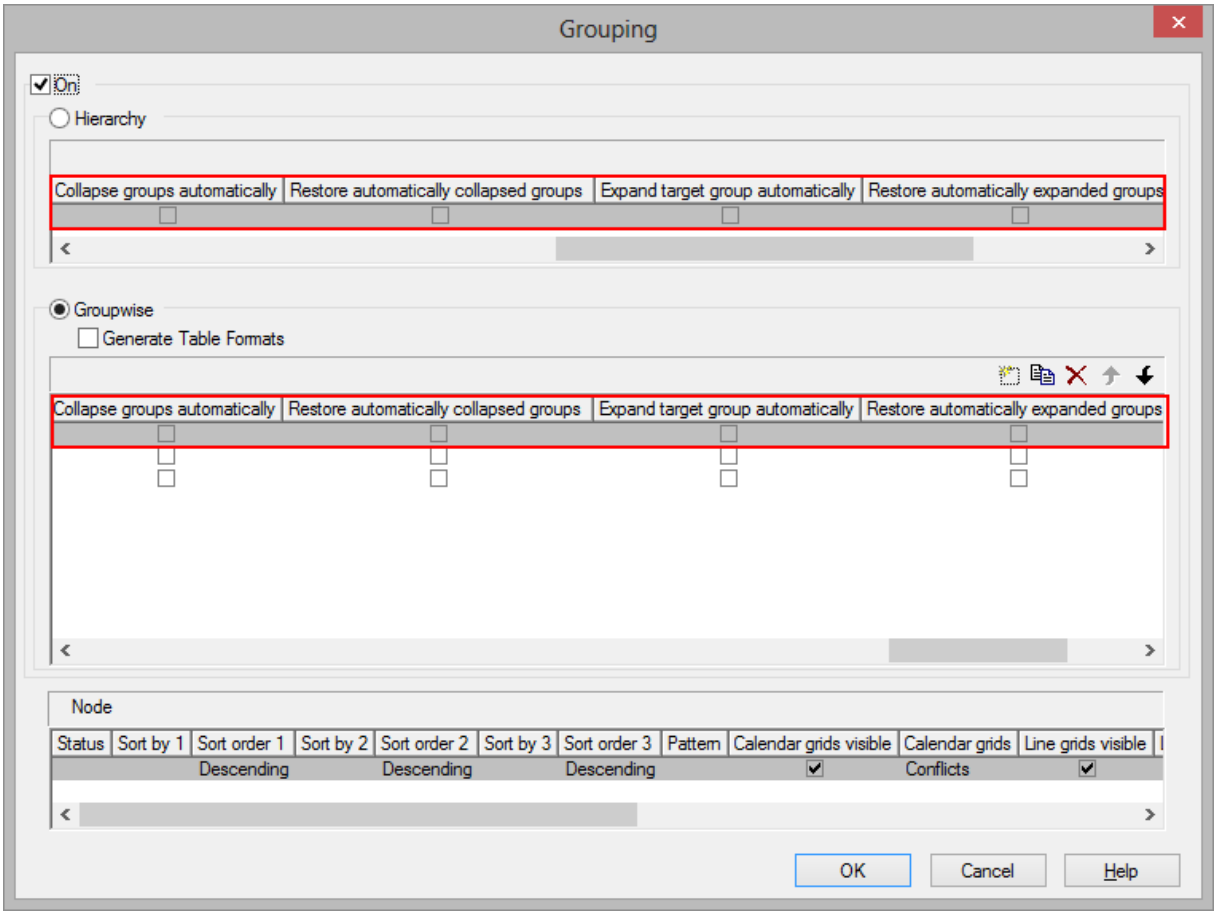
The **Edit Update behavior** dialog offers eight related contexts, four each in **Grouping Line Layouts** and **Hierarchy Layout**:



The enumeration *VcUpdateBehaviorContextType* has also got 8 new values so that the new contexts can also be set at runtime:



The functionalities that are activated by this contexts by way of timer can be enabled or disabled in the **Grouping** dialog.



API calls:

VcGroupLevelLayout.AutoCollapseGroups	=	*true/false*
VcGroupLevelLayout.AutoExpandTargetGroup	=	*true/false*
VcGroupLevelLayout.RestoreAutoCollapsedGroups	=	*true/false*
VcGroupLevelLayout.RestoreAutoExpandedGroups	=	*true/false*
VcHierarchyLevelLayout.AutoCollapseGroups	=	*true/false*
VcHierarchyLevelLayout.AutoExpandTargetGroup	=	*true/false*
VcHierarchyLevelLayout.RestoreAutoCollapsedGroups	=	*true/false*
VcHierarchyLevelLayout.RestoreAutoExpandedGroups	=	*true/false*

Conclusion

The new functionalities of VARCHART XGantt 5.0, the snap tool for horizontal dragging and the automatical collapsing and expanding behavior during vertical dragging, not only provide the planner with considerably enhanced orientation but also accelerate the dragging of nodes significantly.

Further Resources

The ways of applying the new functionalities are as manifold as is each Gantt application. Since this whitepaper can't deal with every possible option, further information is provided as shown below:

- Video showing three possible collapse/expand behaviors of target and subgroups in a Gantt chart.
- Video with 8 variatons of the snap tool.
- Blog „Vertical movement of nodes in Gantt charts with multi-level groups.
- Blog „Position nodes in a Gantt chart with a snap"

Free trial version: Empower your planning application

Get a free trial of VARCHART XGantt and receive an impression of the control's capabilities.