# Structure.Gantt Documentation

Structure.Gantt 2.4 Documentation

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Welcome to Structure.Gantt documentation.

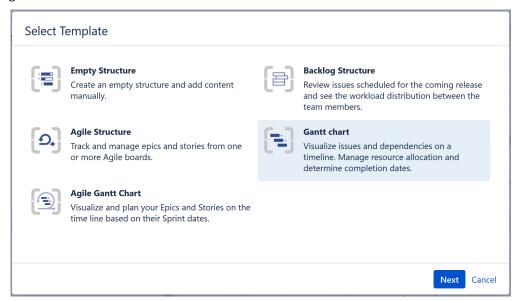
## 1 Quick Start Guide

Structure. Gantt is a Structure extension, which brings planning and resource management features to structures. It adds the power of familiar Gantt charts to Jira, so you can instantly visualize issue dependencies and timelines, and understand resource allocations on a global scale.

## 1.1 Getting Started

### 1.1.1 Creating Your First Gantt Chart

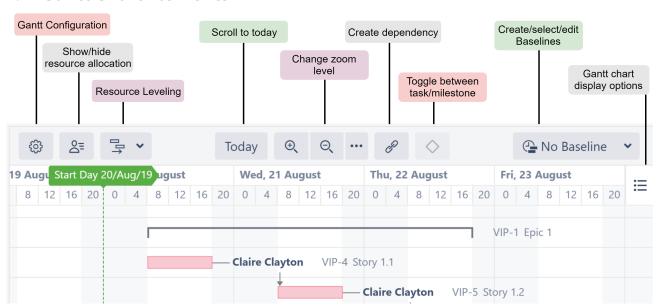
The first step to using Structure. Gantt is to create your own Gantt charts. You can use one of our Gantt Chart templates or add a chart to an existing structure. See Creating Your First Gantt Chart(see page 20) for a step-by-step guide to each method.



## 1.1.2 Gantt Chart Configuration

The Gantt Chart configuration(see page 98) defines how the chart is built, including where the chart's information comes from and what fields are used to build it.

Structure. Gantt comes with a predefined "Default" configuration, with several predefined parameters. You can begin with the default configuration and customize it as necessary, or you can create your own custom configurations. See Gantt Configuration in Details(see page 98) for more details.



### 1.2 Gantt Chart Elements

Your Gantt chart is composed of the following elements:

- **Time Scale** Allows you to quickly navigate or focus your timeline to view a specific time frame. See Gantt Chart Elements | Time Scale(see page 51) for more details.
- **Start Date** The project start date is indicated by a green vertical dashed line. Mouse over the point at the top to see the exact date.
- **Current Date** The current date/time is indicated by an orange vertical line. Mouse over the point at the top to see the exact date.
- **Task Bars** Structure items are represented in the chart with bars. Clicking the task bar will show the Task Details panel(see page 57), which contains information about the task's timeline and resources. See Gantt Chart Elements | Task Bars(see page 54) for more details.
- **Groups** If an element has children in a structure, it can be shown as a Group (solid black line that extends from the earliest Start Date to the latest Finish Date of its child tasks). See Gantt Chart Elements | Groups(see page 54) for more details.
- **Dependencies** Dependencies are displayed as arrows between task bars. Clicking the arrow will display the Dependency Properties. See Dependencies(see page 111) for more information.
- Critical Path Tasks included in the critical path are highlighted in red.
- **Conflicts** Scheduling conflicts are indicated by a dark red line placed on top of the task bar. To review and resolve the conflict, open the Task Details panel(see page 57). See Scheduling Conflict(see page 48) for more information.
- **Display Options** The Display Options menu allows you to select what elements should be shown in the chart. See Gantt Chart Elements | Options(see page 0) for more details.
- **Status Bar** If there are any inconsistencies in the source data, the Gantt Info link will be shown on the right side of the Structure status bar (next to the Structure Info link 1 at the bottom of the screen). Click the link to see details of the inconsistencies.

## 1.3 Working with Gantt Charts

### 1.3.1 Adjusting Start/Finish Date, Manual and Automatic Scheduling

If you have enabled Manual Scheduling and configured fields for the Start and Finish Dates in the configuration, you can adjust them by dragging a task to the desired location. You can also adjust them by changing Jira fields, either on the issue page or right in the structure (if you have added the columns containing the date fields to your view). If you have enabled sprint planning(see page 32), you can reschedule a task by dragging it from one sprint to another.

See Scheduling Tasks(see page 28) for more details.

### 1.3.2 Managing Dependencies

Dependencies are defined based on Issue Links. Changing dependencies creates or removes links between issues, and vice versa.

To create a Finish to Start dependency:

- 1. Mouse over the task bar until a black circle appears to the right of the bar
- 2. Press the circle and drag your dependency line to the task you want to link to
- 3. If you have more than one link type set up for Finish to Start dependencies, you may be asked to select the link type you wish to create.

To create other types of dependencies, use the Link button in the toolbar.

To remove a dependency:

- 1. Click the link arrow between two tasks to display the Dependency Properties
- 2. Click Remove

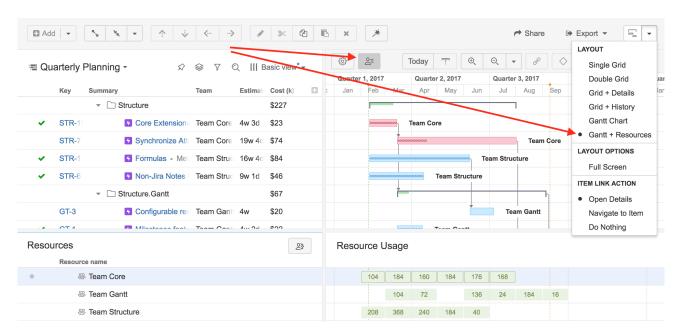
For more information about working with and configuring dependencies, see Working With Dependencies(see page 41).

### 1.3.3 Managing Resources

Structure.Gantt allows you to track resource usage on a project (or multiple projects). You can assign resources to issues using a Jira field (such as Assignee or a custom Team field) or a Structure attribute, such as a value calculated through Formulas<sup>1</sup>. Once resources are configured, Structure.Gantt can display the number of hours or percentage of availability assigned to each resource at a given time.

To view your assigned resources and their usage, click the Resources button or switch Layout to "Gantt + Resources."

<sup>1</sup> https://wiki.almworks.com/display/structure/Formula+Column



To assign resources to your tasks, see Resources.(see page 114) For additional information, see Resource Management(see page 62).

## 2 Introducing Structure.Gantt

Structure. Gantt allows you to display cross-project and cross-team work in a Gantt chart.

Is is built as an extension to Structure<sup>2</sup>, the Jira app that allows to organize issues in adaptable, user-defined hierarchies.



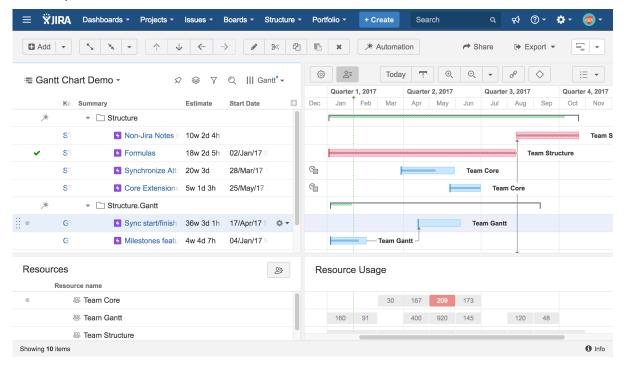
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https://www.youtube.com/watch?v=dBuPMkbk5pU&rel=0&autoplay=0&modestbranding=1

## **Main Concepts**

Every Gantt chart consists of two parts:

- · Work breakdown structure, which defines the scope of work and which is built using Structure functionality
- The chart itself, which visualizes your tasks on the timescale, showing their start and finish dates, dependencies between them and other information



The chart is designed to be very configurable and allows you to use your Jira data (such as time tracking, date/time fields, links, etc) for visualizing your work on the timeline.

The chart consists of the following elements:

- The toolbar, which helps you navigate the chart, configure the view and do a few other things
- The timeline
- The chart itself with the tasks, dependencies and other useful information

<sup>2</sup> https://wiki.almworks.com/display/structure/Basic+Concepts

You can schedule your tasks, change tasks estimate and dependencies right in the chart(see page 28).

### Configurations

You define how the Gantt chart should be build by creating a chart configuration(see page 98) - a set of parameters defining what should be used for estimation, scheduling, dependencies, resources, etc.

You can create multiple configurations and quickly switch between them for the same structure, or reuse any configuration in multiple structures.

## 2.1 Resource Management

Structure. Gantt allows you to visualize resource allocation and identify potential bottlenecks. For each individual resource you can define it's capacity, calendar, availability and the time zone (see page 62).

## 3 Creating Your First Gantt Chart

Depending on your needs and experience with Structure, there are a few different methods for creating a new Gantt Chart.

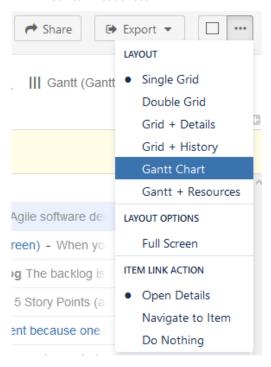
- To add a Gantt chart to an existing structure, see Define Your Chart Manually(see page 20)
- To create a chart for a new project, see Using Structure Wizard(see page 21)
- To create an Agile Gantt chart (visualize and plan your epics and stories based on their sprints), see Agile Gantt Chart Template(see page 24).

## 3.1 Define Your Chart Manually

If you are already working with a project in Structure, adding a Gantt chart couldn't be easier!

Once you have installed Structure.Gantt, two new options will appear under the **Toggle Panels** button:

- Gantt Chart
- · Gantt + Resources



Selecting either of these options will open the Gantt Chart Settings screen. To create your Gantt chart:

- 1. Enter a Project Start Date
- 2. Select the Gantt Chart Configuration you wish to use for this structure (if you are unsure, we recommend starting with the **Default** configuration and modifying as necessary later)
- 3. Enter your Fix Version and Sprints Timeline Settings (optional). You can use these options to place markers on your timeline to indicate the dates of fix versions and current/anticipated sprints. For more information, see Gantt Chart Settings(see page 95).

Once you're done, click Create Gantt Chart.

That's it! Now you can skip ahead to Working with Your Gantt Chart(see page 28) to learn how to review and modify your project timeline.

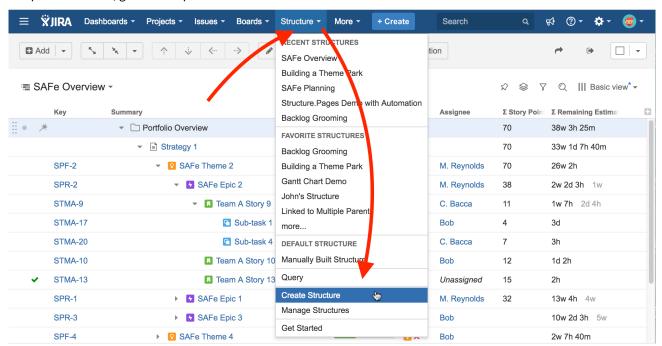
- ⚠ If you select a configuration that has been shared by another user, any changes this user makes will affect your Gantt chart too.
- (i) To be able to create Gantt charts (even for existing structures) you need to have the appropriate permissions set for your account. To create a Gantt chart for a structure that you created, you must have permission to create new structures. To create a Gantt chart for a structure you did not create, you need Control access. If you are unable to create a Gantt chart for a structure, speak with your system administrator.

## 3.2 Using Structure Wizard

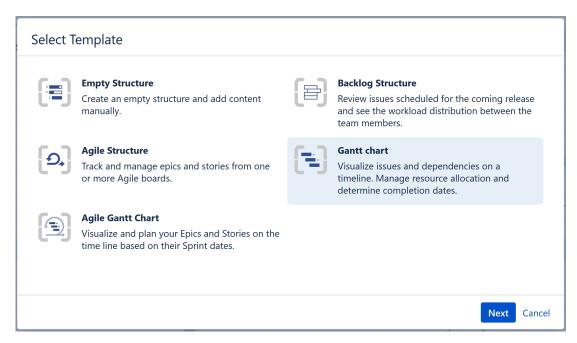
If you are new to Structure or want to create a new Gantt chart separate from any of your existing structures, we recommend using the Gantt Chart Template in the Structure Wizard. In a few simple steps, you can define your work breakdown structure (WBS), timeline, dependencies and other parameters which will be used for generating the Gantt chart.

If you plan to use Structure.Gantt for sprint planning, you may want to try our Agile Gantt Chart Template(see page 24).

To open the wizard, go to the top Structure menu and click Create Structure.



Select the **Gantt Chart** template and click **Next**.



The Structure Wizard will walk you through the creation of your Gantt chart, including defining scope, WBS, dependencies, scheduling, and resources.

### 3.2.1 Define Scope

With Structure.Gantt, you can combine multiple projects and agile boards into a single, easy-to-read chart—or you can create highly-focused charts that only show select issues from one or more projects.

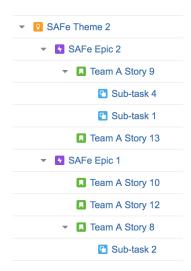
To define your scope:

- 1. **Select at least one Project or Agile Board to import issues from.** You can include as many projects and/or boards as you need—Structure.Gantt makes it easy to work with multiple projects at one time.
- 2. **Determine how you want multiple projects/boards displayed.** If you want to view them separately (organized in different folders), make sure the **Put each project or board into a separate folder** checkbox is checked. Otherwise, all issues will be placed together.
- 3. **Select which issue types to include.** By default, all issue types will be included. You can choose between Jira issue types or use JQL Query to limit the issues included. (You can change your selection later.)

#### 3.2.2 Work Breakdown Structure

Structure allows you to arrange issues based on the relationships that exist in Jira, in order to create a visual representation of the hierarchies.

If you're working on a large project and/or multiple projects, there's a good chance you have tasks that also include sub-tasks and epics that span multiple stories. Structure.Gantt can automatically arrange your structure and chart, so you can easily visualize how larger parts are broken down into smaller pieces—and how the work is broken down.



On the Work Breakdown Structure screen, you can select the following types of relationships to be represented in your chart:

- **Sub-tasks** This places sub-tasks under their parents.
- Agile Hierarchy This will put stories under the epics they belong to.
- **Portfolio Hierarchy** If you are using the Atlassian Portfolio add-on, Structure can visualize the hierarchy you have in your Portfolio plans.
- Issue Links If you use issue links to create hierarchy in Jira, Structure can visualize this hierarchy too. You can also specify the link type and direction. For example, if you have a link showing that issue A "contains" issue B, issue B will be added as a child of issue A in your structure.

### 3.2.3 Dependencies

Structure. Gantt uses Jira links to represent dependencies between issues.

By default, Finish to Start dependencies are displayed on your Gantt chart. To configure other types of dependencies, click the **Additional dependency types** link. (If you're not sure what dependencies you'll need, you can adjust dependencies settings(see page 111) at any time using Gantt configuration(see page 98)).

## 3.2.4 Scheduling

Structure.Gantt can use Jira time tracking fields (Original Estimate or Time Spent + Remaining Estimate) or Story Points to schedule tasks within your timeline.

On the Scheduling screen, you can specify how your timeline will be calculated and displayed:

- Work Estimates Select whether you will use Time Tracking or Story Points to create work estimates.
  - If you use Story Points, enter an Hours Ratio (how long a single Story Point typically takes to complete) and Structure. Gantt will convert your Story Points into hours when calculating your timeline.
- Manual Scheduling/Dates Visualization By default, Structure.Gantt automatically places items within your timeline based on estimates and dependencies; however, you can override this with Manual Scheduling. If you wish to use Manual Scheduling, select the fields where Start Date and Finish Date data will be located.

#### 3.2.5 Resources

Structure. Gantt allows you to track your resource requirements throughout a project, so you can see at a glance when resources are over-tasked or available for additional work.

On the Resources screen, select whether or not you wish to track resource allocation and, if so, the field you will use to assign resources. You can choose from a variety of Jira fields or use a custom field or formula. Many of our customers use the **Assignee** field, so they can track individual workloads.



① You can also use both at the same time by setting up a Formula for the resources(see page 114), but that is only possible using Gantt configuration(see page 98).

#### 3.2.6 Calendar

By default, Structure.Gantt uses the predefined "Standard" work calendar(see page 118) to schedule items in the chart. If you have removed or changed the name of this calendar, an additional screen will appear asking you to select which calendar should be used. In either case, you can edit the calendar later via Gantt Configurations(see page 98).

Congratulations! You've just configured your first Gantt chart. Click the Save Settings button, and the structure, its v iew<sup>3</sup> and the corresponding Gantt chart will automatically be created.

Here are a few additional resource to help you get started:

- If you're new to Structure, you can learn more about working within a structure on our Structure Documentation page<sup>4</sup>.
- If you're ready to start managing tasks with Structure. Gantt, see Working with Your Gantt Chart. (see page 28)
- If you need to make changes to your Gantt chart configuration(see page 98), click the Settings button on the top left of the Gantt screen.



⚠ To be able to create Gantt charts (even for existing structures) you need to have the appropriate permissions set for your account. To create a Gantt chart for a structure that you created, you must have permission to create new structures. To create a Gantt chart for a structure you did not create, you need Control access. If you are unable to create a Gantt chart for a structure, speak with your system administrator.

## 3.3 Agile Gantt Chart Template

If you're working in an Agile environment, where tasks are assigned to specific sprints rather than scheduled for specific dates, Structure. Gantt's sprint planning feature makes it easy to visualize and plan epics and stories across multiple projects.

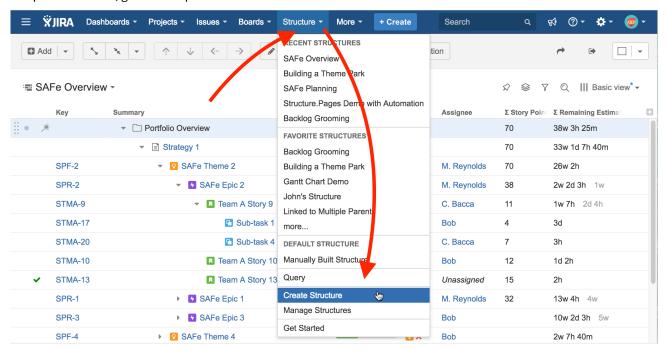
The easiest way to get started is with our Agile Gantt Chart template.

<sup>3</sup> https://wiki.almworks.com/display/structure/Configuring+View

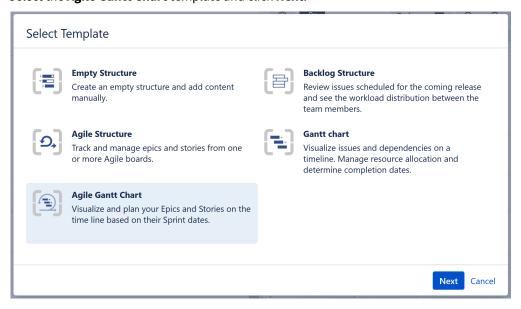
<sup>4</sup> https://wiki.almworks.com/display/structure/Documentation

### 3.3.1 Open the Agile Gantt Chart Wizard

To open the wizard, go to the top **Structure** menu and click **Create Structure**.

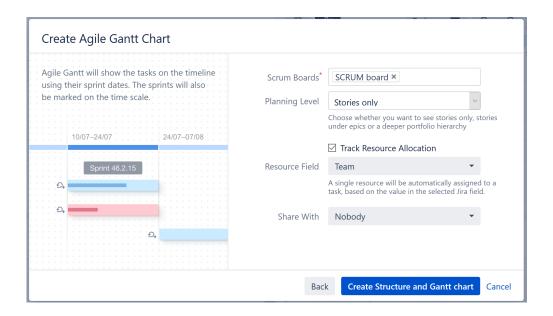


#### Select the Agile Gantt Chart template and click Next.



### 3.3.2 Select Your Gantt Chart Options

On the following screen, you'll customize your chart.



#### 3.3.2.1 Scrum Boards

You can add issues from any board you have permissions for. Simply click the Scrum Boards field, locate the board you want to add, and click it. You can include as many boards as you need.

### 3.3.2.2 Planning Level

You can select from the following options when creating your Agile Gantt Chart:

- Stories only adds all issues except epics and sub-tasks, placing them all at the same level within your chart.
- **Stories under epics** adds stories (everything except epics and sub-tasks) beneath their respective epics in your chart.
- Portfolio if Atlassian Portfolio is installed, this will add a portfolio level above epics.

#### 3.3.2.3 Resources

Structure. Gantt allows you to track your resource requirements throughout a project, so you can see at a glance when resources are over-tasked or available for additional work.

If you wish to track resource allocation, check the **Track Resource Allocation box** and select the **Resource Field** that should be used to assign resources to your tasks. You can choose from a variety of Jira fields or use a custom field or formula. Many of our customers use the Assignee field or a custom Team field.

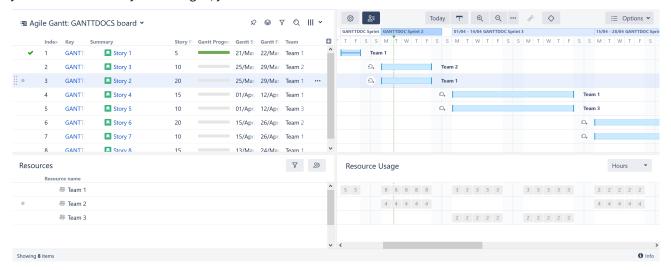
#### 3.3.2.4 Sharing

In the Share With section, select who the chart should be shared with. Only the people you select will have access to view the structure and Gantt chart you create. You can change or customize these settings later in Structure Permissions<sup>5</sup>.

<sup>5</sup> https://wiki.almworks.com/display/structure/Structure+Permissions

#### 3.3.3 Create Your Gantt Chart

Once you've selected your options, click the **Create Structure and Gantt chart** button. Your new chart will be constructed using Structure's powerful Automation<sup>6</sup> feature. If you need to make changes to the issues included in your chart or how they are arranged, you can edit the automation rules<sup>7</sup> later.



Issues will automatically be scheduled in your Gantt chart based on a 2-week estimate for future sprints and a custom Gantt configuration with the following settings:

- Work estimates are based on Story Points, with Time Tracking enabled if no Story Points data is available.
- The standard 40 hours/week calendar is used, unless there is no "Standard" calendar found.

To view or change these settings, see Gantt Configuration. (see page 98)

#### 3.3.4 Additional Resources

Congratulations! You've just built an Agile Gantt chart.

Here are a few additional resource to help you get started:

- If you're new to Structure, you can learn more about working within a structure on our Structure Documentation page<sup>8</sup>.
- If you're ready to start managing tasks with Structure.Gantt, see Working with Your Gantt Chart.(see page 28)
- If you need to make changes to your Gantt chart configuration(see page 98), click the Settings button on the top left of the Gantt screen.



To be able to create Gantt charts (even for existing structures) you need to have the appropriate permissions set for your account. To create a Gantt chart for a structure that you created, you must have permission to create new structures. To create a Gantt chart for a structure you did not create, you need Control access. If you are unable to create a Gantt chart for a structure, speak with your system administrator.

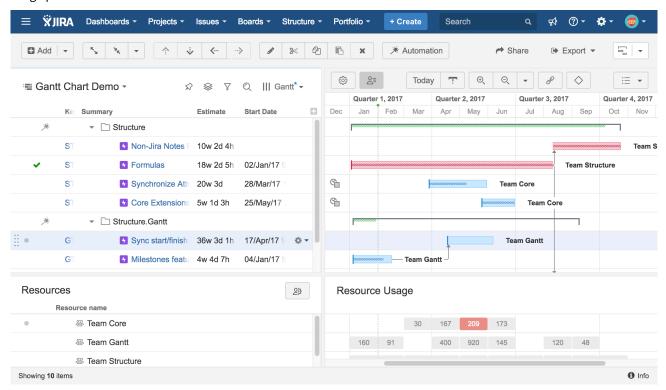
<sup>6</sup> https://wiki.almworks.com/display/structure/Automation

<sup>7</sup> https://wiki.almworks.com/display/structure/Editing+a+Generator

<sup>8</sup> https://wiki.almworks.com/display/structure/Documentation

## 4 Working With Your Gantt Chart

Once you have created your Gantt chart, you will see the work breakdown structure (WBS) in the left panel and the chart itself in the right panel. Depending on your panel layout, you may also see the Resources and Resources Usage panels at the bottom of the screen.



When working with a Gantt chart, you can make most scheduling changes directly from the toolbar and your timeline. In some cases, you may need to change your Gantt chart configuration, which we will discuss later.

To start working with your Gantt chart right away, see Scheduling Tasks(see page 28).

For a closer look at the menu and layout, see Gantt Chart Elements(see page 50).

## 4.1 Working With Tasks

Structure. Gantt not only allows you to easily visualize your tasks and the dependencies between them on a timeline. You can also schedule tasks, change tasks estimates and create dependencies right in the chart. To learn more about working with tasks in your timeline, see the appropriate article(s) below.

- Scheduling Tasks(see page 28)
- Adjusting Duration(see page 39)
- Working With Dependencies(see page 41)
- Scheduling Conflict(see page 48)

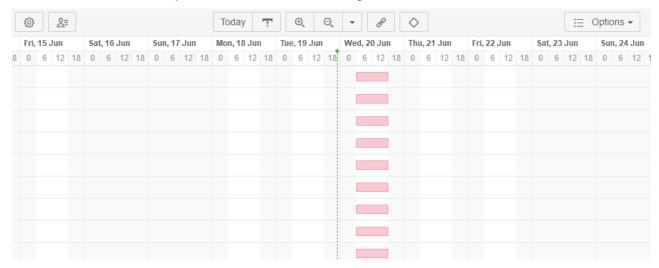
### 4.1.1 Scheduling Tasks

Gantt charts can be scheduled automatically based on project start dates, task estimates, predecessors and dependency types. Or tasks can be manually scheduled based on Start/Finish dates or sprints.

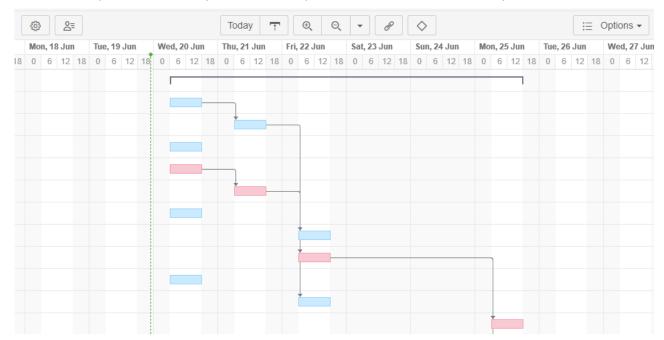
- Automatic Scheduling(see page 29)
- Manual Scheduling by Start or Finish Date(see page 30)
- Planning with Sprints(see page 32)
- Fixed Duration(see page 36)

#### 4.1.1.1 Automatic Scheduling

By default, Structure.Gantt will auto-schedule tasks based on your project start date, task estimates, predecessors and dependency types. If you are working from a brand new structure and haven't yet set up dependencies or Start and Finish dates, chances are your Gantt Chart looks something like this:



As you create dependencies between items, your chart will automatically update so that successor tasks do not start until their predecessor is complete (or until the predecessor is estimated to be complete).



As you move items around in your structure or change dependencies, your tasks will move within your timeline as well.

The example above illustrates Finish-to-Start dependencies. You can also configure Start-to-Start, Finishto-Finish and Finish-to-Start dependencies, and Structure. Gantt will schedule them accordingly.

### 4.1.1.2 Manual Scheduling by Start or Finish Date

#### Manual Scheduling

While automatic scheduling is a powerful tool for visualizing your project timeline and working with dependencies, there are times when you may need to manually schedule Start or Finish dates. For example, you may need to push back a Start Date due to resource limitations or budgeting issues, or some tasks may require a strict Finish Date because of an impending deadline.



#### To manually edit task Start and Finish dates, you must first enable Manual Scheduling in Gantt Configuration in Details(see page 98):

- 1. Click the Gantt Chart Settings button on the left side of the chart toolbar
- 2. Under Gantt Chart Configuration, click **Edit** to update the current configuration (click **Manage Configuration** to select a different configuration or create a new one)
- 3. On the Scheduling screen, check the **Allow manual scheduling** box
- 4. Select the Jira fields that will be used for your Start and/or Finish dates



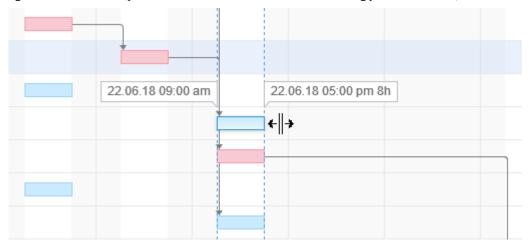
⚠ If Use sprints for manual scheduling is selected, Structure.Gantt will also consider sprint dates when scheduling tasks. The article below explains how Structure. Gantt behaves when that option is not selected or tasks are not assigned to a sprint. To learn more about sprint-based scheduling, see Planning with Sprints(see page 32).

Once you have enabled manual scheduling, you can quickly adjust a task's schedule by dragging the task to a desired location in your timeline. As you move the task bar, one of three things will happen to your corresponding Jira fields:

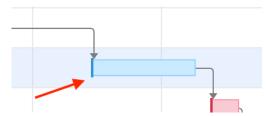
If you have manually set both Start and Finish dates, both date fields will be updated

- If you have only manually set the Start Date, only the Start Date field will be updated (the Finish Date will continue to be automatically scheduled based on task estimates and dependency types)
- If you have only manually set the Finish Date, only the Finish Date field will be updated (the Start Date will continue to be automatically scheduled based on task estimates, predecessors and dependency types)

You can also adjust the Start and Finish dates by changing the corresponding Jira fields - either on the issue page or right in the structure (you'll need to add the columns<sup>9</sup> containing your date fields).



Once you schedule a task manually, Gantt will place a visual indicator (dark, vertical line) at the corresponding end of the task bar, so you can quickly identify manually scheduled tasks.

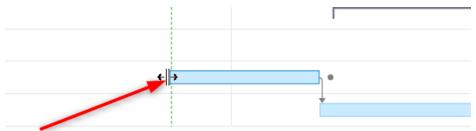


To adjust a task's Finish Date (without changing the Start Date), hover over the right edge of the bar. Once the mouse pointer changes to the resize tool, click and drag left or right to set the new Finish Date. Since the Start Date remains unchanged, this process also updates the task's Original Estimate (if the task hasn't been started) or Remaining Estimate (if the task is in progress).



<sup>9</sup> https://wiki.almworks.com/display/structure2gmaster/Customizing+Columns

You can also adjust a task's Start Date (without changing the Finish Date) by dragging the left side of the bar. In this case, the Finish Date remains unchanged, while the Original Estimate/Remaining Estimate or custom estimate is updated.



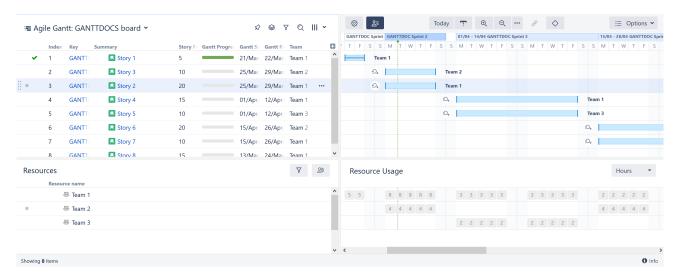
Manual Scheduling uses the following rules:

- If neither Start nor Finish dates are defined, the task is scheduled automatically to start either at the Project Start Day you selected when configuring your Gantt chart or based on the task's dependencies. For example, in the case of a Finish to Start dependency, the task will be scheduled to start immediately following the Finish Date for the task it depends on. (Note: If Use sprints for manual scheduling(see page 106) is selected and the task is assigned to a sprint, the task will be scheduled based on its sprints(see page 32).)
- If you move a task in the chart, it's Start Date value will be set accordingly, and the task will be considered scheduled manually. If the Finish Date is not set manually, it will be calculated based on the task's Start Date and work estimate.
- If you set the Finish Date manually, the Start Date will be calculated based on the Finish Date and work estimate. If you then move the task, the Finish Date will be adjusted accordingly.
- If you set both Start and Finish dates for your task, it will have a Fixed Duration(see page 36), and its work estimate will be divided evenly between the Start and Finish dates. Moving the task bar in the chart will change both the Start and Finish dates accordingly, without affecting work estimate.
- (i) As you set the Start/Finish Date or use sprint-based scheduling, the task is considered to be scheduled manually. This means it will stay at the defined position regardless of its dependencies.

To switch back to the Automatic Scheduling mode, click the task to see the Task Details panel(see page 57) and toggle the Scheduling option to **Auto**. Your Start/Finish dates will remain in Jira, but they will not be used for scheduling purposes. Instead, the task will be placed after its dependencies or, if no dependencies exist, the Gantt Start Date will be set to the Project Start Day, as defined in the Gantt Chart Settings. You can also turn off manual scheduling for a task by removing the Start/Finish dates from the corresponding Jira fields.

#### 4.1.1.3 Planning with Sprints

In an agile environment, tasks are often assigned to a specific sprint, rather than specific dates. With the Use Sprints for Manual Scheduling(see page 106) option enabled, tasks can be scheduled to begin and end based on sprint dates. You can also move a task to a different sprint(see page 35) directly from your Gantt chart.



If a task has more than one sprint assigned to it, Structure. Gantt will use the most recent sprint (based on actual and/or anticipated sprint end dates) for scheduling and visualization.



#### **Visualizing Sprints**

Sprints are represented in the chart header as follows:

- · White bars represent closed sprints
- The deep blue bar represents an active sprint
- Blue bars represent future sprints

At some zoom levels, sprints will not be shown due to space limitations. To view sprints, simply zoom in.

#### **Future Sprints**

Jira does not allow you to specify dates for future sprints, so Structure. Gantt schedules future sprints based on your Sprint configuration (see page 97) settings.

#### **Fixed Duration**

Tasks that are scheduled by sprint have a Fixed Duration(see page 36). They are scheduled for the entirety of the sprint, regardless of their work estimate, with the assumption that team members will work on tasks as they have availability during the sprint period, rather than in a set order or at a specific time. When calculating resource usage(see page 63), Structure. Gantt spreads the work for each task evenly across the sprint.

See Fixed Duration(see page 36) for more details.

#### Tasks with Start/Finish Dates and Sprints

If a task has a Start and/or Finish date and is assigned to a sprint:

- If the **Prefer sprints over manual start and finish dates** is selected in your Gantt configuration(see page 106), the task will be scheduled based on the sprint
- If this is not selected, the task will be scheduled based on the Start/Finish date

See Scheduling Precedence(see page 107) for more information.

#### **Parallel Sprints**

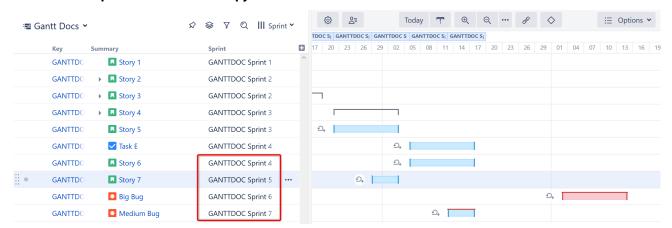
If you're working with Parallel Sprints, please note that at this time Structure. Gantt only supports parallel sprints with the same start dates and durations. When dragging a task from a board with parallel sprints, Structure. Gantt will always check which sprint you wish to reassign the task to.



Parallel sprints with different start dates and/or durations are not currently supported in Structure.Gantt. While tasks from such sprints will still appear in your Gantt chart, their sprint dates may not be displayed correctly. Structure.Gantt will take the earliest start date and latest finish date and treat all parallel sprints as having these dates when visualizing them within your chart.

#### Same Sprint on Multiple Boards

Structure. Gantt schedules sprints based on the board they were created in. This usually works quite well, but it can result in some unusual behavior if you have copied boards within your Jira instance. This is because copied boards maintain the same sprints as the original, and new sprints can be added on either board. If you have different sprint planning settings for each board in Structure, sprints created on one board will follow a different timeline from sprints created on its copy.



In the example above, it appears as though we have scheduled Sprints 5 before Sprint 4 and Sprint 7 before Sprint 6! This happened because we created Sprints 4 and 6 in our original board and Sprints 5 and 7 in its copy. We then intentionally created different Sprints configurations(see page 97) for the two boards (2 week durations for the original board, 1 week for the copy).



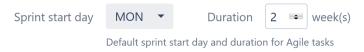
We only did this for the demonstration - we don't recommend it!

Because future sprints are scheduled based on the board they were created in, Sprints 5 and 7 have shorter durations than the other sprints. If we reassigned Medium Bug to Sprint 6, it would change to the 2-week schedule. Likewise, if we reassigned Big Bug to Sprint 7, it would shift to the 1-week schedule.

Fortunately, you can easily avoid this behavior in one of two ways:

1. Use the same Sprints Configuration for everything. If you don't have any custom configurations, all future sprints will be scheduled using your default configuration.

#### **Sprints configuration**



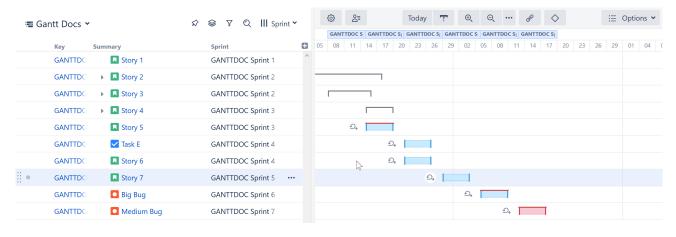
Add sprints configuration

2. When setting up board-specific configurations, be sure to include all board copies. This way, future sprints will be scheduled the same, regardless of where they were created.



Add sprints configuration

Once the boards have been aligned, our future sprints will be scheduled appropriately.

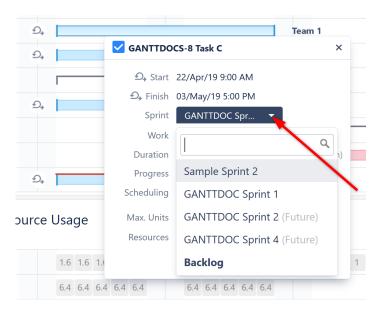


If a custom configuration is not created for a specific board, sprints from that board will be scheduled using the default configuration.

#### Reassigning Sprints with Structure.Gantt

If tasks are manually scheduled by sprints, (see page 32) you can assign a task to a new sprint directly from the Gantt chart. To do so:

- · Drag the task to the new sprint within the Gantt chart, or
- Update the Sprint in the Task Details panel



When dragging a task, only sprints that belong to the same board as the issue will be suggested. In the Task Details panel, you can select from any sprint available to the current user.

Can't Select a Sprint When Dragging the Task

If you don't see sprint options when dragging a task, it could for one of two reasons:

- Prefer sprints over manual start and finish date is not selected in the Gantt configuration AND the issue
  has a Start or Finish date assigned. In this case, dragging the task will only adjust the Start/Finish date. You
  can still update the sprint in the Task Details panel but it still will not be scheduled based on the sprint. To
  do that, you need to update your Gantt configuration or remove any Start/Finish dates.
- 2. The task has never been assigned to a sprint. In this case, Structure.Gantt does not know which board to display sprints from. You can still select a sprint using the Task Details panel, where you can choose from any sprints available to the current user.

#### **Backlog**

If you need to unassign a task from a sprint without reassigning it to another, open it's Task Details panel(see page 57) and change the Sprint selection to **Backlog**. Once a task is moved to the backlog, it will be automatically scheduled(see page 29) within your Gantt chart.

i Tasks cannot be assigned to or removed from closed sprints.

#### 4.1.1.4 Fixed Duration

There are times when you may want to allot more time for a task than the amount of work required, allowing the assignee to complete the work at any point during the allotted time. For example, if you have five bugs that need to be fixed in the next week, it may not matter when each of them is fixed, so long as they are all completed in that time.

Using **Fixed Duration**, you set the duration of a task, and the work is distributed evenly across that duration (see Work Distribution(see page 38)). When updating a fixed duration task:

• Adjusting the amount of work required for the task does not affect its duration.

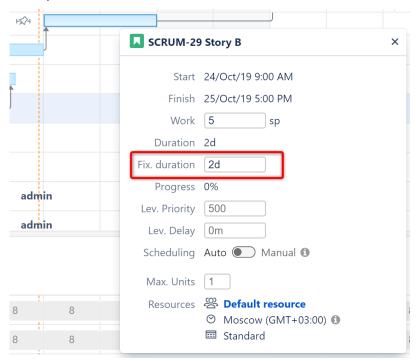
• Moving the task's Start or Finish Date, or changing the duration, will not change the work requirement.

#### **Setting Fixed Durations**

Fixed Durations can be set for tasks in one of three ways:

### 1. Setting the Duration Value

When you update the Fixed Duration value for a task, it is given a Fixed Duration, independent of the work required to complete the task.

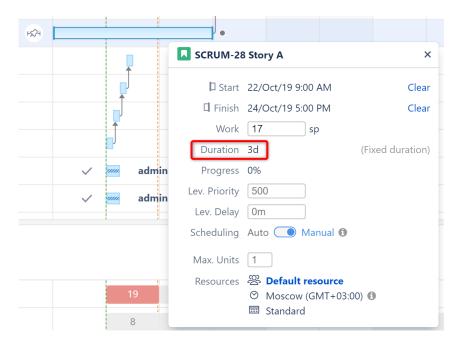


This task can be automatically scheduled, or you can manually assign a Start or Finish date.

(i) You can also set the duration value for tasks based on a Jira field or formula, by configuring the Duration Attribute(see page 108).

#### 2. Assigning Both a Start and Finish Date

When a task's Start and Finish dates are both assigned, the task has a Fixed Duration.



With this method, if you make further changes to the task's Start or Finish date, the task's duration will change, but the work will remain the same.

(i) When Start and Finish dates are both manually scheduled, the task's Fixed Duration value is ignored.

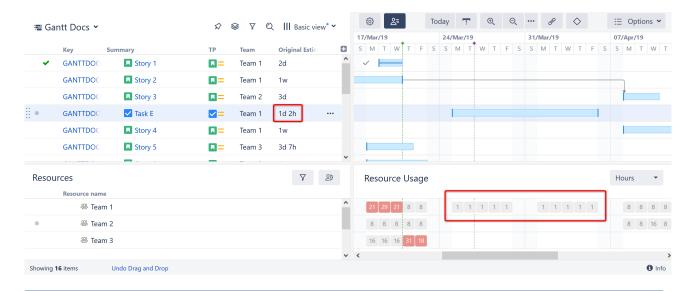
#### 3. Using Sprint-based Scheduling

When tasks are scheduled by sprint, they are given a fixed duration based on the length of the sprint.

See Planning with Sprints(see page 32) for more information.

#### **Work Distribution**

With fixed duration, the amount of work that needs to be completed for a task (it's work estimate) is divided evenly across the the duration when calculating resource usage(see page 63). So if an issue's work estimate is 10 hours (1d 2h) and the task has a fixed duration of 10 working days, the issue would require 1 hour of work each day.



(i) If a task requires more work than the assigned resource can complete in a given period of time, a red line will appear over the task, indicating there is a Scheduling Conflict(see page 49).

## 4.1.2 Adjusting Duration

In Structure.Gantt, duration for each task can be calculated in one of four ways:

- Automatically(see page 39)
- Based on Start and Finish Dates(see page 40)
- Based on Sprints(see page 40)
- Manually Setting Duration(see page 40)

#### 4.1.2.1 Automatically

By default, task durations are calculated automatically, based on each task's work estimate, the calendar, resource availability and the Work Estimates settings(see page 101).

To adjust the duration of these tasks:

- · Edit the task's work estimate fields, or
- Drag the left or right side of the task bar.



Dragging the right side of a task bar will cause the task's work to be updated and its duration to be recalculated.

#### 4.1.2.2 Based on Start and Finish Dates

When tasks are manually scheduled(see page 104) and have both a manual Start and Finish Date, the task has a fixed duration(see page 36), spanning the time between its Start Date and Finish Date.

To adjust the duration of a fixed duration task, drag either side of the task bar. This will update the task's Start or Finish Date, and the duration will be adjusted accordingly.



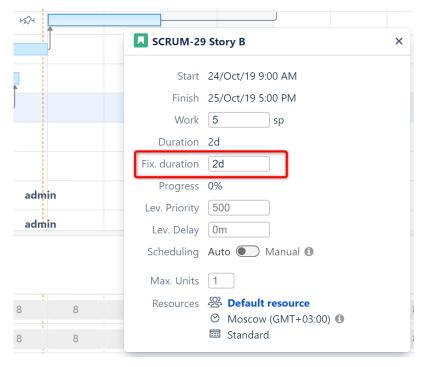
(i) Adjusting the duration of a fixed duration task does not affect its work estimate.

## 4.1.2.3 Based on Sprints

When tasks are scheduled based on sprints(see page 32), they have a fixed duration(see page 36) corresponding to the length of the sprint. It is not possible to adjust the duration of these tasks, except by removing them from sprint-based scheduling or changing your sprint duration (see page 97) settings.

### 4.1.2.4 Manually Setting Fixed Duration

You can set a fixed duration(see page 36) for an individual task by updating the **Fix. Duration** field in the Task Details Panel(see page 57).



Tasks can also be assigned a fixed duration based on a Jira field or formula, by assigning a Fixed Duration Attribute (see page 108) in the Gantt Configuration.

## 4.1.3 Working With Dependencies

In Structure.Gantt, dependencies are defined based on Issue Links. Changing dependencies creates or removes links between issues (the link type is defined in the Gantt configuration(see page 98)).

Structure. Gantt supports the following types of dependencies:

- Finish to Start (FS) the second item's start is dependent upon the first item's finish
- Start to Start (SS) the second item's start is dependent upon the first item's start
- Finish to Finish (FF) the second item's finish is dependent upon the first item's finish
- Start to Finish (SF) the second item's finish is dependent upon the first item's start

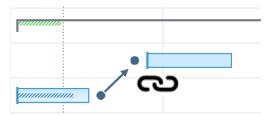
By default, the dependency transition happens immediately. For example, in an FS dependency, the second item starts as soon as the first item finishes. If you need to delay a start/finish or begin it early, you can configure a lead/ lag time(see page 44) for dependencies.

### 4.1.3.1 Finish to Start Dependencies

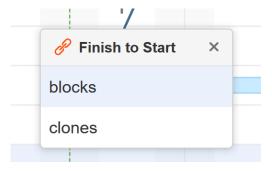
Structure. Gantt uses Finish to Start dependencies by default. To enable other types of dependencies, see Gantt Configuration | Dependencies(see page 111).

To create a Finish to Start dependency:

- 1. Mouse over the task bar until a black circle appears to the right of the bar.
- 2. Press the circle and drag your dependency line to the task you want to link to. Once you release the mouse button, the dependency (and the corresponding Jira link) is created.



If you have more than one link type associated with Finish to Start dependencies, you will be asked which link type you want to use.



You can use favorites to streamline the selection process:

- If you favorite one Finish to Start link type, Structure. Gantt will skip the popup and use that type every time
- If you favorite multiple Finish to Start link types, only your favorites will be listed in the popup

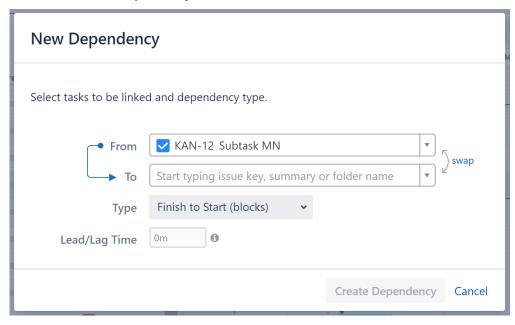
See Dependencies(see page 111) for more information.

if Resource Leveling(see page 72) is active, any leveling delays affecting the newly-linked items will be removed.

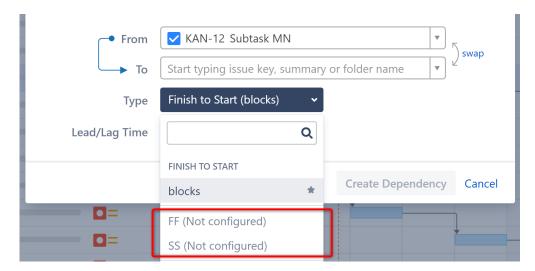
## 4.1.3.2 Other Dependency Types

To create other types of dependencies:

- 1. Click the Link button of in the toolbar
- 2. Select the tasks you want to include in the dependency
- 3. Select the Dependency Type
- 4. Assign a custom lead/lag time(see page 44), if necessary.
- 5. Click Create Dependency



If you haven't configured a Dependency Type, you won't be able to select it in the New Dependency menu.



In order to use these dependency types, you first need to configure them in your Gantt Configuration(see page 111).



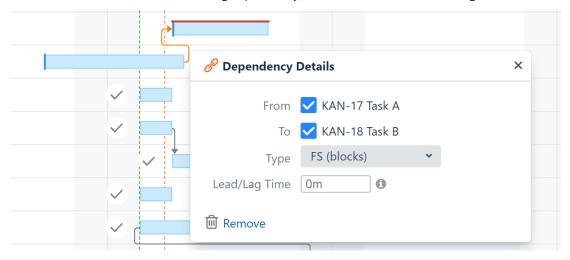
⚠ Start to Finish and Finish to Finish dependencies are currently not supported between tasks and groups(se e page 109).

## 4.1.3.3 Non-Issue Dependencies

It is also possible to create dependencies between non-issues items (Structure Folders<sup>10</sup> and Memos<sup>11</sup>), as well as between issues and non-issues. These dependencies are stored inside Structure. Gantt and are not visible outside of the chart.

### 4.1.3.4 Dependency Details

To view or edit the details of an existing dependency, click the link arrow connecting two tasks.



<sup>10</sup> https://wiki.almworks.com/display/structure/Folders

<sup>11</sup> https://wiki.almworks.com/display/structure/Memo

## 4.1.3.5 Deleting Dependencies

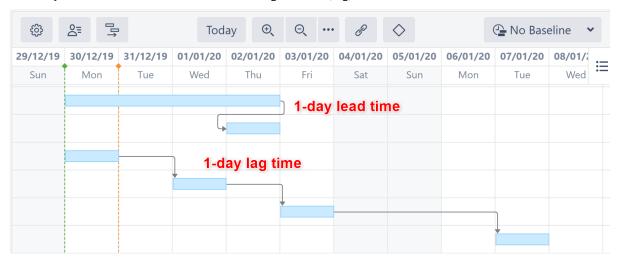
To delete a dependency, click the **Remove** link in the Dependency Properties panel.

(i) If Resource Leveling(see page 72) is active, any leveling delays affecting the previously-linked items will be removed.

Next Step: Gantt Chart Elements(see page 50)

## 4.1.3.6 Dependency Lead/Lag Time

When building dependencies between items, typically one item is set to start or finish the moment another starts or finishes. However, there may be situations where you need to build in a lead or lag time between dependencies. For example, you may need the second item to start shortly before the first item finishes (lead), or you may want to wait a few days after one item finishes before starting the next (lag).



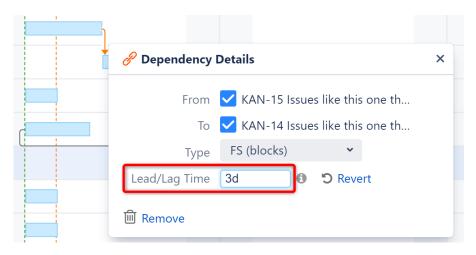
You can accomplish this in Structure. Gantt by configuring the lead/lag time for dependencies.

i Lead/Lag works with all types of dependencies.

#### Setting Individual Lead/Lag Times

To create a lead or lag time for a specific dependency, click the dependency link in the Gantt chart to open the Dependency Details panel. Then edit the Lead/Lag field:

- To set a lead time, input a negative number.
- To set a lag time, input a positive number.

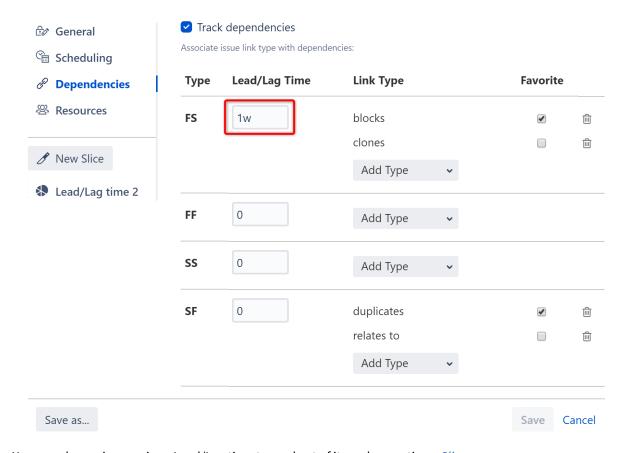


Lead/lag time should be entered using Jira duration format (1d 3h 30m).

- (i) Lead/lag time is applied based on your work calendars:
  - The work calendar of the dependency source is used for dependency calculation.
  - The work calendar for the dependency target is used to adjust the task position if it is scheduled during non-working times.

### Setting Standard Lead/Lag Times

You can also set a standard lead or lag time for each dependency type in your Gantt configuration.



You can also assign a unique Lead/Lag time to a subset of items by creating a Slice(see page 121).

A

These Lead/Lag times will be overwritten by individual times set using the Dependency Details panel.

#### Lead/Lag Times and Resource Leveling

Running Resource Leveling(see page 72) may affect lead/lag times:

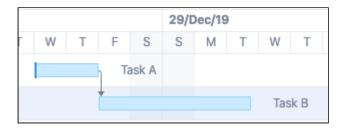
- Lead times may be removed if both items in the dependency share the same resource.
- Lag times may be extended to resolve overallocations.

## 4.1.3.7 Dependency Types Supported by Structure.Gantt

Structure.Gantt supports the following dependency types:

#### Finish to Start

Finish to Start is the most commonly used dependency type. In a Finish to Start dependency, a task's start date is based on when the task it depends on finishes.



Task B starts after Task A finishes.

#### Start to Start

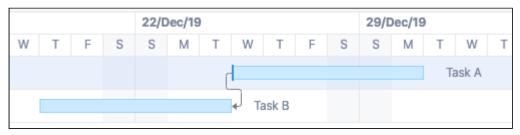
In a Start to Start dependency, a task's start date is based on when the task it depends on starts.



Task B starts at the same time Task A starts.

#### Start to Finish

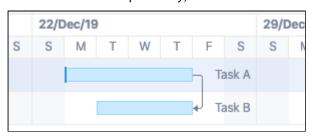
In a Start to Finish dependency, a task's finish date is based on when the task it depends on starts.



Task B finishes before Task A starts.

#### Finish to Finish

In a Finish to Finish dependency, a task's finish date is based on when the task it depends on finishes.



Task B finishes together with Task A.

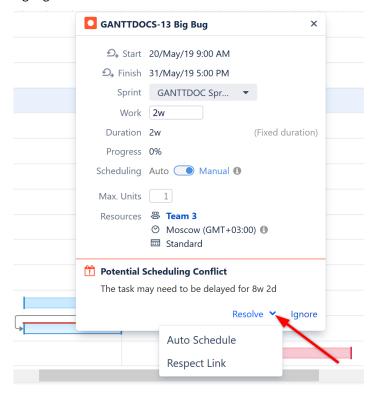
(i) The above examples show tasks within a dependency starting or finishing in sync with one another. It is also possible to configure a lead or lag time (see page 44) for these. For example, setting a 1-day lead time for Finish to Start dependencies would cause a task to begin one day before the task it depends on finishes.

## 4.1.4 Scheduling Conflict

Structure. Gantt highlights any scheduling conflicts with a dark red line placed on top of the task bar. To review and resolve the conflict, open the Task Details panel. The conflict will be explained at the bottom of the panel, along with resolution options.

## 4.1.4.1 Dependency-based Scheduling Conflicts

Issue dependencies may create conflicts when manual scheduling is enabled. For example, for finish-to-start dependencies, if a task is scheduled for a date earlier than its predecessor's Finish Date, Structure.Gantt will highlight this conflict.



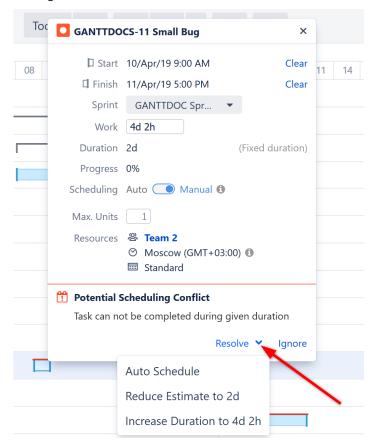
To deal with the conflict, click the task and select one of the following actions:

- Respect Link Changes the task Start Date to coincide with the predecessor's Finish Date. The task will stay in the Manual Scheduling mode.
- Auto Schedule Switches the task to the Automatic Scheduling mode, clearing its Start Date or Finish Date and scheduling the task based on its predecessor and the dependency type.
- Ignore Removes the highlighting from the task bar, but the conflict will stay, and the conflict details will remain in the details panel.

if Resource Leveling (see page 72) is active, any leveling delays affecting the item will be removed when Respect Link or Auto Schedule is selected.

### 4.1.4.2 Duration/Work Estimate Conflicts

If a task is scheduled for a fixed duration(see page 36) shorter than its work estimate, you will receive an error message.



When this occurs, you have a few options to resolve the conflict:

- Auto Schedule Removes manual scheduling.
- **Reduce Estimate** Reduces the task's work estimate to match its duration.
- Increase Duration Increases the tasks duration to match its work estimate. If the task was scheduled based on sprints(see page 32), a manual Start Date will be added to coincide with the start of its sprint and the task will be manually scheduled based on that date.



⚠ If **Prefer sprints over manual start and finish dates** is selected in your Gantt configuration, the Increase Duration option will be unavailable, because changing the start date would have no effect when sprints take precedence.

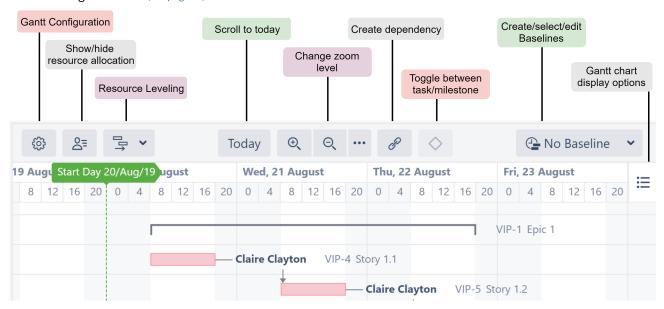
## 4.2 Gantt Chart Elements

The following section will walk you through the elements of your Gantt chart panel and explain how to accomplish many common tasks.

## 4.2.1 Toolbar

Using the toolbar, you can:

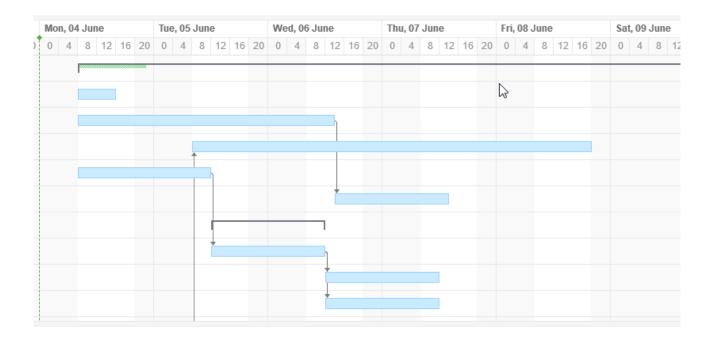
- Access Gantt Chart Settings
- · Show/hide resources
- · Adjust the chart's appearance
- · Select which elements are shown within your timeline
- Create dependencies(see page 41)
- Turn tasks into milestones(see page 61)
- Apply Resource Leveling(see page 72)
- Manage Baselines(see page 67)



## 4.2.2 Timeline

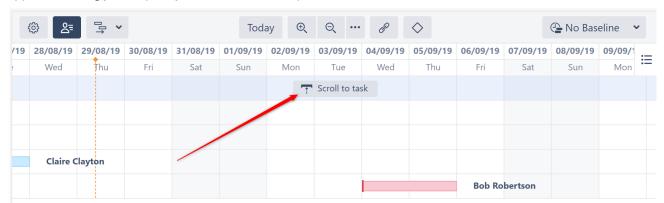
Your timeline contains visual representations of tasks, dependencies, progress, milestones and other key dates.

It is also where you will do most of your work. As you saw in Working with Tasks(see page 28), you can adjust tasks and dependencies directly from your timeline.



#### 4.2.2.1 Scroll to task

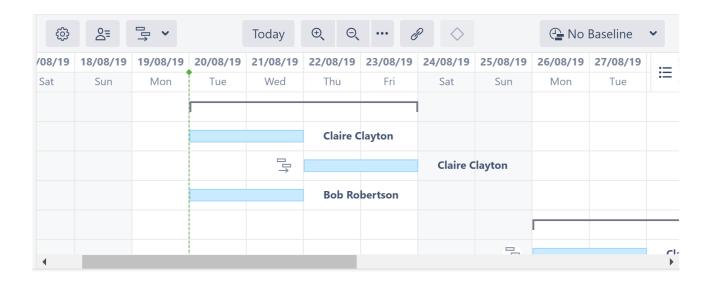
If you move the timeline to a point where the currently-selected task is no longer visible, a **Scroll to task** button will appear, allowing you to quickly return to that task's point in the timeline.



## 4.2.3 Time Scale

You can quickly navigate or focus your timeline in a variety of ways:

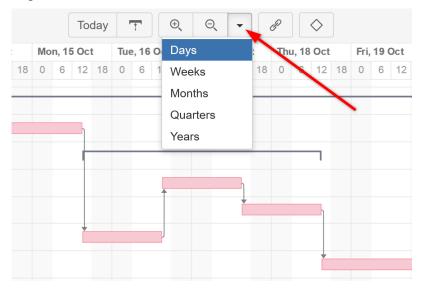
- Zoom in or out to see more or less of your timeline
- Scroll horizontally or vertically
- Hold the **Shift** key and drag the chart with your pointer
- Focus in on the current date with the **Today** button



### 4.2.3.1 Zoom Level

To adjust the zoom level of your chart, use the + or - magnification buttons in the toolbar. You can also zoom in or out using your mouse wheel, by holding down the **ctrl** button (**cmd** on macs).

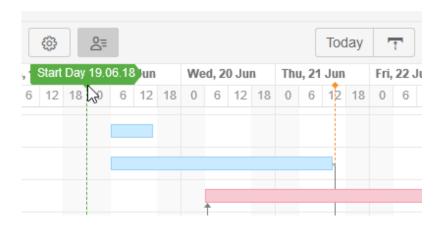
To view issues based on a specific time scale, such as weekly or monthly, use the drop-down menu beside the magnification buttons.



## 4.2.4 Start Day and Current Date

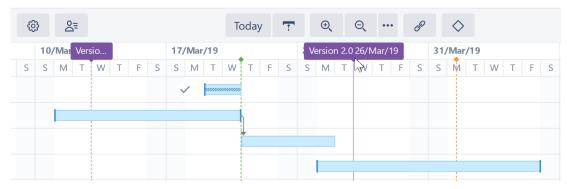
The project start date is indicated by a green vertical dashed line. The current date/time is indicated by an orange vertical line.

Mousing over the point at the top of either line will display the exact date.



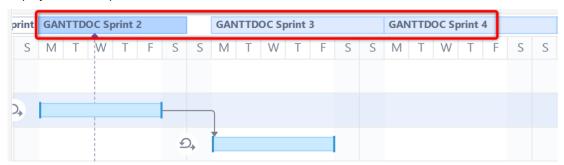
### 4.2.5 Fix Versions

Fix Version markers display version names. By hovering over a marker, you can also see the release date and project key (if versions are shown for multiple projects).



## 4.2.6 Sprints

If the highlighted task is manually scheduled by sprints(see page 32), sprints from the corresponding board will be displayed at the top of the timeline when the task is selected.



Sprints are visualized based on sprints already defined in a Jira board or anticipated sprints based on your chart settings. (See Gantt Chart Settings(see page 95) for instructions on specifying sprint timelines.)

#### 4.2.7 Task Bars

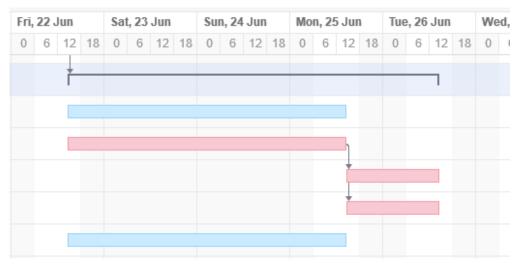
Structure items are represented in the chart as task bars.

- A task's position on the timeline is based on its dependencies(see page 41), manually-set Start or/and Finish dates(see page 30) or sprint dates(see page 32), and Leveling Delay(see page 72).
- If you have configured Gantt to track the progress of tasks, that will be shown inside the bar. To show/hide progress, use the Display Options menu(see page 55).
- Completed tasks can be marked with a check icon(see page 59). To show or hide Task Indicators, use the Display Options menu(see page 55).
- If a task is a part of the critical path(see page 55), it is shown red. You can show or hide critical path highlighting using the .

## **4.2.8 Groups**

If an element has children in a structure, it can be shown as a Group.

- A group's Start Date and Duration are calculated automatically, based on the Start Date and Duration of the elements it contains.
- If the group is an issue which has its own start/finish dates and estimate values, these are ignored.
- Progress for the group is calculated as an aggregation of its children's progress, and the element's own task progress is ignored as well.





⚠ In order to display child/parent relationships as a group, you first need to enable grouping in Gantt configuration(see page 98).

## 4.2.9 Dependencies

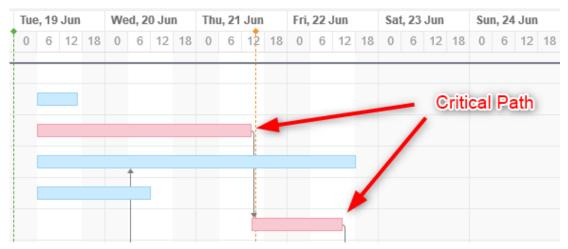
Dependencies are displayed as arrows between task bars.

- Click the arrow to show the Dependency Properties
- To show/hide dependency arrows, use the Display Options menu(see page 55). This will hide the arrows, but the position of the task bars will be unaffected.

For more information about managing dependencies, see Dependencies(see page 111).

## 4.2.10 Critical Path

If a task is part of the critical path, it will have a red task bar. A task is considered part of the critical path if delaying that task would extend the project's end date.

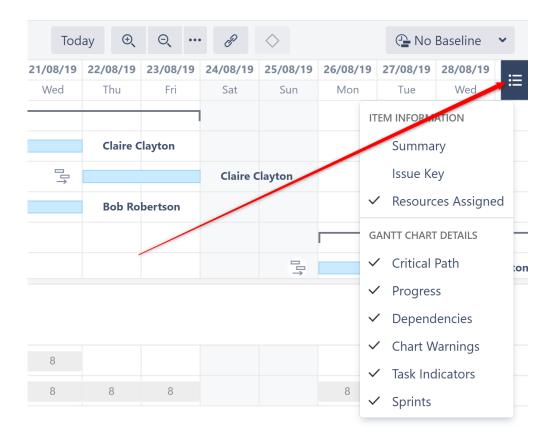


To switch off Critical Path highlighting:

- 1. Select the Display Options menu(see page 55)
- 2. Uncheck Critical Path

## 4.2.11 Display Options

The Display Options menu allows you to select what elements should be shown in the chart.

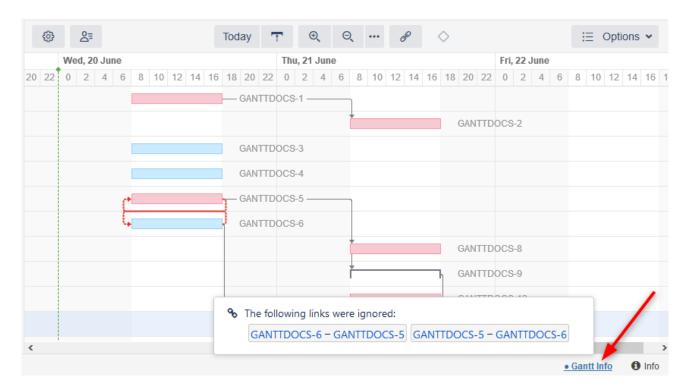


### You can show/hide:

- Summary
- Issue Key
- Resources
- Critical Path
- Progress
- Dependencies
- Chart Warnings (such as another time zone or different calendar)
- Task Indicators (see Task Indicators (see page 59))
- Sprints (Note: If this option is switched off, sprints will still be displayed when dragging sprint-scheduled tasks.)

## 4.2.12 Status Bar

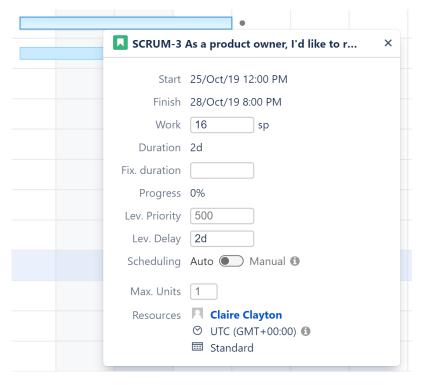
If there are any inconsistencies in the source data (for example, a cycle of dependencies), the Gantt Info link will be shown on the right side of the Structure status bar (next to the Structure Info link 1 at the bottom of the screen). Click the link to see details of the inconsistencies.



If you do not have permission to edit the Gantt chart, that information will be displayed in the Status Bar as well.

## 4.2.13 Task Details Panel

Clicking a task bar will display the Task Details panel, which contains information about the task's timeline and resources.

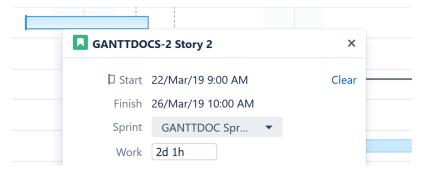


The Task Details panel displays the following details about a task:

- **Start and Finish dates** These values can be set manually, be based on sprints or be calculated based on the task's duration and dependencies.
- **Sprint** Shows the sprint the task is assigned to (if available). This can also be used to assign the task to a sprint or reassign it to a new sprint. *Note: Tasks cannot be assigned to or removed from closed sprints.*
- Work The effort required to complete the task. You can enter/update the work estimate directly from here.
- **Duration** The time it takes to complete the task.
- Fix. duration If the task has a specified fixed duration(see page 36), it will be listed here.
- Progress This can be calculated based on the Gantt Configuration(see page 103).
- Lev. Priority Weight given to the task for Resource Leveling(see page 72). A higher number equals a higher priority.
- Lev. Delay Leveling delay applied to the task by Resource Leveling(see page 72).
- **Scheduling** Allows you to toggle how tasks are scheduled(see page 28), manually (based on its Start/End date or sprint) or automatically (based on the project start day, duration and dependencies).
- **Slice** If the task's appearance or behavior is based on a Slice configuration(see page 121), the slice name is listed here.
- Maximum Units Shows the maximum resource capacity which can be used on this task. For example, if a resource has capacity of 5, but the Max Unit setting is 1, only 1/5 of the resource will be used to work on this task. If the Max Unit is set to 5 or more, the entire resource will be used and the task can be done 5 times faster. (See Resources(see page 114) for more information about assigning and tracking resources.)
- **Resources** Shows the resource assigned to the task, the resource time zone and calendar.

#### 4.2.13.1 Icons in the Task Details Panel

The Task Details panel uses icons to help you identify how a task is scheduled.



Next to the Start/Finish dates, you may see the following:

- Indicates the Task is manually scheduled based on its Start Date
- $oxed{\square}$  Indicates the task is manually scheduled based on its Finish Date
- Indicates the task is manually scheduled based on its sprint

#### 4.2.13.2 Clear Start or Finish Date

If a task is scheduled based on a Start and/or Finish date, a **Clear** link is displayed next to the date.

☐ Start	22/Mar/19 9:00 AM	Clear
☐ Finish	29/Mar/19 5:00 PM	Clear

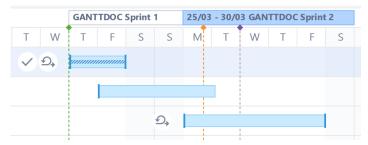
Clicking this link will remove the manual date from Jira and:

- If another date is available (Start or Finish) the task will be manually scheduled by this date.
- If Use Sprints for Manual Scheduling is selected in the Gantt Configuration and the task is assigned to a sprint the task will be rescheduled based on the sprint dates/duration.
- If neither of these are available the task will revert to automatic scheduling.

See Scheduling Precedence(see page 107) for more information.

#### 4.2.14 Task Indicators

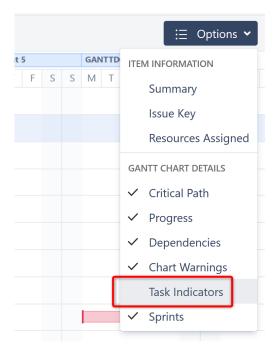
Task indicators are icons that can be displayed next to tasks or milestones to indicate how a task is scheduled or that the task is complete.



You may see the following indicators on your Gantt Chart:

- ✓ Indicates the task is complete
- Indicates the task's schedule is based on a sprint
- Indicates a leveling delay has been applied to the task by Resource Leveling(see page 72)
- Indicates the task has a Fixed Duration(see page 36)

Task indicators are visible by default. To hide them from your chart, open the Gantt Chart Display Options menu and uncheck **Task Indicators**.

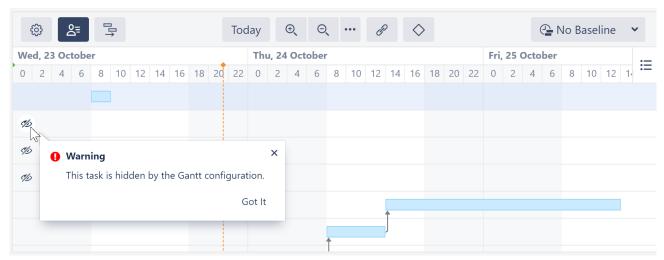


### 4.2.14.1 Hidden Tasks

If a task is hidden from the Gantt chart, the Hidden Task icon will be displayed on the left side of its row: Tasks may be hidden for the following reasons:

- The task is hidden by the Gantt Configuration, because the item behavior is marked as Do Not Show in a Slic e(see page 121).
- The structure owner does not have permission to view the task.

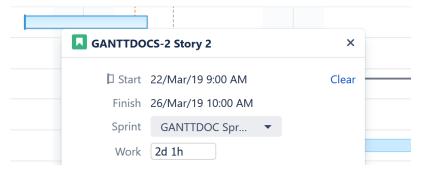
To see why a task is hidden, click its Hidden Task icon.



i To hide Hidden Task icons, open the Gantt Chart Display Options and uncheck **Chart Warnings**.

#### 4.2.14.2 Indicators in the Task Details Panel

The Task Details panel also uses icons to help you identify how a task is scheduled.

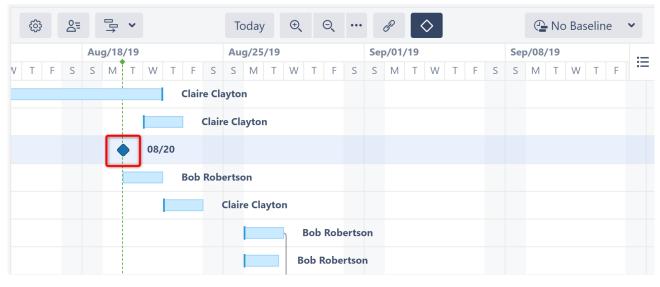


Next to the Start/Finish dates, you may see the following:

- Indicates the task is manually scheduled based on its Start Date
- $\square$  Indicates the task is manually scheduled based on its Finish Date
- Indicates the task is manually scheduled based on its sprint

### 4.2.15 Milestones

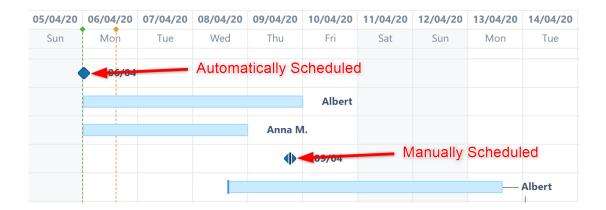
Milestones allow you to mark key points within a project plan. They can be created from issues, folders<sup>12</sup> or memos<sup>13</sup> in the structure.



Once a milestone is added to the chart, you can drag it to a desired date (if Manual Scheduling is enabled) and link tasks or groups to it. If a milestone has been manually scheduled, it will have a dark ridge down it's center:

<sup>12</sup> https://wiki.almworks.com/display/structure/Folders

<sup>13</sup> https://wiki.almworks.com/display/structure/Memo

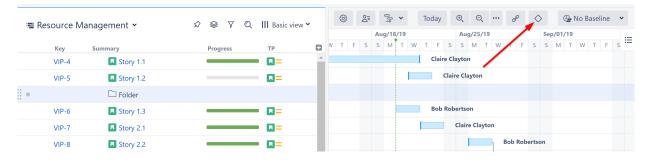


in order to manually schedule a milestone, you first need to set the Milestone attribute under the Manual Scheduling(see page 104) configuration.

## 4.2.15.1 Creating a Milestone

There are three ways milestones can be created within a Gantt chart:

- 1. Configure the chart so that tasks with zero duration are automatically turned into milestones. See Scheduling | Behavior(see page 109).
- 2. Display specific tasks as milestones using slice-based configurations(see page 121).
- 3. Use the Milestone button to manually convert a selected item into a milestone.



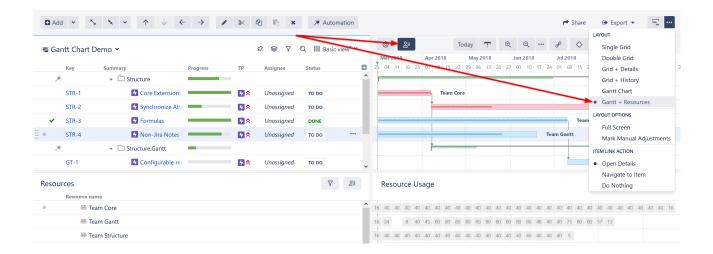
i Since there is no concept of milestone in Jira, milestones are only visible within Structure.Gantt. However, their dates can be exported using Structure Effectors<sup>14</sup>.

# 4.3 Resource Management

Structure.Gantt allows you to track resource usage on a project (or multiple projects). If you used the Structure Wizard(see page 21) to create your Gantt chart, you may have already assigned resources for your chart. If not, or if you need to change your resource assignment, see Resource Assignment(see page 114) to assign resources to your tasks.

To view Resource information, click the Show Resources button or switch Layout to "Gantt + Resources."

<sup>14</sup> https://wiki.almworks.com/display/structure/Effectors



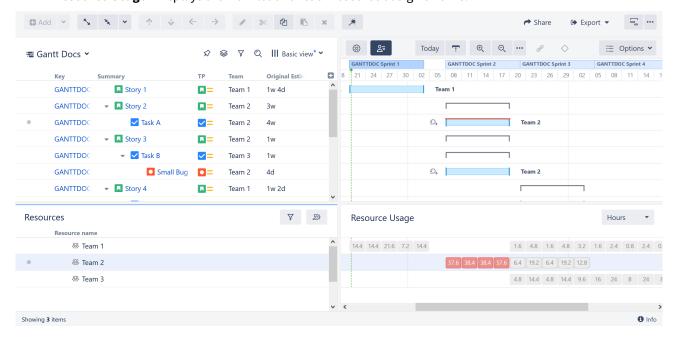
## 4.3.1 Learn More About Working With Resources

- Resources and Resource Usage(see page 63)
- Resource Settings(see page 64)
- Filter by Resource(see page 66)
- Navigating to a Resource from the Gantt Chart(see page 66)

## 4.3.2 Resources and Resource Usage

The Resources section of your chart is split into two panels:

- **Resources** Displays a list of all resources based on the information entered into the field you assigned for
- Resource Usage Displays the work load for each resource at a given time.





You can also display the allocation numbers in the Gantt chart itself. To do that, simply group(see page 63) your tasks by the attribute you used to define the resources. *Note: You cannot group by Formula values.* 

#### 4.3.2.1 Overallocation

If there is more work assigned to a resource than the resource can handle, the Usage square for that block of time will be highlighted (See Team 2's usage above). This allows you to quickly identify places where you may need to revisit your timeline or work distribution.

To resolve the overallocation, manually adjust the tasks or their resources, or use the Resource Leveling (see page 72)tool.

### 4.3.2.2 Resource Usage Timeline

The Resource Usage timeline aligns with the Gantt chart timeline above and adapts to the zoom level selected in the Gantt toolbar. Zoom in or zoom out to see details of allocation within a specific period.

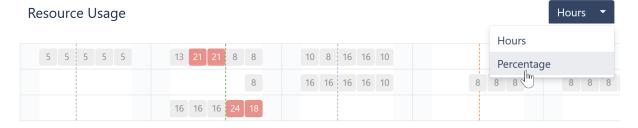
To learn more about assigning resources to tasks, see Resource Assignment.(see page 114)

### 4.3.2.3 Hours vs Percentage

Resource usage can be displayed in one of two ways:

- the number of hours assigned to a resource for a set period of time
- the percentage of a resource's availability (as determined in Resource Settings(see page 64)) that is being used at a given time

To change how resource usage is displayed, simply click on the drop-down menu in the upper-right corner of the Resource Usage panel.





Depending on your zoom level and work schedule, chart cells may appear the same but contain different amounts of work. For example, with a 6-hour zoom, you will see two cells for a typical work day (6am-12pm and 12pm-6pm), but if your work day is from 9am-5pm, the first cell will only represent 3 hours of work, while the second represents 5 hours. This is perfectly normal and does not impact the percentage of availability in any way.

## 4.3.3 Resource Settings

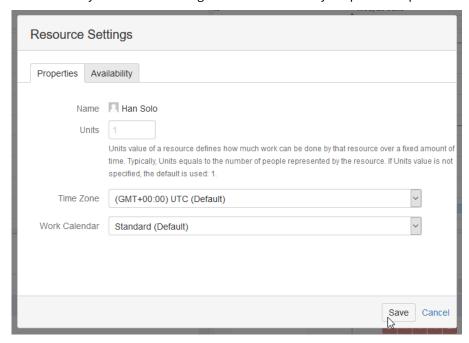
Each resource has a number of parameters that are taken into account when calculating task start and finish dates, duration and resource allocation. The default values for these parameters are set in Gantt configuration(see page 98).

You can override them for a specific resource by selecting the resource in the resource panel and clicking the Resource Settings button.



You can adjust the following settings:

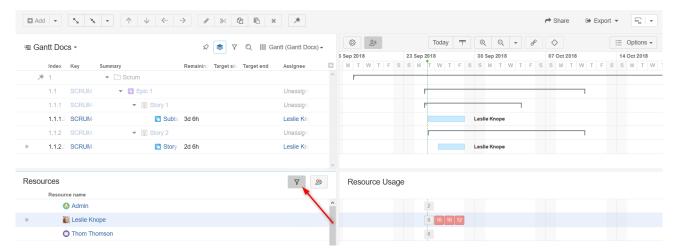
- **Units** Determines how much work this resource can do in one hour. By default, it is set to 1, which corresponds to one person. If your resource is a team of 5, you should set this value to 5. A person who only works one day a week, using Standard work calendar, would have a value of 0.2.
- **Time Zone** Defines the time zone of the resource.
- Work Calendar Defines working and non-working times(see page 118) for the resource in the resource's time zone.
- **Availability** Defines the percentage of the resource's capacity available during a specific period. This field allows you to factor in things such as vacation days or periods of part-time work.



All these parameters, as well as a task's Maximum Units(see page 50), are taken into account when calculating the duration of a task. For example, a resource with 2 units will do the task twice as fast as the resource with 1 unit, as long as the task has Maximum Units set to 2 or higher.

## 4.3.4 Filter by Resource

To view only issues assigned to a specific resource, highlight the resource's name in the Resources panel and click the Filter button.

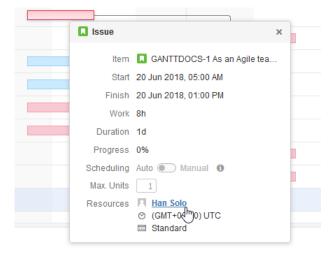


When you filter by resource:

- Issues assigned to that resource will be visible in the WBS and Gantt chart
- Issues above those in the hierarchy will be visible but grayed out
- · All other issues will be hidden

## 4.3.5 Navigating to a Resource from the Gantt Chart

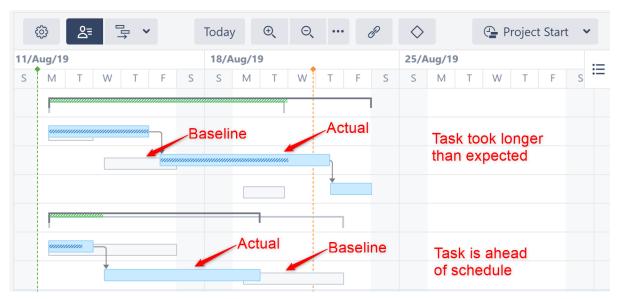
You can quickly navigate to a resource in the Resources panel (and open the Resources panel itself, if it's not yet open) by clicking on the resource name displayed in the Task Info Pop-up.



## 4.4 Baselines

Baselines allow you to compare the positions of tasks, groups and milestones in the timeline today vs. sometime in the past. This means you can track schedule changes over time, or compare two schedules for the same project (ex. manager's schedule vs. developer team's).

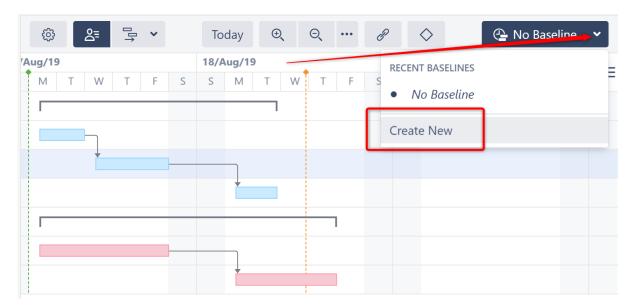
By creating a snapshot of the Gantt chart at a particular moment in time, and then showing it alongside the current chart, you can see at a glance which tasks are behind or ahead of schedule - and how that impacts the project's timeline.



The grayed-out tasks are the original locations from our baseline, while the full-color tasks are their positions today. In this example, the top set of tasks are behind schedule, while the bottom tasks are ahead of schedule.

# 4.4.1 Creating a Baseline

To create a new baseline, open the Baseline menu in the Structure. Gantt toolbar and select **Create New**.



Give the baseline a name and click **Create**.

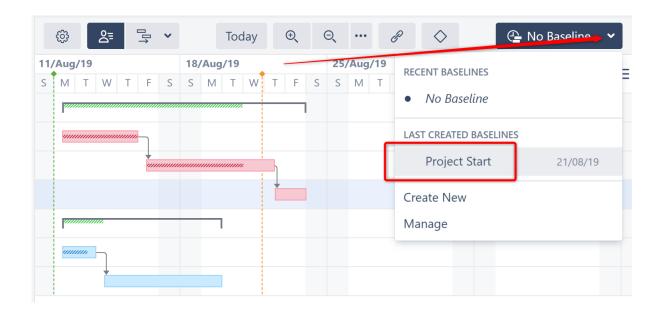


- i In order to create a baseline, you must be the structure owner or have Edit permissions<sup>15</sup> for the structure.
- i Baseline data is stored in Structure.Gantt storage. It has no effect on Jira.

# 4.4.2 Comparing Current Chart to a Baseline

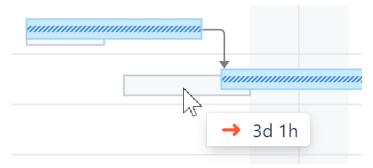
To compare the current chart to a baseline, open the Baseline menu and select the baseline you wish to use.

<sup>15</sup> https://wiki.almworks.com/display/structure/Structure+Permissions



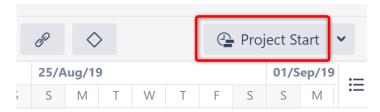
## 4.4.3 Baseline Offset

When viewing a chart with a baseline, hover over any item to see how far ahead or behind the baseline schedule the task currently is.

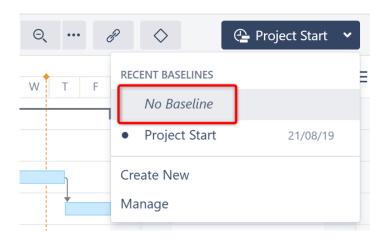


# 4.4.4 Hiding Baselines

When a baseline is applied, it's name is displayed in the Baseline menu.

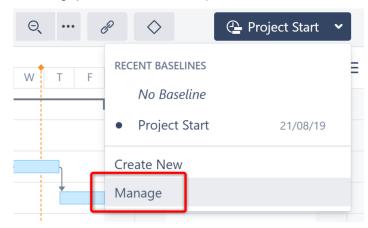


To hide the baseline (so you just see the current chart), open the Baseline menu and click **No Baseline**.

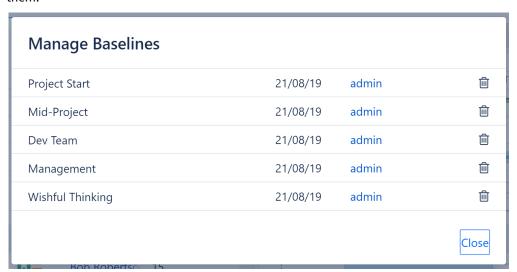


## 4.4.5 Managing Baselines

To manage your saved baselines, open the Baseline menu and select **Manage**.



On the Manage Baselines screen, you will see a list of saved baselines, when they were created and who created them.

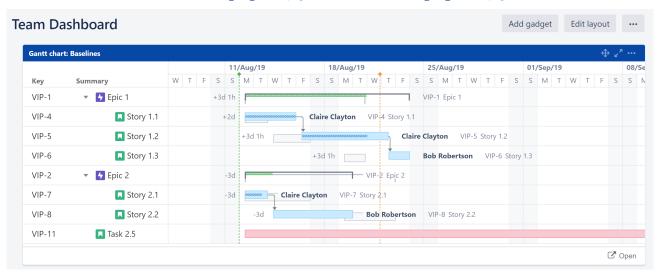


#### You can:

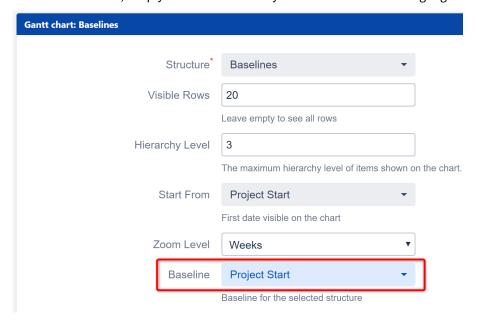
- Edit the baseline's name click the name to switch to editing mode
- Delete the baseline click the trash icon
- (i) Baselines can only be renamed or deleted by the baseline's creator, users with Control permission, the structure owner or admins.

## 4.4.6 Gantt Gadget

Baselines can be included in Dashboard gadget(see page 83)s and Confluence gadgets(see page 86).

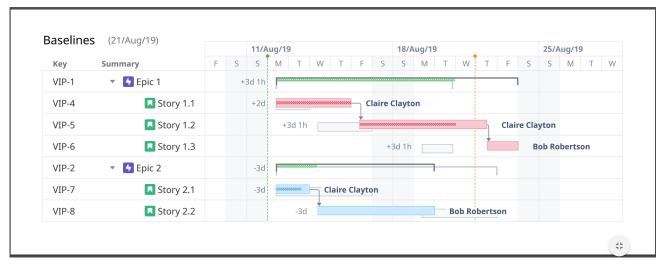


To enable baselines, simply select the baseline you want to include in the gadget settings dialogue.



## 4.4.7 Exporting Baselines

Baselines can also be included when exporting a Gantt chart(see page 78).

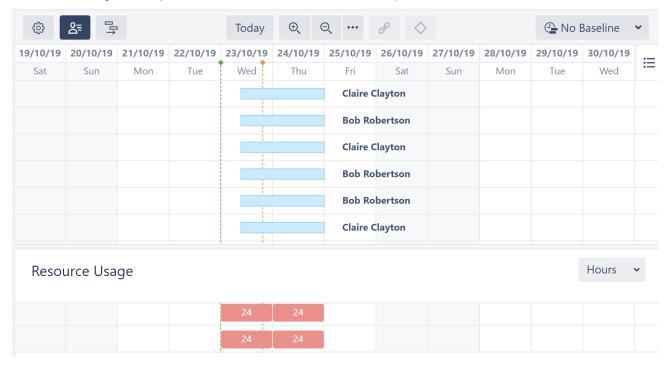


When including baselines in an export:

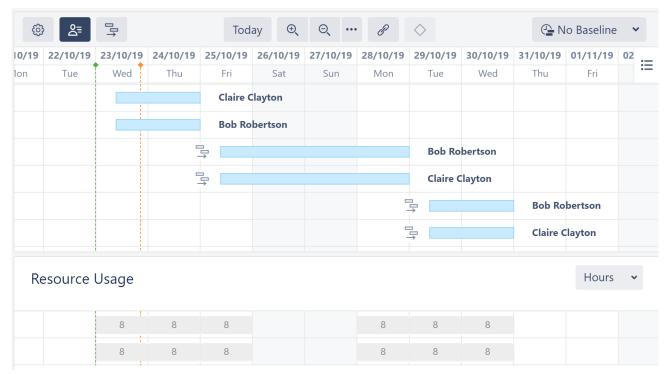
- Make sure the baseline you want to include is visible in the chart before selecting **Export Gantt Chart**
- Check the Baseline option in the Gantt Chart Details section of the Export dialogue
- Select whether or not **Baseline delays** should be displayed

# 4.5 Resource Leveling

Resource Leveling enables you to resolve all overallocations with the push of a button.



Once enabled, Structure. Gantt will identify instances of overallocation and automatically delay certain tasks to give you a realistic picture of when they can be completed.



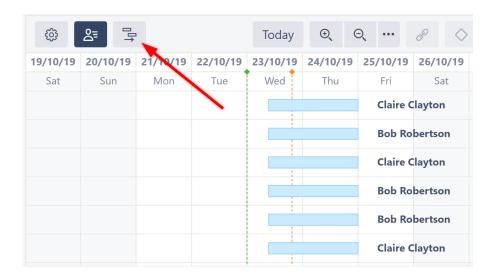
In the above example, tasks with the Leveling Delay icon were delayed to solve the overallocation seen in the first screenshot.



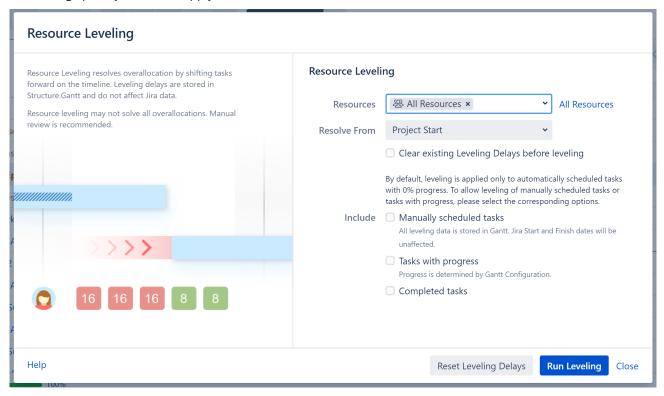
Leveling is a resource-intensive operation. It may take several seconds to dozens of minutes to complete, depending on a variety of factors, including the number of items in a structure, number of resources, number of dependencies, etc.

## 4.5.1 Starting Resource Leveling

To start Resource Leveling, click the Resource Leveling button in the Structure.Gantt toolbar.



You can then select which resource(s) Resource Leveling should be applied to (or select **All Resources**) and choose the leveling option you want to apply.



The following leveling options are available:

- **Resolve From** Only overallocations that occur after the chosen date will be resolved. By default, Resource Leveling is applied to all overallocations that occur after the project's start date.
- Clear existing Leveling Delays before leveling By default, if Resource Leveling has already been run on the structure, additional levelings will only address overallocations created since the last leveling. This speeds up the process, but if a delayed task is part of a new overallocation, it may be delayed even further. S

electing this option clears any existing delays, allowing Structure. Gantt to consider all tasks from their original positions when applying the leveling.

- Manually scheduled tasks By default, manually scheduled tasks will not be adjusted by resource leveling. To include them, check this option. Note that tasks scheduled by sprints(see page 32) are never affected by leveling.
- **Tasks with progress** By default, tasks considered in progress (based on the Progress Calculation settings in the Gantt Configuration) are not affected by resource leveling. If this option is selected, these tasks may be moved by leveling if their original estimate results in resource overallocation.
- Completed tasks If selected, resolved tasks may be moved if they they are part of resource overallocation.

When you click **Run Leveling**, Structure.Gantt will review your allocation chart to identify every instance of overallocation.

When it identifies that a resource is overallocated, it will delay some of the tasks to the future, based on a variety of factors, including but not limited to:

- **Leveling Priority** If this Gantt attribute is set, tasks with a higher assigned priority will be scheduled earlier in the timeline. See Leveling Priority(see page 117).
- **Dependencies** Leveling respects dependencies and avoids any adjustments that would result in dependency conflicts.
- Start time Tasks with an earlier start date/time will generally be scheduled sooner to limit downtime.
- Task length Longer tasks receive a higher priority.

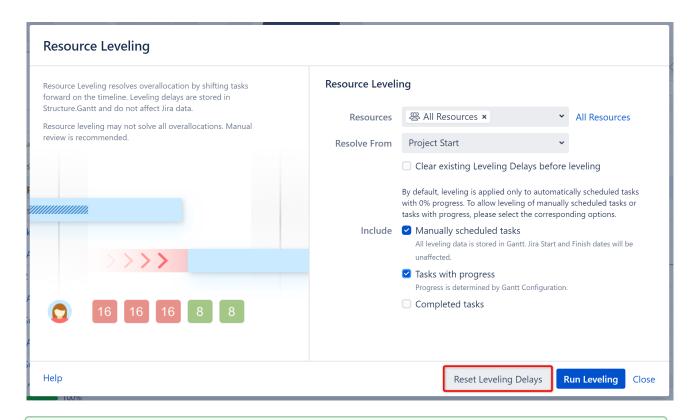
### 4.5.1.1 Additional Guidelines

- Only one leveling operation can be run per structure at a given time.
- Resource Leveling delays items in the Gantt chart only. It DOES NOT reschedule issues in Jira.
- If a task's scheduling, links or dependencies are changed in the Gantt chart after leveling has been applied, it's leveling delay will be removed. Changes made in Structure or Jira will not affect the leveling delay.

## 4.5.2 Removing Leveling Delays

To remove leveling delays(see page 76) and return tasks to their original schedule:

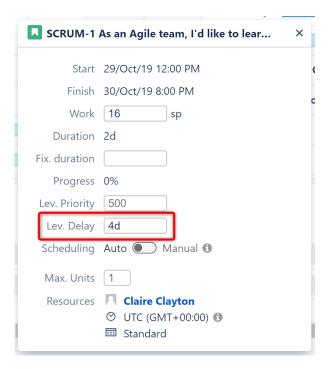
- 1. Click the Resource Leveling button again.
- 2. Select which resources you want to remove leveling for, or select **All Resources**.
- 3. Adjust the **Resolve From** date as necessary. Leveling delays will only be removed for tasks starting after this date.
- 4. If you included additional types of tasks (Manually scheduled tasks, etc.) in your last leveling, those options will be selected by default. If you uncheck them, leveling will not be reset for those tasks.
- 5. Once you've configured your options, click **Reset Leveling Delays**.



If you are unsure which tasks have leveling delays and want to remove all delays, make sure all "Include" options are checked.

## 4.5.3 Leveling Delay

The amount of time between the original schedule and the new schedule is called the **Leveling Delay**. You can view or adjust a task's Leveling Delay in the Task Details panel(see page 57).

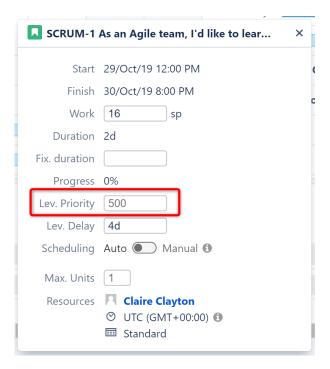


To remove an individual task's leveling delay, simply clear the value in this field.

i Leveling Delay values are stored in Structure. Gantt storage. They have no effect on Jira.

## 4.5.4 Leveling Priority

**Leveling Priority** allows you to give a higher weight to certain tasks, making them less likely to be moved when Resource Leveling is run. Leveling Priority can be assigned through Gantt configuration | Resources(see page 114), or adjusted for individual tasks via the Task Details Panel(see page 57).



Changes made to the Leveling Priority are not applied until after the current leveling is reset and a new leveling operation is run.

i If a formula is used for Leveling Priority in the Gantt configuration, any changes to an individual task's priority via the Task Details Panel will be stored inside Structure.Gantt storage.

## 4.5.5 Stop Leveling

On larger structures, the leveling process can take dozens of minutes. It is possible to stop an in-progress leveling operation, when necessary. To do so, find and click the **Leveling Progress** indicator below the Gantt Chart. In the progress pop-up, click **Stop Leveling**.



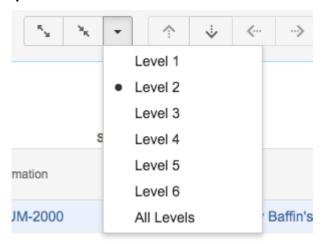
## 4.6 Exporting to a Printable File

It is possible to export a Gantt chart into a PDF or SVG file to view offline, print or share with someone else.

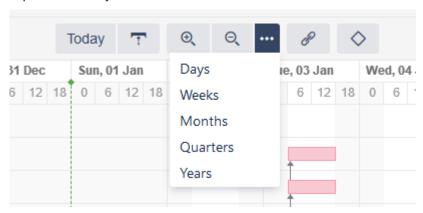
## 4.6.1 Configuring Hierarchy Level and Zoom

Certain parameters of your Gantt chart export are based on the layout of the structure and chart on your screen, including the hierarchy level<sup>16</sup> and zoom level(see page 50). You should select the desired hierarchy and zoom levels before exporting your Gantt chart.

To configure hierarchy level, you may expand or collapse items manually or use Structure's expand/collapse menu. There are three toolbar buttons you may find useful: **Expand all items**, **Collapse all items** and **Expand items for specified level**.



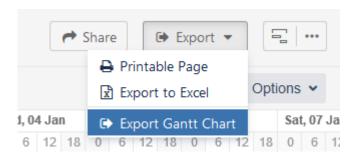
To configure the chart's zoom level, use the Gantt chart zoom toolbar buttons. You can zoom in, zoom out or select a specific unit for your time scale.



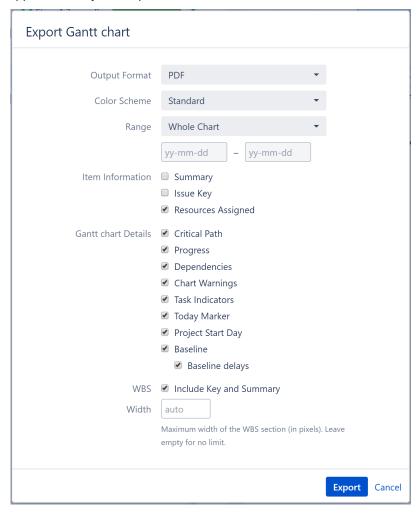
## 4.6.2 Export Gantt Chart

Once you have set the desired hierarchy and zoom levels, click **Export | Export Gantt Chart**.

<sup>16</sup> https://wiki.almworks.com/display/structure/Navigating+Between+Items



On the Export Gantt Chart window, you will be given a number of options for customizing the settings and appearance of your output file.



- **Output format** Select the format you want your chart saved in, either PDF (default) or SVG. PDF format is useful for exporting large charts that you want to print, while SVG is ideal for sharing or embedding into other graphical materials.
- **Color Scheme** Select the color scheme to use for the exported chart: Standard or Black and White (optimized for black and white printing).
- **Time Range** By default, the entire timeline (Whole Chart) is included in your export, from your earliest to latest tasks. To export only a portion of the timeline, select **Custom Dates** and enter a date rage to include. You can also specify just the Start Date to include only items starting on or after that date.

- Item information and Gantt Chart Details These allow you to choose which details will be shown on your exported chart.
- WBS Check this box to include the work breakdown structure (including the Key and Summary columns) alongside the chart.
- Width This allow you to specify the width (in pixels) of the included work breakdown structure.

Once you have finished with chart configurations, press **Export** to create and download your export file.

## 4.6.3 Exporting

Depending on the size of the chart, selected output format and your network bandwidth, export may take several seconds or (in some cases) even minutes. A progress dialog will keep you informed about the status of your export. As soon as the export is completed, download should begin automatically.

Depending on your browser settings, you might be asked to select a destination folder for the downloaded file or choose an application to open the file.



if you are not prompted for a download location, check your browser's default download location for the exported chart. The download file should have the same name as the exported structure.

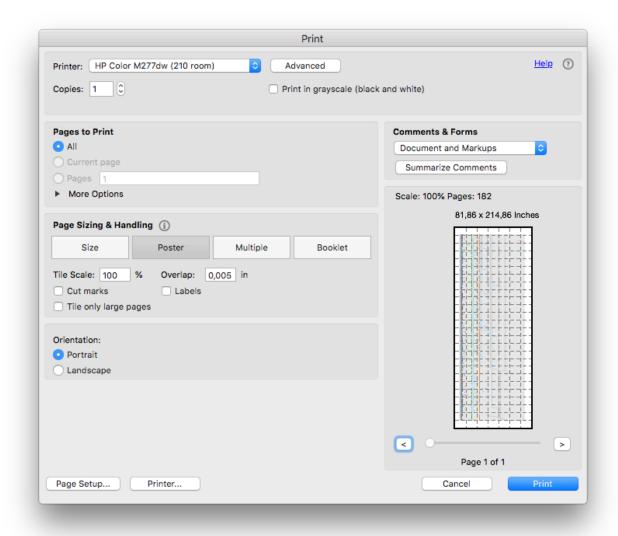


⚠ Fonts in the exported PDF may be different than those that are used in the web version of the Structure.Gantt chart.

## 4.6.4 Printing Large Charts

Sometimes you may wish to print a large chart to place at a desk or on a wall. This is possible with the help of Adobe Acrobat Reader DC<sup>17</sup>.

<sup>17</sup> https://acrobat.adobe.com/us/en/acrobat/pdf-reader.html



Acrobat Reader allows you to print any large picture as a Poster, i.e. it will automatically split it into a number of pages that can be combined later into a full-size picture. To do so, open your PDF file in the Acrobat Reader and select **File** | **Print** to reveal the printing dialog. Under Page Sizing & Handling, select **Poster**. You can configure additional options, such as tile scaling and overlapping, to suit your needs. For best quality, we recommend setting Tile Scale to "100%".



Adobe limits PDF pages to 200 inches (~5m) and will cut extra graphics if your exported chart exceeds this limit.

## 4.7 Using Gadgets

Any Gantt chart can be placed onto a Jira Dashboard or embedded into a Confluence page as a read-only gadget.

• Jira Dashboard Gadget(see page 83)

• Confluence Gadget(see page 86)



### Important!

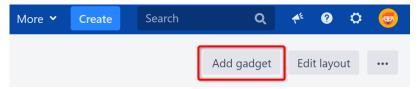
The Structure. Gantt gadget has limited functionality and is mostly dedicated to viewing. It is not possible to alter a schedule or see task details using the gadget (users should continue to use Jira or Structure.Gantt for these tasks). Additionally, if your gadget is not refreshing or is not refreshing frequently enough, make sure you have properly configured your gadget's refresh interval. See Jira Dashboard Gadget(see page 83) for more details.

## 4.7.1 Jira Dashboard Gadget

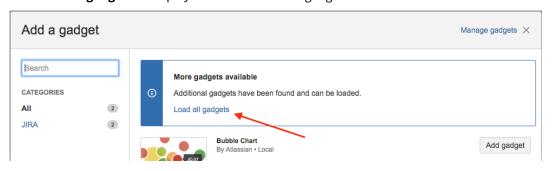
To add the Structure.Gantt gadget to a Jira Dashboard, click **Dashboards** in the top menu and select the desired dashboard, or click **Manage dashboards** to create a new one (see Atlassian documentation <sup>18</sup> for more details on how to manage dashboards).



Click the Add gadget button to display the "Add a gadget" dialog.

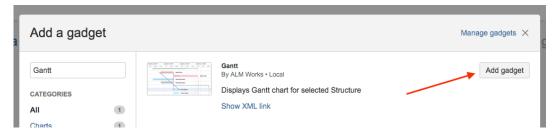


Click **Load all gadgets** to display a list of all available gadgets.



Type "Gantt" in the search field, locate the Gantt gadget and click the **Add gadget** button.

<sup>18</sup> https://confluence.atlassian.com/jiracoreserver/configuring-dashboards-939937983.html



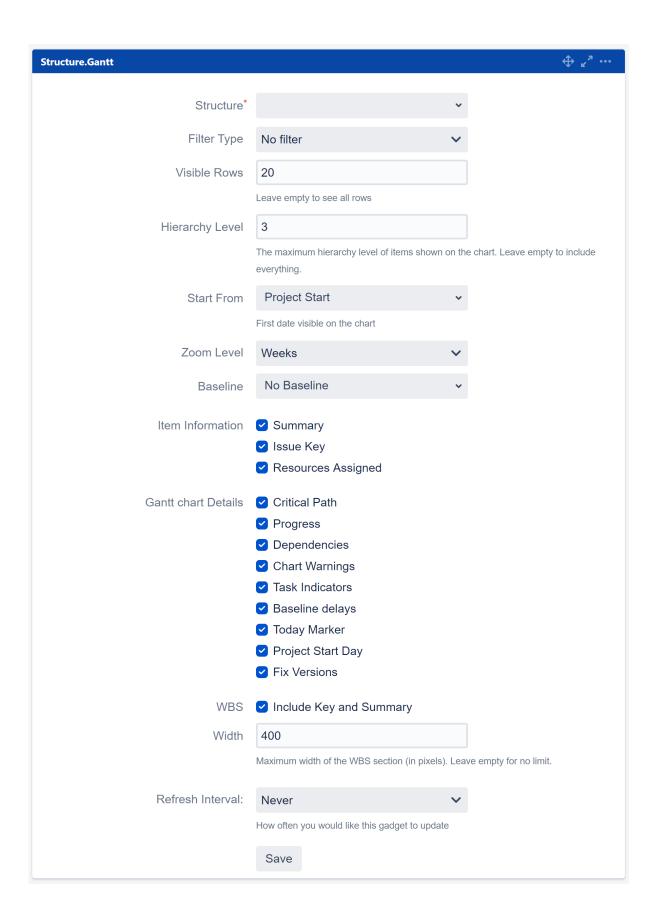
The Structure. Gantt gadget will be placed on your dashboard. Before your Gantt chart will appear there, you'll need to set your Gadget Configuration.

### 4.7.1.1 Gadget Configuration

When creating your Structure. Gantt gadget, you can set the following options:

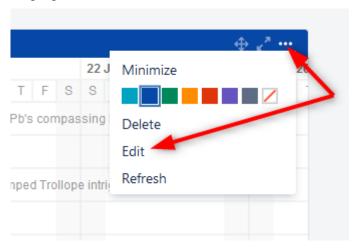
- **Structure** Defines the structure to load Gantt data for. Please note, only structures with Gantt charts already created are listed.
- Filter Type Allows you to filter the items included in the chart based on a text, JQL or S-JQL<sup>19</sup> query.
- **Visible Rows** Defines how many rows of your structure will be visible in the chart at a time. (To see additional rows, you can hold Shift+Left Mouse Button and drag the chart.) Set this value to "0" to see all available rows. Please note, the gadget height may increase significantly if there are a lot of rows.
- **Hierarchy Level** Defines how many levels to expand the structure and display in your chart. "0" means no expansion at all. Please note, it is not possible to manually expand and collapse structure nodes within the gadget.
- Start From Specifies the first date that will be visible on the chart. You can choose from **Project Start**, **Custom Date** and **Today**. If you select **Today**, the chart will be drawn starting from today, or you can specify a number of days to show prior to today.
- **Zoom Level** Specifies the zoom that will be used to represent the chart. Available options are: Days, Weeks, Months, Quarters, Years.
- Baseline Specifies whether or not to include a Baseline(see page 67) in the gadget.
- Item Information and Chart Details These allow you to select which details will be shown on your exported chart.
- **WBS** Specifies whether the work breakdown structure should be included next to the chart in the gadget. Please note, Issue Key and Summary are the only columns supported by the Structure.Gantt gadget at the time.
- Width If WBS is enabled, this allow you to specify the width (in pixels) of the included structure.
- **Refresh Interval** Specifies how often the gadget should refresh itself and fetch new data from Jira. By default, this is set to "never", i.e. to update the chart data you need to manually refresh the gadget from the gadget menu or by refreshing the page itself.

<sup>19</sup> https://wiki.almworks.com/display/structure/Structured+JQL



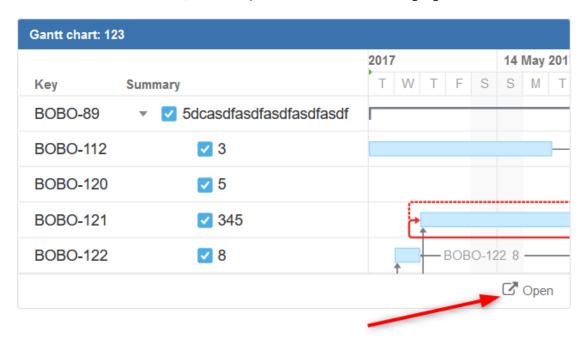
### 4.7.1.2 Editing Configuration for an Existing Gadget

To change the configuration for an existing dashboard gadget, click the **More Options** icon "..." at the top-right of the gadget and select **Edit**.



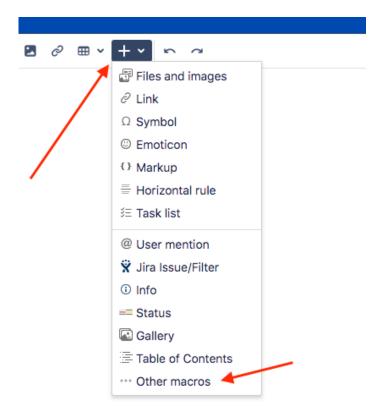
### 4.7.1.3 Open the Gantt Chart from the Gadget

To edit or view the full Gantt chart, click the **Open** link at the bottom of the gadget.



## 4.7.2 Confluence Gadget

To add the Structure. Gantt gadget to a confluence page, open the Confluence page you wish to insert the Structure. Gantt gadget into. Click the **Plus** button in the toolbar and select **Other macros**.

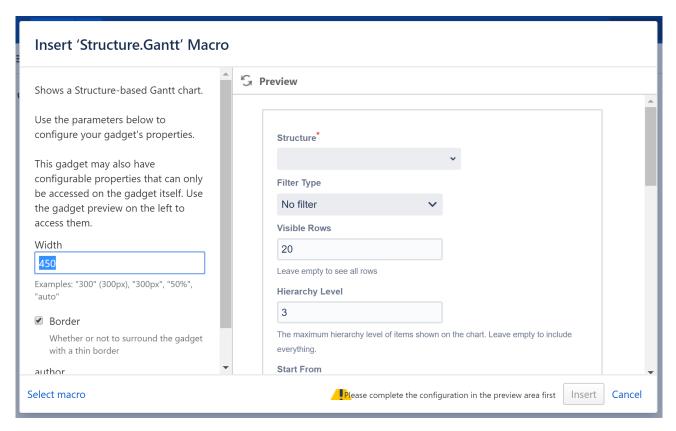


In the Select macro window, type "Gantt" in the search field and click **Structure.Gantt Gadget** in the search results.

(i) If the Structure.Gantt Gadget does not appear in the search results, your system administrator may need to configure Confluence for the Structure.Gantt gadget(see page 140).

### 4.7.2.1 Initial Configuration

Before you can add the Structure.Gantt gadget to your Confluence page, you need to configure it.



On the left side of the Insert Gantt Macro screen:

- Specify the gadget width (enter "100%" to make the gadget occupy the entire page width)
- Select whether or not to include a border around the gadget (We recommend unchecking the border setting, since there is already a border within the Structure.Gantt gadget.)

On the right side of the screen, set your desired configurations for the gadget:

- **Structure** Defines the structure to load Gantt data for. Please note, only structures with Gantt charts already created are listed.
- Filter Type Allows you to filter the items included in the chart based on a text, JQL or S-JQL<sup>20</sup> query.
- **Visible Rows** Defines how many rows of your structure will be visible in the chart at a time. (To see additional rows, you can hold Shift+Left Mouse Button and drag the chart.) Set this value to "0" to display all available rows. Please note, the gadget height may increase significantly if there are a lot of rows.
- **Hierarchy Level** Defines how many levels to expand the structure and display in your chart. "0" means no expansion at all. Please note, it is not possible to manually expand and collapse structure nodes within the gadget.
- Start From Specifies the first date that will be visible on the chart. You can choose from **Project Start**, **Custom Date** and **Today**. If you select **Today**, the chart will be drawn starting from today, or you can specify a number of days to show prior to today.
- **Zoom Level** Specifies the zoom that will be used to represent the chart. Available options are: Days, Weeks, Months, Quarters, Years.
- Baseline Specifies whether or not to include a Baseline(see page 67) in the gadget.
- Item Information and Chart Details These allow you to choose which details will be shown on your exported chart. These are similar to the display options available for your actual chart under the Display Options menu (see Gantt Chart Elements(see page 50)).

<sup>20</sup> https://wiki.almworks.com/display/structure/Structured+JQL

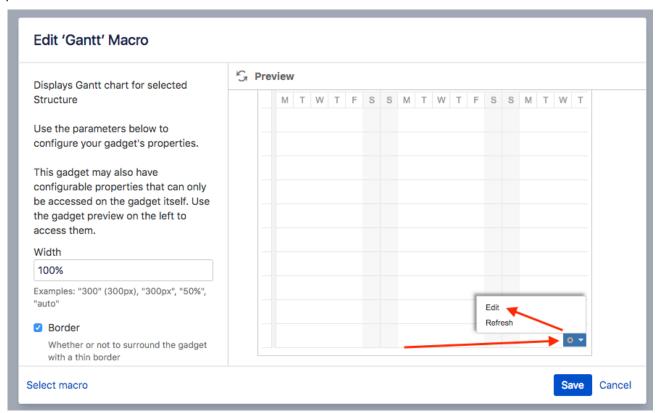
- WBS Specifies whether the work breakdown structure should be included next to the chart in the gadget. Please note, Issue Key and Summary are the only columns supported by the Structure. Gantt gadget at the
- Width If WBS is enabled, this allow you to specify the width (in pixels) of the included structure.
- Refresh Interval Specifies how often the gadget should refresh itself and fetch new data from Jira. By default, this is set to "never", i.e. to update the chart data you need to manually refresh the gadget from the gadget menu or by refreshing the page itself.



Depending on your Jira and Confluence configuration, before you can configure the Structure. Gantt gadget, you may be asked to log into your Jira account and approve gadget data access.

### 4.7.2.2 Editing Configuration for an Existing Gadget

To change the configuration for existing gadget, click the **Gear icon** in the bottom-right corner of the gadget preview and select Edit.



## 4.8 Using Gantt Attributes in Structure

Once you've created a Gantt chart, you can view and utilize its attributes within the corresponding structure. Gantt attributes can be turned into structure columns, used in formulas or transformations, or even written to Jira fields using Effectors(see page 93).



To see all the available Structure. Gantt attributes and their meanings, see List of Gantt Attributes Available in Structure (see page 93).

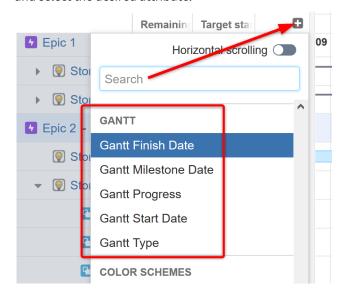


It is not possible to use Gantt attributes in Structure Automations<sup>21</sup>.

Additionally, Gantt attributes should not be used in any formula that is used by Structure.Gantt, such as Manual Start/Finish Dates or Progress, as this could result in an infinite loop.

## 4.8.1 Adding a Gantt Attribute Column to a Structure

To add a Gantt attribute to your structure, click the + icon to the right of the column headers to create a new column in the structure<sup>22</sup>. Scroll down to the Gantt section, or begin typing the attribute name in the search field, and select the desired attribute.

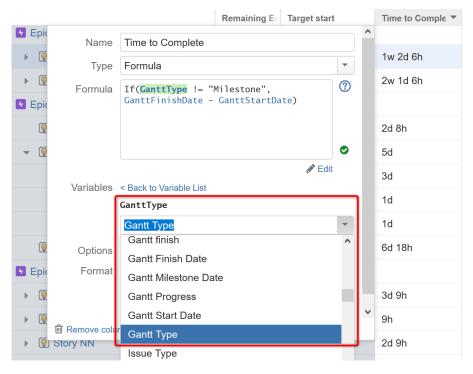


<sup>21</sup> https://wiki.almworks.com/display/structure/Automation

 $<sup>{\</sup>tt 22\,https://wiki.almworks.com/display/structure051/Customizing+Columns}\\$ 

## 4.8.2 Using Gantt Attributes in Formulas

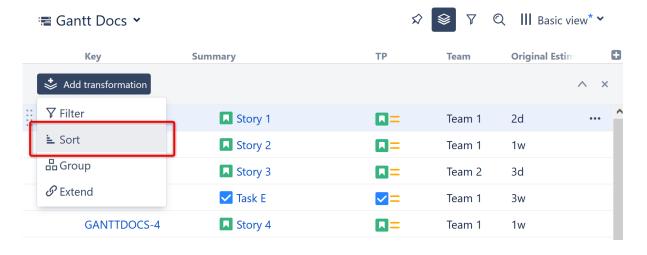
Structure. Gantt attributes can also be used in Structure formulas. Simply enter a new variable into your formula and assign it to the appropriate Gantt attribute.



To learn more about using formulas and variables in Structure, see Formula Columns<sup>23</sup>.

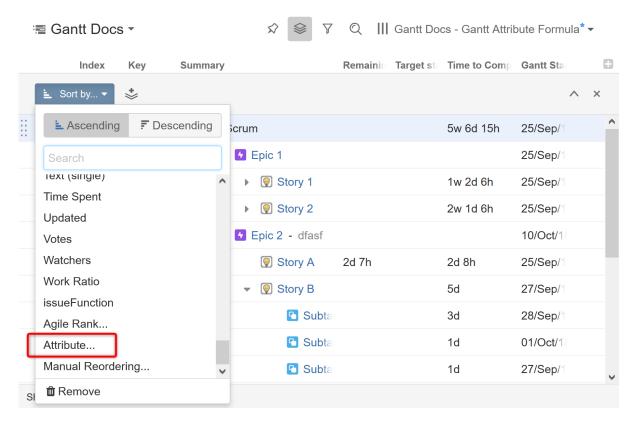
## 4.8.3 Using Gantt Attributes in Transformations

Using Transformations, you can sort items in your structure by their Gantt attributes. To do so, open the Transformations panel and select **Add Transformation | Sort**.

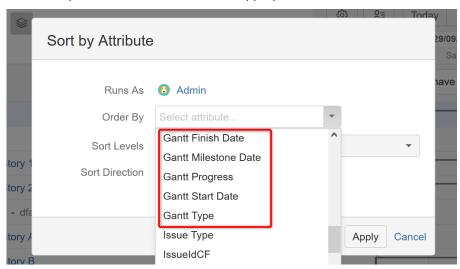


23 https://wiki.almworks.com/display/structure/Formula+Columns

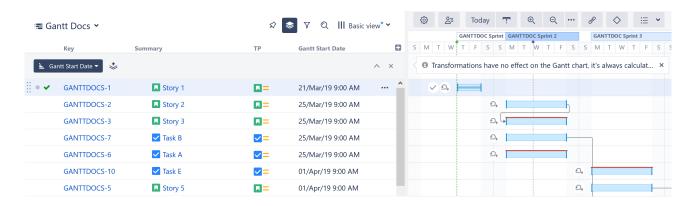
### In the **Sort by...** menu, select **Attribute...**



Use the drop-down or search to select the appropriate Gantt Attribute.



Once you click apply, your items will now be sorted accordingly.



✓ You can also group items by some Gantt attributes using the Group by | Text Attribute transformation.

### 4.8.4 Updating Jira With Effectors

Gantt attributes are only available within Structure. Gantt and Structure; however, it is possible to write Gantt values to Jira fields, using Structure Effectors<sup>24</sup>. This way, these values can be viewed and utilized by anyone, whether they have access to Structure or not.



Sorry, the widget is not supported in this export. But you can reach it using the following URL:

https://www.youtube.com/watch?v=oE1dSklL9D8

See Attribute to Issue Field Effector<sup>25</sup> for more information.

### 4.8.5 List of Gantt Attributes Available in Structure

The following Gantt Attributes can be used within Structure columns, formulas, transformations and Effectors. To learn more, see Using Gantt Attributes in Structure (see page 89).

Name	Result
Gantt Appearance	The color of the item in the Gantt chart. Most issues will return "blue" unless they are affected by a configuration slice(see page 121) with a custom color scheme.
Gantt Critical Path	Returns "Critical" if the item is part of the critical path.
Gantt Duration	The duration of the task within the Gantt chart.
Gantt Finish Date	The task's finish date.

<sup>24</sup> https://wiki.almworks.com/display/structure/Effectors

<sup>25</sup> https://wiki.almworks.com/display/structure/Attribute+to+Issue+Field+Effector

Name	Result
Gantt Fixed Duration	The task's fixed duration <sup>26</sup> , if the task has a fixed duration.
Gantt Leveling Delay	The delay applied to the task by resource leveling.
Gantt Manual Finish Date	If a task has a manual finish date, returns that date value.
Gantt Manual Milestone Date	If a task has a manual milestone date, returns that date value.
Gantt Manual Start Date	If a task has a manual start date, returns that date value.
Gantt Max Units	The maximum number of resource units that can be allocated for the task at any given time (see Configuration   Resources <sup>27</sup> ).
Gantt Milestone Date	If an item is visualized as a milestones(see page 61) within the chart, returns the milestone date.
Gantt Progress	The calculated progress <sup>28</sup> for the task.
Gantt Resource	The resource <sup>29</sup> assigned to the task.
Gantt Scheduling Error	If a scheduling conflict exists, returns "Error"
Gantt Scheduling Mode	Returns "Auto" if the task is automatically scheduled <sup>30</sup> , "Manual" if the task is manually scheduled <sup>31</sup> , "Agile" if scheduled by sprint(see page 32).
Gantt Slice	If the task's behavior or appearance is effected by a configuration slice <sup>32</sup> , returns the corresponding slice's name.
Gantt Start Date	The task's start date.
Gantt Type	How the task is displayed in the Gantt chart: task, group or milestone.
Gantt Work	The task's work estimate <sup>33</sup> (returned as a time value), based on the Gantt configuration.  If Work has been manually entered in the Task Details Panel <sup>34</sup> , returns this value.

<sup>26</sup> https://wiki.almworks.com/display/ganttmaster/Fixed+Duration

<sup>27</sup> https://wiki.almworks.com/display/ganttmaster/Resources

<sup>28</sup> https://wiki.almworks.com/display/ganttmaster/Progress

<sup>29</sup> https://wiki.almworks.com/display/ganttmaster/Resources+and+Resource+Usage

<sup>30</sup> https://wiki.almworks.com/display/ganttmaster/Automatic+Scheduling

<sup>31</sup> https://wiki.almworks.com/display/ganttmaster/Manual+Scheduling

<sup>32</sup> https://wiki.almworks.com/display/ganttmaster/Slice-based+Configurations

<sup>33</sup> https://wiki.almworks.com/display/ganttmaster/Work+Estimates

<sup>34</sup> https://wiki.almworks.com/display/ganttmaster/Task+Details+Panel

## 5 Settings and Configuration

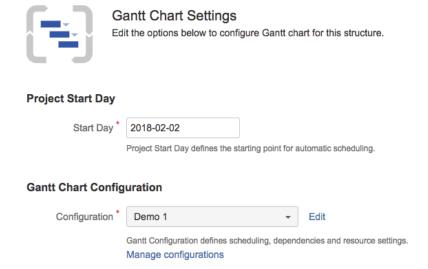
Structure. Gantt is a highly flexible app. It uses Structure and Jira data to build the chart, and it lets you configure most of the parameters that define the chart's behavior.

The following sections will walk you through configuring and customizing your Gantt chart(s) to fit your unique business needs.

- Gantt Chart Settings(see page 95)
- Gantt Configuration in Details(see page 98)
  - General Settings(see page 100)
  - Scheduling(see page 101)
    - Work Estimates(see page 101)
    - Progress(see page 103)
    - Manual Scheduling(see page 104)
      - Use Sprints for Manual Scheduling(see page 106)
      - Scheduling Precedence(see page 107)
    - Fixed Duration Attribute(see page 108)
    - Precision(see page 109)
    - Grouping(see page 109)
  - Dependencies(see page 111)
  - Resources(see page 114)
  - Calendars(see page 118)
- Slice-based Configurations(see page 121)
  - Creating a Slice(see page 122)
  - Customizing a Slice(see page 124)
  - Removing a Slice(see page 132)
  - Order of Operation(see page 132)
- Managing Gantt Configurations(see page 134)
  - Copy Configuration(see page 134)
  - Deleting Gantt Configurations(see page 136)
  - Charts and Configurations Permissions(see page 137)

## 5.1 Gantt Chart Settings

Gantt Chart Settings allow you to select how and which items are displayed within your Gantt chart. You can adjust your settings at any time by clicking the Gantt Chart Settings icon in the Gantt toolbar.



The **Project Start Day** is used as the starting point for automatic scheduling within your chart.

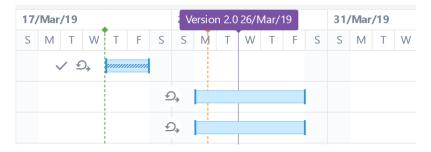
The Gantt Chart Configuration(see page 98) determines how items operate within your chart. This is where you set how scheduling, dependencies, and resources should work.

- If you are new to Structure. Gantt, we recommend starting with the **Default** configuration and modifying as necessary later.
- To make changes to an existing configuration, locate the configuration within the drop-down menu and click **Edit.**
- To build a new configuration, click **Manage configurations**.

To learn more about creating custom chart configurations, see Gantt Configuration in Details(see page 98).

### 5.1.1 Fix Versions

Structure. Gantt can also place markers at the top of your timeline to show Fix Versions.



To enable this feature, simply enter the projects you want to show fix versions from.

### **Fix Version Timeline Settings**

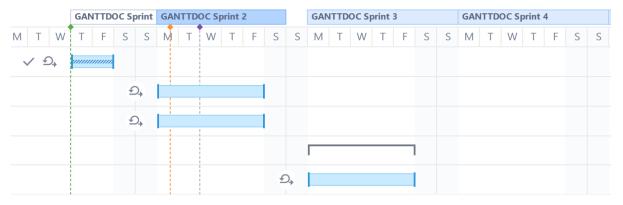


Fix Versions from the selected projects will be displayed on the timeline

in the event that the same version with the same release date is defined for multiple selected projects, those will be merged into one single Fix Version.

### 5.1.2 Sprints

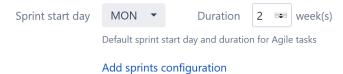
Structure. Gantt is able to visualize past, current and future sprints.



To configure future sprints, you need to specify:

- **Sprint start day** the day of the week your sprints usually start on
- Duration how long sprint lasts, in weeks

### **Sprints configuration**



### 5.1.2.1 Future Sprint Scheduling

The first future sprint is scheduled for the **Sprint start day** immediately following the end of the active sprint. If the active sprint ends on the same day of the week as the Sprint start day, Structure. Gantt will visualize the active sprint ending on the previous day.

Future sprints are scheduled for the specified duration, and each additional future sprint begins immediately following the previous.



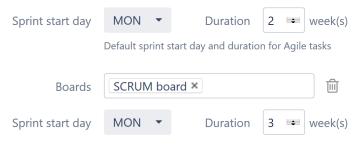
if there is no active sprint, Structure.Gantt will base future sprints on the Planned Finish Date of the latest closed sprint. If there are no closed sprints, future sprints will begin on the first Sprint start day following the Project start date.

On your chart, there may be a gap between the active sprint and the first future sprint, based on the specified Sprint start day and the planned finish date for the active sprint. This is done to keep your start days consistent.

## 5.1.3 Custom Sprint Schedules

You can also create custom schedules for sprints from specific boards. To add a custom schedule, click the Add sprints configuration link.

### **Sprints configuration**



Add sprints configuration

In the example above, any sprints from the SCRUM board will have a 3 week duration. All other sprints will use the default configuration (2 weeks).



If you have copied boards, make sure to assign all copies to the same custom configuration. See Same Sprint on Multiple Boards(see page 34) for more details.

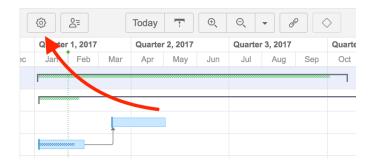
## 5.2 Gantt Configuration in Details

Using Gantt configuration, the chart properties you define can be stored, shared and reused for other charts.

A Default configuration is created the first time you run Structure. Gantt, allowing you to get started with Gantt charts right away. The default configuration works perfectly well for many users; however, we recommend going through the available options to better understand how the Gantt chart works and make sure you are using a configuration that best meets your needs.

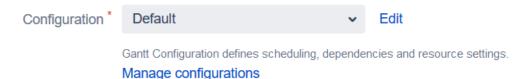
## 5.2.1 Changing Gantt Configuration

You can customize Gantt configuration during your initial chart setup or (if you are already working with your chart) by clicking the Settings button in the chart toolbar.

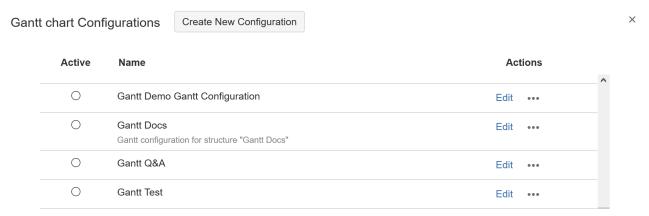


On the Gantt Chart Settings(see page 95) screen, look for the Gantt Chart Configuration section.

### **Gantt Chart Configuration**



You can quickly switch to another existing configuration by selecting it in the Configuration drop-down menu and clicking **Save Settings** at the bottom of the page. To make changes to a configuration, select it in the menu and click **Edit**. If you need to create a new configuration, or to see a complete list of your existing configurations, click **Manage configurations**.



The Gantt Chart Configurations list includes:

- Configurations you made These can be used in your chart, edited, and deleted (with some exception; see Deleting Gantt Configurations(see page 136) for more information).
- Shared configurations These can be used within your chart, but cannot be edited or deleted (with some exceptions; see Permissions(see page 137) for more details).

To edit one of the existing configurations, click the **Edit** link next to it. To create a new one, click the **Create New Configuration** button.

i To be able to create new configurations, you need to have permissions to create structures.

### 5.2.1.1 Customize a Configuration

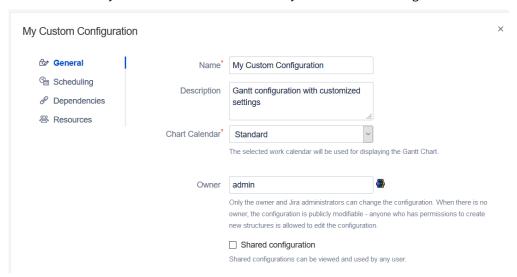
Gantt configuration has several important groups of properties. You can define all of them as you go through the Configuration dialog tabs:

- General Settings(see page 100)
- Scheduling(see page 101)
  - Work Estimates(see page 101)
  - Progress(see page 103)
  - Manual Scheduling(see page 104)
    - Use Sprints for Manual Scheduling(see page 106)
    - Scheduling Precedence(see page 107)
  - Fixed Duration Attribute(see page 108)
  - Precision(see page 109)
  - Grouping(see page 109)
- Dependencies(see page 111)
- Resources(see page 114)
- Calendars(see page 118)

Once you are happy with your configuration, click the Save button to save your configuration and select it in the Gantt Chart Settings(see page 95) to use it in your Gantt chart.

## 5.2.2 General Settings

In the General tab you define the basic elements of your Gantt chart configuration.



- **Name** We recommend giving your configuration a name that conveys its purpose or corresponds with the project you will be using it for.
- **Description** Enter a brief description of the configuration, so you and your users know when best to use it.
- Calendar Select the calendar to be used for displaying the chart to users. We'll cover this more in-depth in the Calendars(see page 118) section.
- **Owner** Only the owner and Jira administrators can change the configuration. When there is no owner defined, anyone who has permissions to create new structures is allowed to edit the configuration.

• **Sharing** - Check this box to share your configuration with other users. They will be able to see the configuration and use it in their Gantt charts, but they will not be able to modify the configuration in any way.

(i) If you share your configuration, and someone uses it in their Gantt chart, you may not be able to delete it. Additionally, shared configurations without a specified owner can be edited by anyone, which could result in changes to your chart. See Permissions(see page 137) for more details.

### 5.2.3 Scheduling

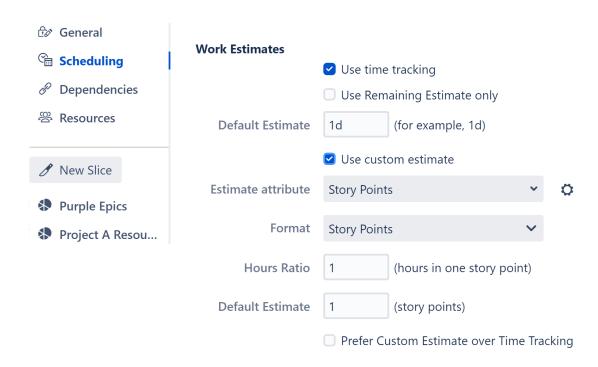
The Scheduling section of the Gantt configuration allows you to define how the Gantt chart works with task Start and Finish dates, duration and other parameters:

- Work Estimates(see page 101)
- Progress(see page 103)
- Manual Scheduling(see page 104)
- Fixed Duration Attribute(see page 108)
- Precision(see page 109)
- Grouping(see page 109)

#### 5.2.3.1 Work Estimates

In this section, you can configure how the work (effort required to complete the task) is determined.

### **Gantt Docs**



The work required for each task can be estimated using Time Tracking and/or another estimate attribute, such as Story Points, a text or numeric custom field, or even a formula.



⚠ Work estimates define the amount of work (or effort) required to complete a task. The exact duration of the task will depend on the amount of work, the resource assigned to the task and the calendar. Please see the Resource Management(see page 62) section for more details.

Using Time Tracking for Work Estimate

If **Use time tracking** is selected, work is estimated based on:

- Time Spent + Remaining Estimate, if work has been logged for the task.
- · Original Estimate, if no work has been logged.

Structure.Gantt will use this work estimate to determine the task's duration. If you adjust the task duration by changing the size of the task bar in the chart or editing the Work value in the Task Details Panel (see page 57), these fields are updated accordingly:

- Remaining Estimate will be updated, if work has been logged
- · Original Estimate and Remaining Estimate will be updated, if no work has not been logged



⚠ Changing the size of a task bar does not affect the work estimate for fixed-duration(see page 36) tasks. Additionally, it is not possible to change the size of a task bar for tasks scheduled by sprints(see page 32).

#### Use Remaining Estimate only

If the **Use Remaining Estimate only** option is selected, Structure.Gantt will base its work estimate only on the remaining work. If the Remaining Estimate reaches zero, the Default Estimate will be used, unless the "Treat zero duration tasks as milestones" option is enabled (see Grouping(see page 109)).

### **Default Estimate**

The Default Estimate value is used when no other work estimate values are available for a task, or when the work estimate equals zero.

#### Using a Custom Estimate

If your organization uses another method to estimate work (such as Story Points), select the **Use custom** estimate option and select the appropriate Estimate Attribute where those values are stored.

Structure. Gantt will use the values in this field to determine the work required for each task. If you adjust the task duration by changing the size of the task bar in the chart or editing the Work value in the Task Details Panel(see page 57), Structure. Gantt will update the value in this field.

#### Format

Select the format of the custom estimate (Story Points, minutes, hours, etc.). This allows Structure to correctly interpret the provided values.

#### **Hours Ratio**

If your custom estimate is in Story Points, select how many hours it should take to complete each Story Point. This is used to convert Story Points into hours and back, so tasks can be properly visualized on the timeline.

#### **Default Estimate**

The Default Estimate value is used when there is no value available for an issue, or the value is invalid.

### Using Time Tracking AND Custom Estimate

If you are working on a project where teams use both time tracking and a custom estimate (or you're in the process of migrating from one to the other), you can select both options.

When both are selected:

- 1. Structure.Gantt will first try to use time tracking values to determine the work estimate
- 2. If there is no time tracking information available for an issue, it will use the custom estimate instead
- 3. If neither are available, the Default Estimate will be used.

You can also switch this order, so that the custom estimate is used before time tracking, by checking the **Prefer Custom Estimate over Time Tracking** box.

Updating Work Estimates When Using Time Tracking and Custom Estimate

If you adjust the task duration by changing the size of the task bar in the chart or editing the Work value in the Task Details Panel(see page 57), Structure.Gantt will update the value of the preferred estimate only:

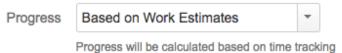
- Time Tracking values will be updated, if **Prefer Custom Estimate over Time Tracking** is unchecked
- Custom Estimate values will be updated, if Prefer Custom Estimate over Time Tracking is checked

If you remove the Work value from the Task Details Panel, both the Time Tracking and Custom Estimate values will be removed, and the Default Estimate will be used.

### 5.2.3.2 Progress

Structure.Gantt allows you to configure how progress for individual tasks and groups is calculated.

## **Progress Calculation**



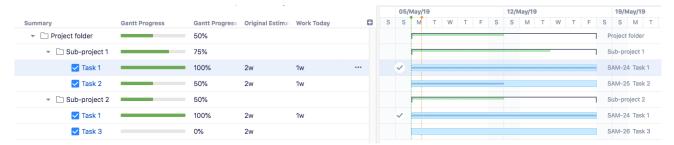
By default, progress is calculated using the same settings as Work Estimates(see page 101). In this case, progress will be calculated based on the values (Time Tracking, Story Points, etc.) you selected in the Work Estimates section.

If you prefer, you can specify a different field from Work Estimates or use a Formula(see page 103) for progress calculation.

(i) While using Time Tracking, tasks with non-empty resolutions are treated as 100% complete.

If using a Formula, it should return values from 0 to 100. All values higher than 100 will be treated as 100.

#### **Progress Calculation**



When Time Tracking is used, a task's progress is calculated in the following way:

- For non-finished tasks, progress is based on Work and Time Spent values. In the above example, **Task 2** has a progress of 50% (2 week Original Estimate / 1 week Time Spent).
- Tasks are treated as 100% complete if their resolution date is not empty.

When Story Points are used for work estimation, a task's progress is calculated in the following way:

- 0% progress is shown for any non-finished task.
- 100% progress is shown for any complete task (i.e. tasks with a non-empty resolution).

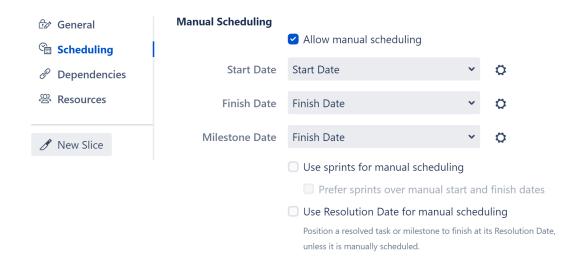
For groups, the progress is calculated as a total progress of all unique tasks within the group:

- Sub-project 1 has a total progress of 75%, the average between Task 1 (100%) and Task 2 (50%).
- Sub-project 2 has a total progress of 50%, the average between Task 1 (100%) and Task 3 (0%).
- **Project folder** has a total progress of 50%, the average of **Task 1** (100%), **Task 2** (50%) and **Task 3** (0%). Notice that Task 1 appears twice (under Sub-project 1 and Sub-project 2), but each task is only counted once when determining a group's progress.

### 5.2.3.3 Manual Scheduling

By default, Structure.Gantt will auto-schedule tasks based on your project start date, task estimates, predecessors and dependency types. If a task needs to be scheduled for a specific time or date, its start or finish date can be set manually using existing Jira data or by dragging the task to that date within the chart. This is referred to as Manual Scheduling.

In order to use manual start and finish dates within your chart, you need to enable Manual Scheduling and select the (date or date/time) fields that will store the manually set start, finish and/or milestone dates. If these fields already contain date values, Structure. Gantt will use these values to place tasks appropriately within the chart.



Once Manual Scheduling is enabled, you can adjust Start, Finish, and Milestone dates directly from your Gantt chart.

To learn more about manually scheduling from within your Gantt chart, see Scheduling Tasks(see page 28).



🛕 If one of the selected fields has Date type and the other one has Date/Time type, they both will be treated as Date.

### Read-Only values

Structure. Gantt allows you to adjust manual dates and/or work estimates simply by dragging and dropping task bars within your chart. Depending on which attribute you selected to represent these values, it may or may not be possible to update those values.

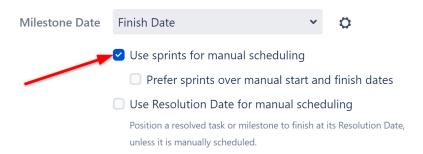
If you use a Formula to calculate a date, you will not be able to make manual updates to that date. In this case, Gantt configuration displays a "read-only" message near the field selector, and you receive an error if you try to drag a task to a new date within your chart.



if you select a custom field that is read-only (or becomes read-only), you will also receive an error message when dragging items within your chart.

### Use Sprints for Manual Scheduling

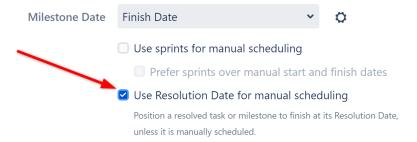
When the Use sprints for manual scheduling option is selected, tasks can be scheduled to begin and end based on sprint dates.



See Use Sprints for Manual Scheduling(see page 106) for more information.

#### Use Resolution Date as the Finish Date

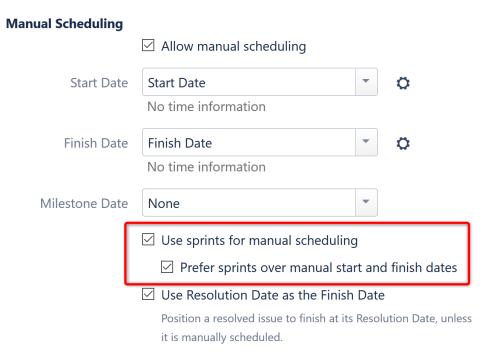
When this option is enabled, all resolved tasks and issue-based milestones(see page 61) that are not scheduled manually will be scheduled using their resolution date as the Finish Date.



This does not affect tasks with manually-scheduled Start or Finish dates, or manually-scheduled milestones - those items will continue to be scheduled based on the attributes selected above.

### Use Sprints for Manual Scheduling

When the **Use sprints for manual scheduling** option is selected, tasks can be scheduled to begin and end based on sprint dates.



When sprints are used for manual scheduling, tasks that are assigned to sprints will be scheduled for the duration of those sprints, based on current sprint dates and future sprint estimates(see page 97). The work for each task will be evenly distributed across its sprint duration. For more information about sprint-based scheduling, see Planning with Sprints(see page 32).

#### Prefer sprints over manual start and finish dates

If this option is selected, issues that are assigned to a sprint will automatically be scheduled based on the sprint. If this option is not selected, issues with manual Start or Finish dates will be scheduled based on those, regardless of their sprint assignment.

To learn more, see Scheduling Precedence(see page 107).

#### Scheduling Precedence

By default, tasks in Structure. Gantt are automatically scheduled (see page 29) based on the project start date, work estimates and dependencies. If Manual Scheduling is selected in the Gantt configuration (see page 98), tasks will be scheduled in the following manner, depending on the Manual Scheduling (see page 104) options:

### **Use sprints for manual scheduling AND Prefer sprints over manual start and finish dates** are selected:

- 1. If an issue is assigned to a sprint, it will be scheduled for the duration of that sprint, even if it has Start/Finish dates available
- 2. If an issue is not assigned to a sprint, it will be scheduled based on its Start/Finish dates
- 3. If no Start/Finish dates are available, the issue is resolved and **Use Resolution Date as the Finish Date** is selected, the issue will be scheduled based on its resolution date
- 4. Otherwise, the issue will be automatically scheduled

# **Use sprints for manual scheduling** is selected, but **Prefer sprints over manual start and finish date** is NOT selected:

1. If a Start or Finish date is available, the issue will be scheduled based on these, even if it is assigned to a sprint

- 2. If no Start or Finish date is available, but the issue is assigned to a sprint, the issue will be scheduled for the duration of that sprint
- 3. If the issue is not assigned to a sprint, is resolved and **Use Resolution Date as the Finish Date** is selected, the issue will be scheduled based on its resolution date
- 4. Otherwise, the issue will be automatically scheduled

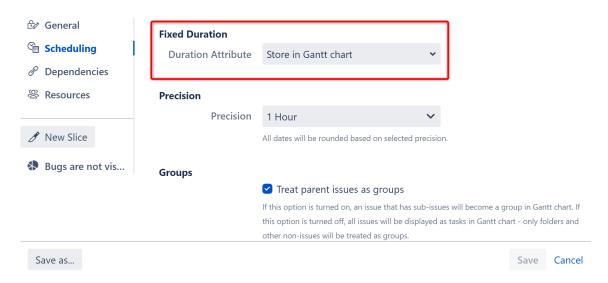
#### Use sprints for manual scheduling is NOT selected:

- 1. If a Start or Finish date is available, the issue will be manually scheduled based on these
- 2. If no Start/Finish dates are available, the issue is resolved and **Use Resolution Date as the Finish Date** is selected, the issue will be scheduled based on its resolution date
- 3. Otherwise, the issue will be automatically scheduled

#### 5.2.3.4 Fixed Duration Attribute

The Fixed Duration Attribute determines how fixed durations(see page 36) are assigned and stored. By default, Fixed Durations are stored in the Gantt Chart and can be manually set or updated using the Task Details panel(see page 57).

### Agile Gantt: SCRUM board

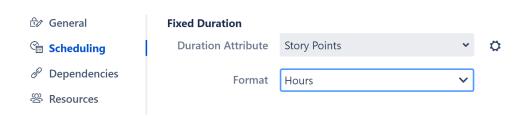


By changing the Duration Attribute, you can automatically assign fixed durations to tasks, based on a Jira attribute or formula.

#### **Format**

If you use a custom field or formula for the Duration Attribute, you can also specify the format of values in that field.

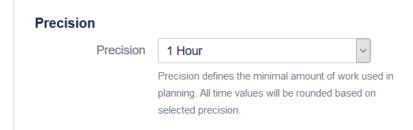
### Docs



This tells Structure. Gantt how it should interpret the values in the field (milliseconds, minutes, hours, etc.). You can also select **Text duration** to use Jira duration format (1d 3h 30m).

#### 5.2.3.5 Precision

Structure. Gantt allows you to define the precision used for scheduling and calculations. You can choose 1 minute, 1 hour or 1 day precision (1 hour is used by default).



Precision defines the minimum meaningful amount of work. All date, time and duration values in your chart are rounded according to the selected precision. When rounding for precision:

- · Start dates are rounded down
- · Finish dates and durations are rounded up

For example, with the default 1 hour precision, a duration of 15 minutes will be displayed in your chart as 1 hour. A Start Date of September 12, 2018 9:45 AM would be shown as September 12, 2018 9:00 AM.



Structure. Gantt rounds the value of Jira fields when doing calculations, but the field value itself is not updated.

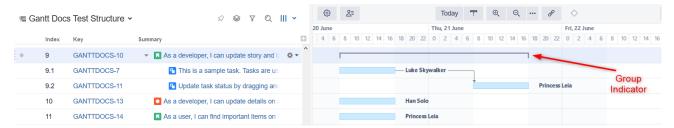
# 5.2.3.6 Grouping

Behavior allows you to change how certain tasks are represented in the chart.

- Treat parent issues as groups(see page 109)
- Treat tasks of zero duration as Milestones(see page 110)

#### Treat parent issues as groups

A group aggregates values from the tasks it contains, and its own values for manual start date, finish date or work estimation are ignored. You can configure your Gantt chart to show parent issues either as actual tasks or as groups (containers for tasks).



Structure. Gantt groups issues by default. To have your parent issues shown as actual tasks, on the Scheduling screen, under Groups, uncheck the "Treat parent issues as groups" checkbox.

#### **Behaviour**



If this option is turned on, an issue that has sub-issues will become a group in Gantt chart. If this option is turned off, all issues will be displayed as tasks in Gantt chart - only folders and other non-issues will be treated as groups.

☐ Treat tasks of zero duration as Milestones

Tasks with Estimate set to 0 or tasks with Fixed Duration set to 0 will be displayed as milestones

i If a parent issue contains non-issue items only (folders or Confluence pages), it will be shown as a task, regardless of the selected option.

#### Treat tasks of zero duration as Milestones

By default, Structure. Gantt considers tasks with an Estimate of zero as invalid and assigns the Default Estimate to those tasks (see Work Estimates(see page 101)). If you prefer, such tasks can be treated as Milestones(see page 61), making it clear that no time is required to complete them. To do so, check the "Treat tasks of zero duration as Milestones" checkbox.

#### Behaviour



If this option is turned on, an issue that has sub-issues will become a group in Gantt chart. If this option is turned off, all issues will be displayed as tasks in Gantt chart - only folders and other non-issues will be treated as groups.

☑ Treat tasks of zero duration as Milestones

Tasks with Estimate set to 0 or tasks with Fixed Duration set to 0 will be displayed as milestones

If this option is selected, Fixed Duration(see page 36) tasks with zero duration will also be treated as milestones. This includes:

- Tasks with '0' entered in the Fixed Duration field on the Task Details Panel(see page 57). (Entering zero is only allowed if "Treat tasks of zero duration as Milestones" is selected.)
- Manually-scheduled tasks with identical start and finish dates, if time is included in the date. (If only the date is used, without the time, these are considered one-day tasks.)

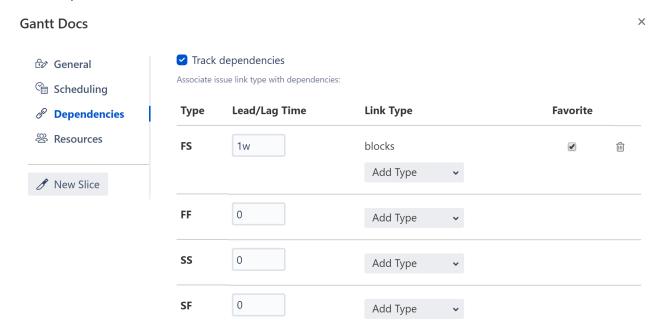


⚠ Tasks with no estimates set or incorrect estimate values will still be assigned the Default Estimate.

# 5.2.4 Dependencies

Structure. Gantt uses Jira issue links for working with dependencies between issues.

To create issue-to-issue dependencies, you first need to specify the link types you want to use for each dependency relationship.



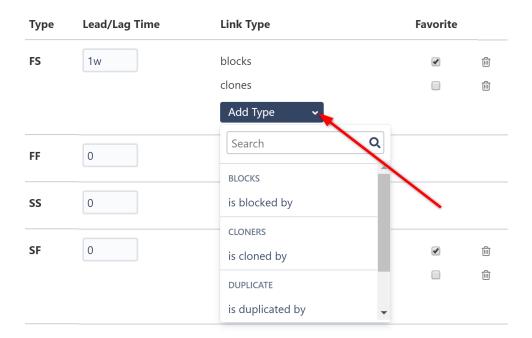
By default, Finish to Start (FS) dependencies are enabled with "blocks" link type. To learn more about the the available dependency types, see Working With Dependencies(see page 41).



⚠ If you have the BigGantt add-on installed, your default link type will be "has to be done before."

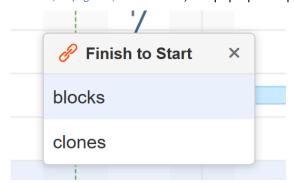
# 5.2.4.1 Adding Dependency and Link Types

You can use multiple dependency relationships and link types within your Gantt chart. To enable a new dependency and/or link type, click the appropriate Add Type button and select the link type you want to use.



All of the options you select here will be available to you when you create a link using the link button in the toolbar.

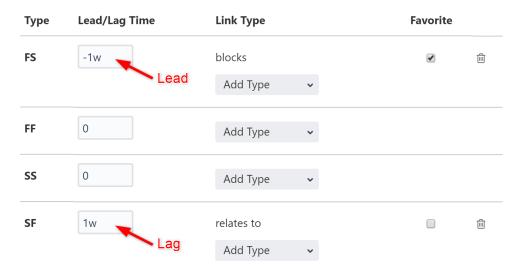
When you create a link by dragging one task bar to another, Structure. Gantt creates a Finish to Start dependency by default. If you have more than one link type associated with Finish to Start dependencies, the one marked as favorite (see page 113) will be used, or a pop-up will appear for you to select the appropriate type.



# 5.2.4.2 Lead/Lag Time

By default, dependency transitions happen immediately. For example, in an FS dependency, the second item in the dependency starts as soon as the first item finishes. If you need to delay a start/finish or begin it early, you can configure a lead/lag time for each dependency type.

- To set a lead time, input a negative number.
- To set a lag time, input a positive number.



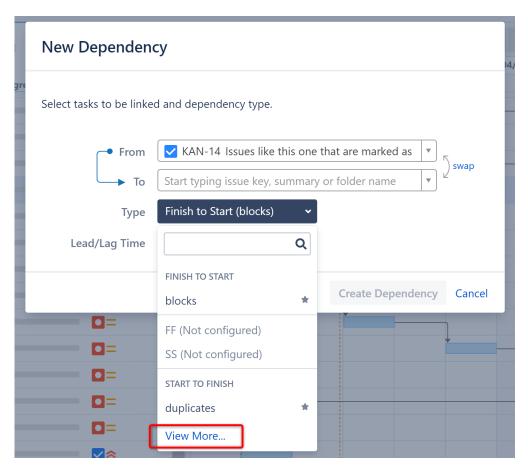
To learn more, see Dependency Lead/Lag Time(see page 44).

#### 5.2.4.3 Favorite

You can specify a default link type for each dependency type by checking the appropriate **favorite** box.



The "favorite" link types for each dependency type will be displayed in the Type drop down menu when using the New Dependency Menu. To see additional link types, click the **View more...** link.



If you don't have any favorites configured, all link types will be shown.

When you add a dependency within your chart, Structure.Gantt creates a link of the corresponding link type between the two issues. See Working With Dependencies(see page 41) for more information about creating dependencies within a Gantt chart.

Structure.Gantt also supports dependencies between other types of items, such as folders and pages, but these are stored within Gantt itself.

## 5.2.5 Resources

In the Resources section of the Gantt configuration you can configure the way resources are assigned to tasks and the default settings for resources.



This article covers resource assignment and setting default values for resources and tasks. To learn more about managing resources within your Gantt chart, see Resource Management(see page 62).

# 5.2.5.1 Resource Assignment

You can assign resources to issues using a Jira field (including text, list and user fields) or a Structure attribute, such as a value calculated through Formulas<sup>35</sup>.

Here are a few common examples of resource assignments:

- To use each task's assigned user as its resource, select Assignee.
- To use teams as resources, create a text custom field called "Teams" and populate it with team names accordingly. Structure. Gantt will automatically merge similar values.
- You can also combine these using a simple formula<sup>36</sup>: "Assignee OR Team". If there is an Assignee for an issue, Structure will use that field. Otherwise, it will use the Team. (If you want to default to Team instead, switch the order of your formula: "Team OR Assignee".

By default, "None" value is selected.



## 5.2.5.2 Default Resource Settings

In order to correctly allocate resources and place that information within your Gantt and Resource Usage charts, Structure. Gantt needs to determine the following parameters for each resource:

- **Units** Defines the "size" of a resource. By default, the value is 1, which corresponds to 1 person. If you use teams as resources, and each team has 5 people able to use all available time to work on tasks, you would enter 5.
- Time Zone Defines the default time zone of the resources.

<sup>35</sup> https://wiki.almworks.com/display/structure/Formula+Columns 36 https://wiki.almworks.com/display/structure/Formula+Columns

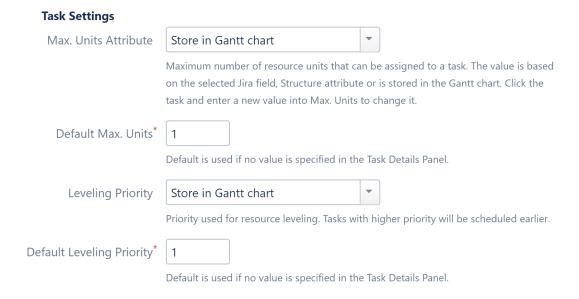
• Work Calendar - Defines the default working and non-working hours for the resource.

# Units\* 1 Units value of a resource defines how much work can be done by that resource over a fixed amount of time. Typically, Units equals to the number of people represented by the resource. Time Zone (GMT+03:00) Moscow For user resources, the user's time zone is used as the default, regardless of this setting. Individual user's time zone can still be adjusted in the Resource Settings dialog. Work Calendar\* 40 hours per week

Default values will be used when a resource does not have its own values specified or when no resource is provided. These values can be overwritten for individual resources, through Resource Settings. See Resource Management(see page 62) for more information.

## 5.2.5.3 Task Settings

Task settings allow you to configure Maximum Units and Leveling Priority.



#### **Max. Units Attribute**

Maximum Units defines the maximum number of resource units that can be allocated for a task. For example, if you set the default Resource Units (above) to 5 and the Maximum Units for a task to 1, that task won't be able to use more than 1/5 of a resource's capacity.

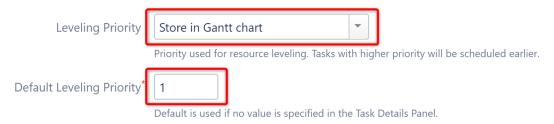
Max. Units Attribute allows you to select where the Maximum Units values are stored. You can choose a Jira field, Structure attribute or the Structure. Gantt database. Once selected, the Maximum Units value for each task can be set or updated using the Task Details panel (see Gantt Chart Elements(see page 50)). If a Jira field or Structure attribute is used, you can also update the maximum units for a task directly in your structure, by adding the appropriate column to your view.

#### Default Max. Units

This default value will be used when a task does not already have a maximum units value set.

#### **Leveling Priority**

Leveling Priority allows you to prioritize certain tasks when using the Resource Leveling (see page 72) feature in Structure. Gantt. When tasks need to be moved due to overallocation, those with higher priorities will be placed earlier in the timeline.

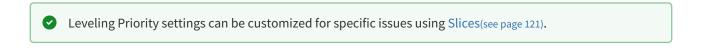


You have the following options for assigning Leveling Priority:

- **Store in Gantt chart** If this default option is selected, all tasks are assigned the Default Leveling Priority, unless a unique value is entered in the Task Details Panel (see page 57).
- **Standard Attributes** Priority can also be assigned based on an attribute, such as a custom field, Jira Rank, Story Points or Structure Index<sup>37</sup> (in this case, the leveling priority is calculated as `maximum structure index current item index`).
- Formula Using Structure formulas<sup>38</sup>, you can create custom calculations to determine the priority for each task
- Used in Columns You can also assign priorities based on an existing Structure column.

Once priorities are assigned:

- If no values are provided for a task, the Default Leveling Priority is used.
- You can override a task's assigned priority using the Task Details Panel(see page 57). If you're using a Jira field for priority, the value of that field will also be updated. If you're using a formula, the new value will simply be stored in the Gantt chart.



<sup>37</sup> https://wiki.almworks.com/display/structure/Sequential+Index+Column 38 https://wiki.almworks.com/display/structure/Formula+Columns

## 5.2.6 Calendars



#### Please bear with us as we improve this feature.

At the moment, there is no good user interface for editing calendars. We are going to ship it in future versions.

Currently, if you need to define a calendar, please refer to the technical documentation about JSON format or write us to support@almworks.com<sup>39</sup> so we can help you.

Structure. Gantt allows you to define different calendars for the following:

- Gantt chart itself(see page 100)
- Default resource(see page 114) calendar
- Individual resource(see page 62) calendar

This is especially useful when you need more precise planning for resources working on different schedules.

Schedules are defined as Calendars, and Structure. Gantt comes with two predefined calendars: "Standard" (40hour work week, 9-17 every workday) and "24 Hour", with all time marked as working time.

Jira administrators can also define additional calendars using the **Administration | Structure | Structure.Gantt |** Work Calendars page.

#### 5.2.6.1 Calendar format

A calendar is defined by a code in JSON format, which sets the working periods for each day of the week and lists exceptions.

#### Basic structure

Every calendar consists either of a week schedule or list of exceptions, or both:

```
{
  "week": ...,
  "exceptions": ...
```



All calendar definitions should be wrapped in curly braces: {}

### Week schedule

Week schedule is defined by specifying work ranges for every weekday (monday, tuesday, wednesday, thursday, friday, saturday, sunday):

39 mailto:support@almworks.com

```
"week": {
      "monday": [
        {
          "start": 900,
          "finish": 1300
        },
          "start": 1400,
          "finish": 1715
        }
      ],
      "tuesday": [
        {
          "start": 900,
          "finish": 1300
        },
          "start": 1400,
          "finish": 1715
        }
      ]
}
```

Time is written using HHMM format, where HH is hour (0-24) and MM is minutes, for example: `1730` for 17:30 (5:30 pm) and `930` for 9:30.

You may skip a weekday either by skipping its definition completely or providing an empty list of ranges:

```
{"monday": []}
```

## Exceptions

Exceptions are defined for exact dates:

```
"exceptions": [
      {
        "date": 20170301.
        "workPeriods": []
      },
        "date": 20170305,
        "workPeriods": [
       {
         "start": 900,
         "finish": 1300
       },
       {
         "start": 1400,
         "finish": 1715
       }]
]
```

Dates are written using YYYYMMDD format, where YYYY is a 4-digit year, MM is a month (1-12) and DD is a day (0-31).

The workPeriods parameter can be empty, which means it is a day off, or can contain custom start and finish times, which will override the times you have defined in the main scheme.

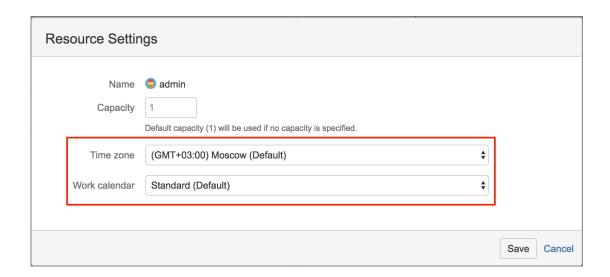
#### Hierarchy

You can also organize calendars into a hierarchy via the "Based on" property, so you can create more specific calendars, based on a general calendar ("Standard", for example).

in this case, existing calendar-week schedule values are overridden (i.e. the definition for "wednesday" in a child calendar will override the "wednesday" schedule of its parent calendar).

#### Time zones

Calendars don't have time zone information and should be written in your local time. Time zones are provided separately and are taken either from the current user profile TZ (for the Gantt chart, configured at the User Profile page) or from default or individual resource settings:



#### **Deleting Calendars**

Calendars can be deleted (even the ones that are used by other calendars as Based On or by Gantt charts). Gantt will continue to work properly, even if a specified calendar cannot be found: a hard-coded calendar definition, similar to a default version of "Standard" calendar, will be used. However, this is not normal and should be fixed.

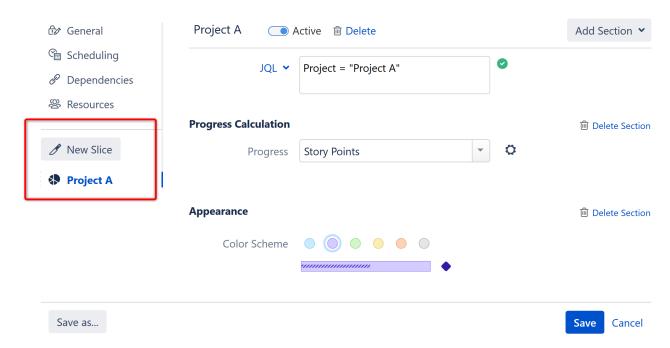
A Gantt info popup will show a warning as soon as the Gantt calendar becomes unavailable.

For a resource calendar issues, there is no notification shown.

# 5.3 Slice-based Configurations

In addition to your general settings, you may have specific situations or issue types that require unique scheduling or dependency rules. It may be helpful to color-code issues from different projects or exclude some issues from your chart completely. The slice feature allows you to do just that.

#### **Gantt Docs**



Slices allow you to fine-tune your chart's configuration for a specific set of issues. When you create a slice, you tell Structure. Gantt to override the default configuration for certain issues, using new configuration rules that you establish for that slice.

Here are some examples of how "slices" can help you further customize your chart:

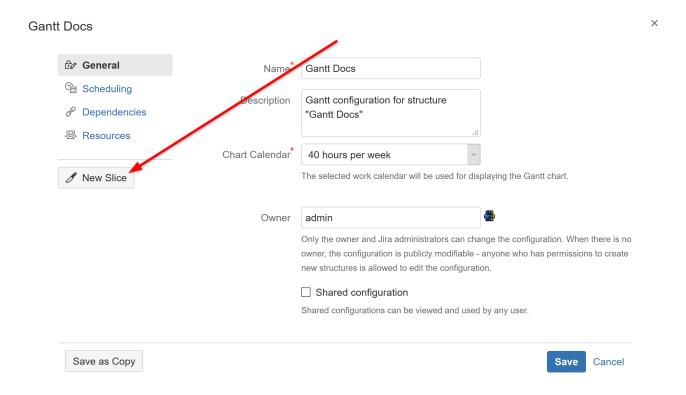
- · Establish unique scheduling rules based on a JQL query
- Assign a unique bar color to specific projects or issue types
- Exclude small sub-tasks that have no impact on the schedule
- Set unique dependency configurations for different projects

The following articles will show you how to create a slice, define which issues the slice should be applied to and customize the configuration for the slice.

- Creating a Slice(see page 122)
- Customizing a Slice(see page 124)
- Removing a Slice(see page 132)
- Order of Operation(see page 132)

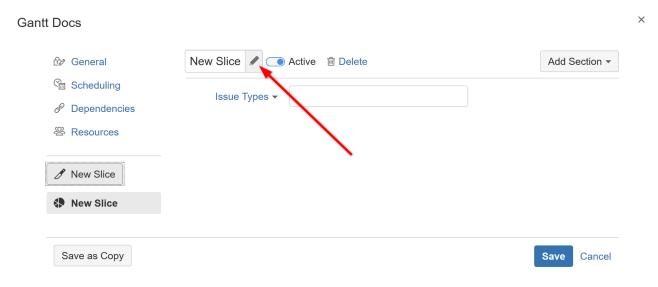
# 5.3.1 Creating a Slice

To create a new slice, open the Gantt chart configuration you want to apply the slice to, and click the **New Slice** button.



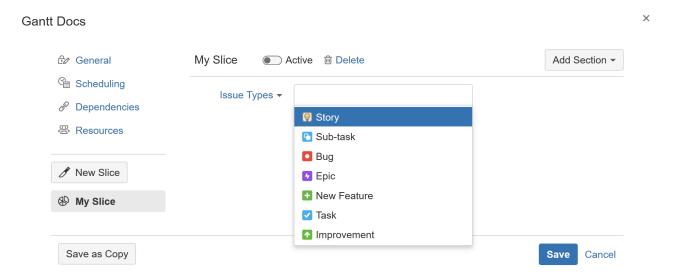
## 5.3.1.1 Slice Name

All new slices are named "New Slice" by default. To give your slice a custom name, click the current name or the edit icon beside it.



# 5.3.1.2 Assigning Issues

You can assign issues to a slice by selecting specific issue types or with a JQL query.



When creating your chart, Structure. Gantt will search for the issue types you specify (or those issues that match your JQL query) and apply the custom settings you configure in your slice, before applying your default settings to the rest of your issues.



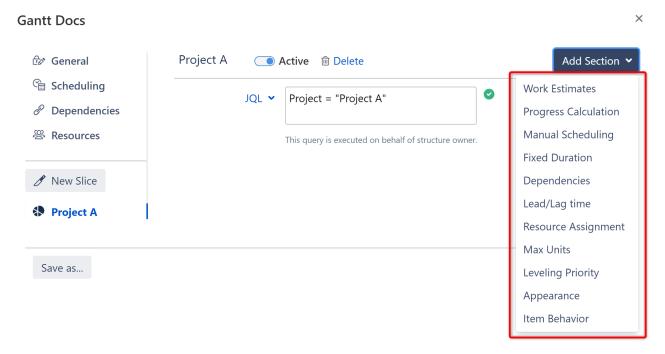
#### JQL Limitations

JQL queries should be based on issue properties.

Queries that rely on time comparisons, time-based functions – now(), endOfDay(), startOfDay(), endOfMonth(), etc. – or other variables that could change independent of issue changes, may not work properly with Slices, and should be avoided.

# 5.3.2 Customizing a Slice

Once you've chosen the items to include in a slice (based on Issue Type or a JQL query), you can adjust various aspects of their appearance or behavior by clicking the Add Section menu and selecting the properties you want to customize.



The following properties can be customized for each slice:

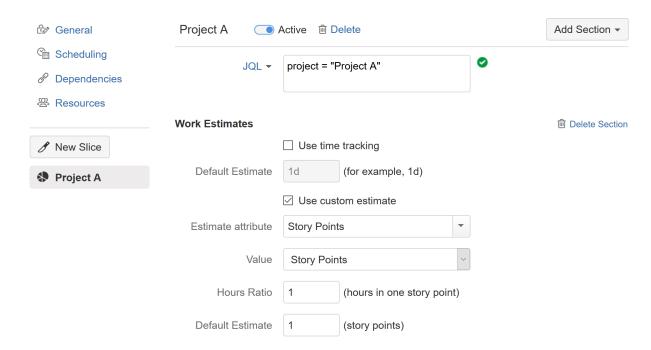
- Work Estimates(see page 125)
- Progress Calculation(see page 126)
- Manual Scheduling(see page 127)
- Dependencies(see page 127)
- Lead/Lag Times(see page 128)
- Resource Assignment(see page 129)
- Task Settings(see page 130)
- Appearance(see page 130)
- Item Behavior(see page 131)

(i) You can include as many or as few sections in your slice configuration as you need. If you do not specify a custom property within your slice configuration, the default configuration will be used.

#### 5.3.2.1 Work Estimates

By updating this section, you can apply custom work estimates to any issues matching your slice criteria.

#### **Gantt Docs**



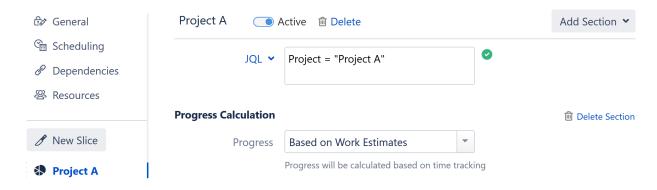
In the example above, time estimates for issues in "Project A" will be calculated based on Story Points, regardless of what the default configuration is for other projects.

To learn more about setting work estimates, see Work Estimates(see page 101).

## 5.3.2.2 Progress Calculation

You can specify a unique method of progress calculation for issues within the slice.

#### **Gantt Docs**

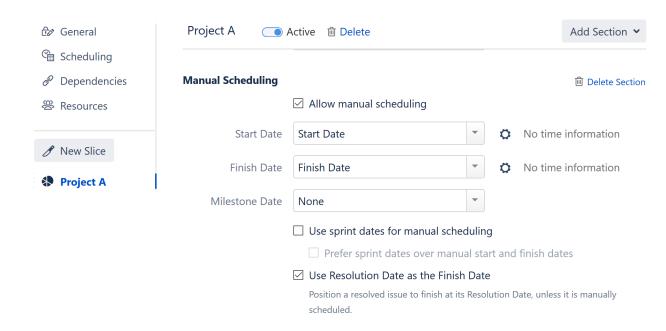


For more information about configuring progress calculation, see Progress(see page 103).

# 5.3.2.3 Manual Scheduling

The Manual Scheduling section allows you to override the default scheduling configuration. This can be useful if you have multiple fields for scheduling information or need to prioritize different scheduling methods (automatic(see page 29), manual(see page 104) or sprint-based(see page 32)) for different sets of issues.

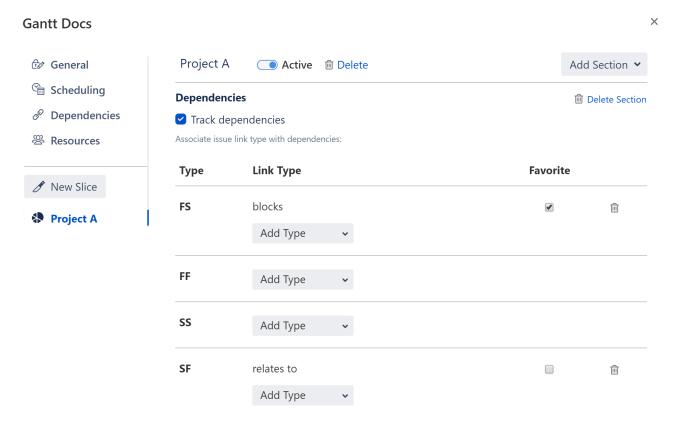
#### **Gantt Docs**



To learn more about manual scheduling, see Manual Scheduling(see page 104).

# 5.3.2.4 Dependencies

You can set up custom link types to be used with each type of dependency within your slice. To set a default link type for a dependency type, check the **Favorite** box.



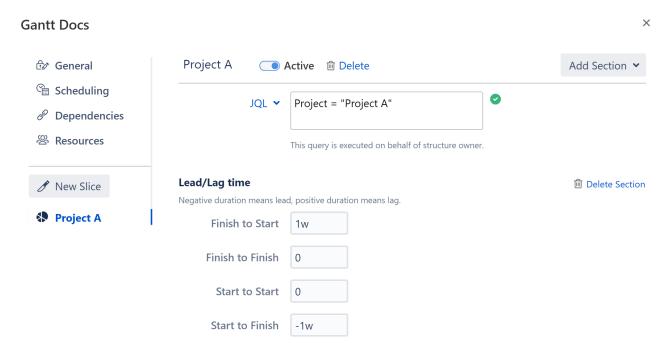
To learn more about using dependencies, see Working with Dependencies. (see page 41) To learn more about configuring dependencies, see Dependencies(see page 111).



⚠ If you are linking two issues with different dependency link types (because one or more issue is part of a slice), the link types of the originating issue will be used.

# 5.3.2.5 Lead/Lag Times

You can also set up custom Lead or Lag times for each dependency type within your slice.



To learn more, see Dependency Lead/Lag Time(see page 44).

If you are linking two issues with different lead/lag times (because one or more issue is part of a slice), the link types of the originating issue will be used.

# 5.3.2.6 Resource Assignment

You can set a unique resource attribute, which is used to assign resources to tasks.

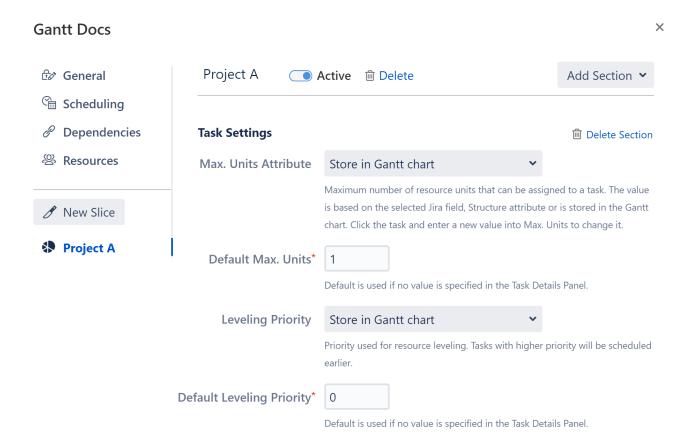
#### **Gantt Docs**



To learn more about resource assignment, see Resources(see page 114).

# 5.3.2.7 Task Settings

Task Settings allows you to specify how resources are allocated for tasks and set custom leveling(see page 72) priorities.



To learn more about task settings, see Resources(see page 114)

## 5.3.2.8 Appearance

You can create a custom color scheme for each slice, under the **Appearance** section.

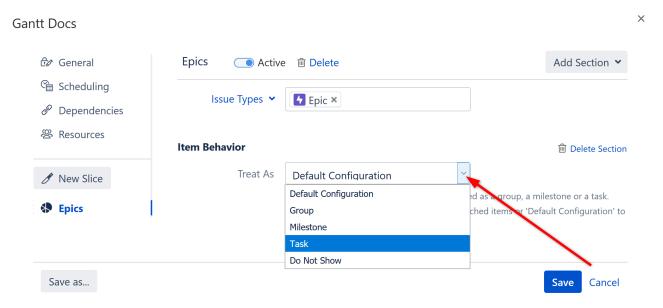


The color scheme you select will be applied to all issues or milestones that match the slice criteria.

i Slices are the only way to set up custom color schemes.

#### 5.3.2.9 Item Behavior

Item Behavior allows you to specify the type of item an issue will be displayed as within your Gantt chart.



You can choose from the following options:

- **Default Configuration** If this option is selected (default), issues matching the slice criteria will be displayed based on the default configuration.
- **Group** This will display matching issues as groups(see page 124), containing all their sub-issues.
- **Milestone** This will convert matching issues into milestones and place them in the chart at their Due Dates. Note: The Due Date will be calculated automatically, unless one is manually set.

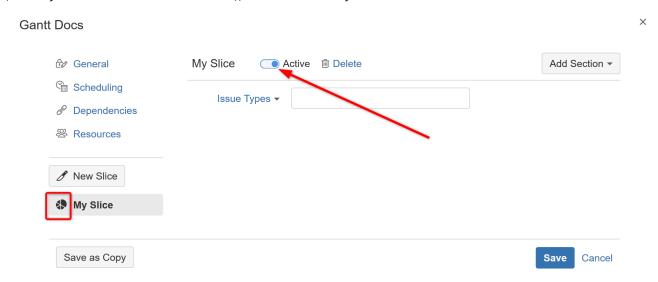
- **Task** This will display matching issues as task bars. This can be useful if you have selected Grouping for your general configuration and want to display specific parent issues as task bars instead of groups for example, you may want to display Epics as task bars, but Stories with sub-issues as groups.
- **Do Not Show** This will remove the issues from your Gantt chart.

# 5.3.3 Removing a Slice

You can remove a slice from your configuration by deactivating it or deleting it.

# 5.3.3.1 Deactivating a Slice

You can turn a slice on or off with the **Active** toggle next to the slice name. Inactive slices will remain in your slice list (in case you want to reactivate them later), but will not affect your Gantt chart.



When a slice is active, the pie icon beside its name is filled in . When the slice is inactive, the pieces are empty

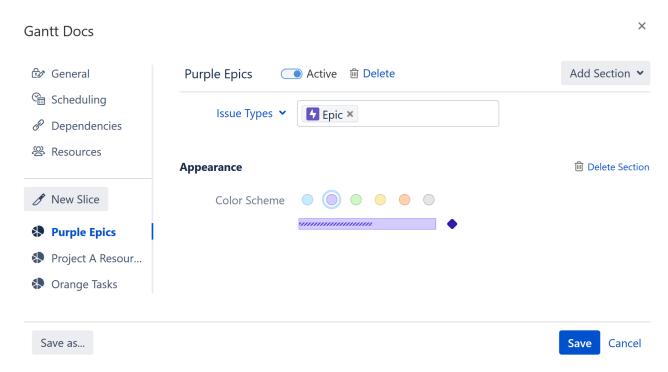
## 5.3.3.2 Deleting a Slice

To delete a slice, click the trashcan icon or the **Delete** text beside it.

# 5.3.4 Order of Operation

If you have more than one slice created for a configuration, Structure. Gantt will apply slices in the order they appear, from top to bottom.

Once a slice has been applied to an issue, no other slice can affect it. If you need to apply a different slice first, move it up within the list.



Let's look at an example. We have three slices:

- Purple Epics makes all epics appear purple.
- Project A Resources specifies that for issues in Project A, the Team attribute should be used for assigning
  resources.
- Orange Tasks makes all tasks orange.

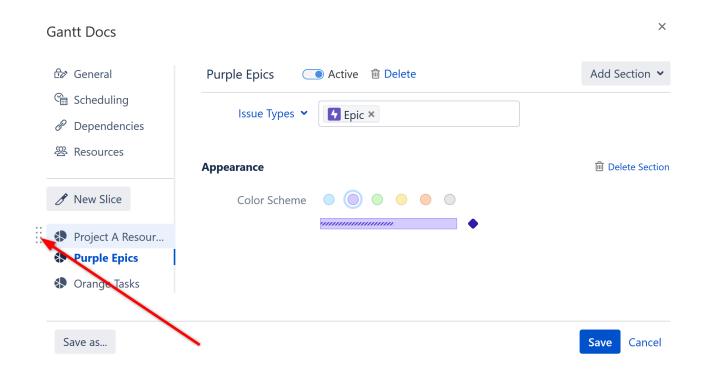
In your chart, the following will occur:

- 1. All epics will appear purple.
- 2. The remaining issues from Project A will be assigned resources based on the Team attribute. Since the Purple Epics slice was already applied to the epics in Project A, this slice will not affect them epics from Project A will be assigned resources based on the standard resource configuration.
- 3. All tasks, except those from Project A, will appear orange. Tasks from Project A will appear the default color, because the previous slice was already applied to them.

If you need a specific slice applied first, move it up the list. For example, to use the Team resource attribute for Project A epics, you would have to move the Project A Resources slice above the Purple Epics slice. If you wanted Project A tasks to be orange, you would need to move the Orange Tasks slice up.

## 5.3.4.1 Rearranging Slices

To move a slice up or down within your list, use the Drag Bar next to the slice's name.



# 5.4 Managing Gantt Configurations

- Copy Configuration(see page 134)
- Deleting Gantt Configurations(see page 136)
- Charts and Configurations Permissions(see page 137)

# 5.4.1 Copy Configuration

If you need two or more similar (but different) configurations, you can start by creating a copy of an existing configuration.

# 5.4.1.1 Create an Exact Copy

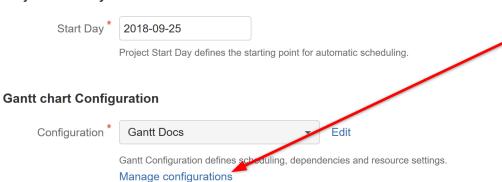
If you want to create an identical copy of an existing configuration, open the Gantt Chart Settings (see page 95)screen and click **Manage configurations**.



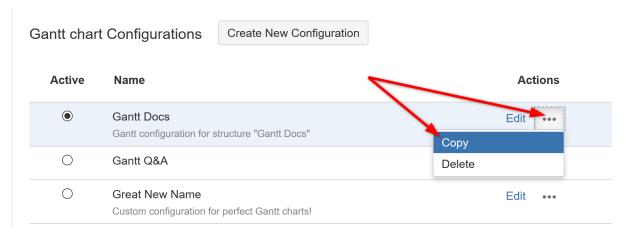
# **Gantt chart Settings**

Edit the options below to configure Gantt chart for this structure.

#### **Project Start Day**



Find the configuration you want to copy, open it's Actions menu (...) and select **Copy**.

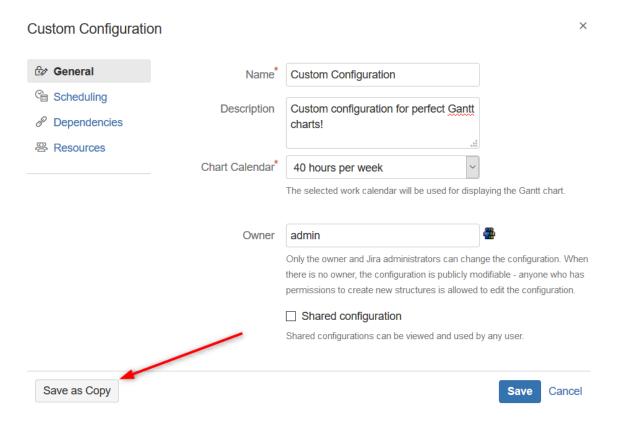


This will create an exact copy of the original configuration, which you can rename and customize as necessary, without affecting the original.

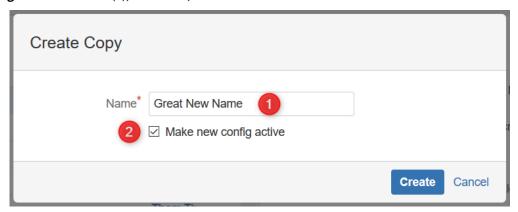
## 5.4.1.2 Create a Copy with Changes

You can also open an existing configuration, update it and save your changes as a new configuration.

To do this, open the original configuration in Gantt configuration(see page 98) and make any necessary changes. Instead of clicking the **Save** button, click **Save as Copy**.



Give the new configuration a unique name (1). If you want to switch to the new configuration, check the **Make new config active** checkbox (2); otherwise, leave it blank.



Any changes you made from the original configuration will now be part of the new configuration. The original configuration will remain unchanged.

# 5.4.2 Deleting Gantt Configurations

You can delete an existing Gantt configuration from the Manage Configurations dialog (see Gantt Configuration in Details(see page 98)).

To delete a configuration:

- You must be the owner of the configuration or a Jira administrator
- You must have Control access to all the structures that are using the configuration

• If the configuration is in use, you will need to select a replacement configuration before deleting it

(i) When replacing an in-use configuration, the replacement configuration must have the same visibility as the one being removed. For example, you can only replace a *public* configuration with another *public* configuration.

# 5.4.3 Charts and Configurations Permissions

#### 5.4.3.1 User Permissions

Currently there are no dedicated permission settings in Structure. Gantt. The chart has the same permission settings as the structure it is based on.

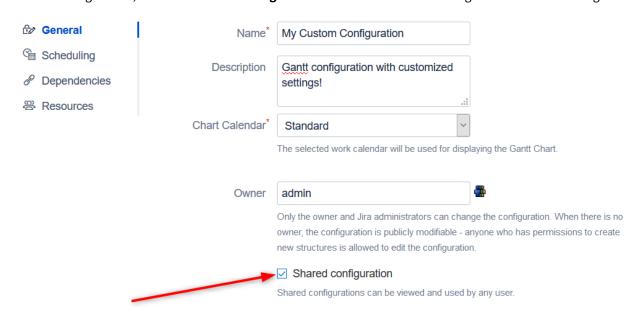
- Users with View access level can only view the Gantt chart.
- Users with Edit access level can work with the task bars in the chart and make changes.
- Users with the Structure Control access level can change the Gantt Chart settings and manage Gantt configurations.

All standard Jira permissions are applied – you need Edit Issues permission to change fields, create links, and so on.

## 5.4.3.2 Sharing Configurations

Gantt Chart configurations have their own permissions logic. By default, the configurations you create are not shared with anyone else, so they are not visible in the available configurations list for other users. If you use a non-shared configuration to build a chart for a shared structure, other users will still be able to work with the chart (based on the structure permissions), but will not be able to see this configuration.

To share a configuration, check the **Shared configuration** box under the Gantt configuration General settings.



Once shared:

- The configuration will be visible to all users in the read-only mode.
- If there is no owner specified, any user will be able to edit the configuration.
- If you want to delete a configuration which is used in at least one chart, you will need to select another configuration to be used in its place. See Deleting Gantt Configurations(see page 136) for more details.

i Jira admins can see and edit all configurations.

# 6 Administrator's Guide

- System Requirements and Installation(see page 139)
- Enterprise Deployment(see page 139)
- Confluence Configuration for Gadgets(see page 140)
- Resource Leveling Troubleshooting(see page 141)
- Advanced Configurations for Structure.Gantt(see page 141)

# 6.1 System Requirements and Installation

Structure.Gantt is an extension for Structure for Jira. In order to use Structure.Gantt, Structure must also be installed on your Jira instance.

- To learn more about Structure for Jira, visit us on the Atlassian Marketplace<sup>40</sup>
- For specific version requirements, see our Release Notes(see page 151)
- Both apps can be installed via the App Manager, or by visiting our Structure<sup>41</sup> and Structure.Gantt(see page 146) download pages

# 6.2 Enterprise Deployment

## 6.2.1 Performance

Structure. Gantt is a fairly complex product that works on top of Jira and Structure platforms. It is also a very flexible product, just as Structure app is, so a lot of choices can be made by the user – like how much data is in one Gantt chart and where this data comes from.

Therefore, the performance impact of using Structure. Gantt depends on a number of factors:

- The number of issues in the structure (the single most important factor).
- Using Jira's calculated fields as the source of attributes (for example, Start Date). This is rarely the case, but it may have massive performance impact.
- Structure.Gantt CPU, memory footprint and its optimizations.
- Structure and Jira performance.
- · Lucene index performance.
- Database performance (simple data retrieval queries).

Performance impact from a single Gantt Chart does not depend on the total number of issues in JIRA, total number of Gantt charts, or total number of users. The amount of consumed memory will depend on the number of concurrent users working with Structure. Gantt and with Structure, as the products maintain caches of per-user data.

#### 6.2.1.1 Performance Target: 10,000 issues

As of version 1.0, we are targeting Structure.Gantt to work well on configurations with 10,000 issues in one structure / Gantt chart. Such configurations show a reasonable amount of CPU and memory impact, as well as good responsiveness for end-users.

<sup>40</sup> https://marketplace.atlassian.com/apps/34717/structure-project-management-at-scale?hosting=server&tab=overview 41 https://wiki.almworks.com/display/structure/Download

We are also testing Structure. Gantt on structures with 100,000 issues. At the moment, we do not recommend having such large configurations, as the recalculation of the Gantt Chart may take up to 30 seconds, during which Structure. Gantt extracts a lot of information from the Jira database and Lucene index.

# 6.2.1.2 Testing for Potential Impact

When testing Structure. Gantt for potential performance impact, watch out for the following indicators.

- · Memory consumption, which may be influenced by the Gantt configuration
- Frequency of Lucene index queries
- Frequency of database retrieval queries

# 6.2.2 Security and Data Access

When developing Structure and Structure. Gantt, we follow the best practices and respect the settings that are configured in Jira.

- Jira permissions are respected. All changes that are made through Structure. Gantt are executed in the context of some Jira user account, and with respect to that user's permissions. For example, if a user does not have permissions to create issue links, that action will not be possible through Structure. Gantt.
- Jira issue security and browsing permissions are respected. If a user does not have the permissions to see a particular issue, they will not be able to see it in Structure.Gantt.
- Application security is continuously checked to make sure our products do not introduce XSS or other vulnerabilities to Jira.

# 6.2.2.1 Caching of Issue Access

For the sake of performance, Structure and Structure. Gantt cache the results of access checks (whether a particular user has access to a particular issue). The cache is invalidated if the issue is changed and every 5 minutes. The cached result can potentially be used when some other factor has changed and the access has changed as well.

This means that if a user *gains* access to an issue through any means other than setting the issue's Security Level, Structure apps might still hide that issue from the user for up to 5 minutes. The same happens if the user *loses* access – Structure apps may still show that issue's data for up to 5 minutes.

# 6.2.3 Limiting Access to Gantt Charts

Structure. Gantt works on top of Structure app. In particular, a Gantt chart is created based on a structure. Therefore, by limiting who has access to Structure app and who can create structures, a Jira admin can control the exposure of the users to Structure apps.

See Gradual Deployment<sup>42</sup> in the Structure documentation for more details on how to gradually introduce the app to the system.

# 6.3 Confluence Configuration for Gadgets

Before users can add the Structure.Gantt gadget to Atlassian Confluence, specific configuration steps must be performed by the Confluence administrator.

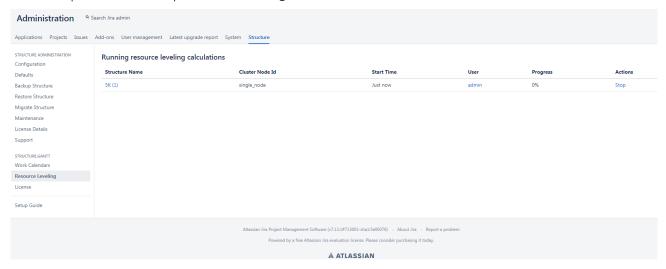
<sup>42</sup> https://wiki.almworks.com/display/structure/Gradual+Deployment

To enable the Structure. Gantt gadget in Confluence:

- 1. Connect your JIRA with your Confluence using Application Links<sup>43</sup>
- 2. Add the Structure.Gantt gadget to the list of External Gadgets:
  - a. Go to your Jira dashboard, click Add gadget | JIRA | Load all gadgets
  - b. Locate the Structure. Gantt gadget, click **Show XML link** and copy it
  - c. Open Confluence and click Administration | General configuration | External Gadgets
  - d. Paste the copied link in the "Gadget Specification URL" field and click Add

# 6.4 Resource Leveling Troubleshooting

Jira admins can view (and stop, when necessary) current leveling operations by going to **Administration** | **Structure | Structure.Gantt | Resource Leveling.** 



The resource leveling screen lists all in-progress leveling operations on the Jira instance and how far along they are in their progress. To cancel a leveling operation, locate it in the list and click **Stop**.

# 6.4.1 Advanced Configurations

Several additional configurations can be set using the Structure Dark Features and Fine Tuning Interface, including:

- · Changing permission levels for Resource Leveling
- Setting the maximum number of tasks that can be leveled
- Allocating additional (or fewer) system resources to Resource Leveling
- Disabling Resource Leveling

For more information, see Advanced Configurations for Structure. Gantt(see page 141).

# 6.5 Advanced Configurations for Structure. Gantt

The following custom configurations can be set using the Structure Dark Features and Fine Tuning interface<sup>44</sup>.

<sup>43</sup> https://confluence.atlassian.com/adminjiraserver071/using-applinks-to-link-to-other-applications-802592232.html 44 https://wiki.almworks.com/display/structure/Advanced+Configuration+and+Dark+Features

# 6.5.1 Scheduling and Time Limits

Structure. Gantt has some facilities that prevents it from locking the Jira instance in the event that scheduling operations are taking too much time. By default, we assume that most charts calculations should take no more than 5 minutes, and Structure. Gantt will stop performing any further scheduling for a particular structure if the calculation exceeds this time. In this case, a message such as this will be shown:

#### •

### Scheduling has been paused.

The last chart calculation time exceeded the limit.

Structure. Gantt has been disabled for this structure #1.

Please contact your Jira system administrator and checkout Structure. Gantt Troubleshooting for more info.

These situations are treated as abnormal and usually mean that the Structure. Gantt scheduling algorithm got stuck for some reason, so we highly recommend that you contact our support team<sup>45</sup> to further investigate the cause. In some rare cases, tuning of these facilities may be needed.

Property	Explanation	Defa ult valu e
structure.gant t.settings.sch edulingTimeLim it	This property declares scheduling timeout (in seconds), i.e. maximum time Structure.Gantt can perform scheduling calculations for a single chart. (The default value is based on our measurements for structures with 100,000 issues. It should be sufficient for most cases, but it can be configured to a lower or higher value.)	300 seco nds
structure.gant t.settings.exc ludedFromSched uling	This property holds a comma-separated list with the IDs of the structures that have Gantt chart calculations turned off. Any structures listed here will automatically be excluded when Gantt scheduling takes more time than is declared by the <i>structure.gantt.settings.schedulingTimeLimit</i> .	Emp ty
structure.gant t.settings.upd ateTimeLimit	This property declares an additional timeout when waiting to apply a change made by the user on a Gantt chart. Recommended values are up to several minutes.	120 secs

<sup>45</sup> https://support.almworks.com/

Property	Explanation	Defa ult valu e
structure.gant t.settings.att ributesTimeLim it	This property declares the timeout when waiting for Gantt attributes, in order to show them in the Structure grid. Structure.Gantt will try to get the attributes within the declared time and then display empty values if the operation fails. As soon as the chart is finished calculating, the actual values in the grid should refresh automatically. Recommended values are from 30 secs to several minutes.	30 secs
structure.gant t.settings.pol lTimeLimit	The timeout for poll to wait for the ability to calculate the update. This timeout ensures Structure. Gantt will not hold update requests and threads for an unlimited amount of time. It is recommended to keep this value less than 1 minute.	10 secs

# 6.5.2 Resource Leveling Configurations

Property	Explanation	D ef a ul t va lu e
structure.gantt.sett ings.leveling.requir eControl	When <b>false</b> , Edit permissions are required to start or reset Resource Leveling.  When <b>true</b> , Control permission is required.	f a l s e
structure.gantt.feat ures.resourceLevelin g	Set to <b>false</b> to disable Resource Leveling, cancel all leveling calculations and delays, and remove any controls related to Resource Leveling from the UI.	tr ue
structure.gantt.sett ings.leveling.taskLi mit	Determines the maximum number of tasks that can be leveled by a single Leveling session.	5, 00 0

Property	Explanation	D ef a ul t va lu e
structure.gantt.sett ings.leveling.thread PoolSizeFactor	Maximum number of threads allocated for Resource Leveling calculations on every node.  The number of threads is determined by the formula `NUMBER_OF_CPU_CORES * threadPoolSizeFactor` and by default means that Resource Leveling may use no more threads than half of the available CPU cores, i.e. for a 4 CPU core machine, Resource Leveling should use no more than 2 threads for calculations. Setting this value to `0` will guarantee Resource Leveling will occupy only a single thread on any node.	0. 5

# 7 FAQ

- Does Structure.Gantt support Jira Data Center?(see page 145)
- Does Structure.Gantt support Portfolio for Jira hierarchy?(see page 145)
- I have increased the capacity (Units) of the resource, but the task still takes the same amount of time to complete(see page 145)

# 7.1 Does Structure. Gantt support Jira Data Center?

Both Structure and Structure. Gantt support Jira Data Center.

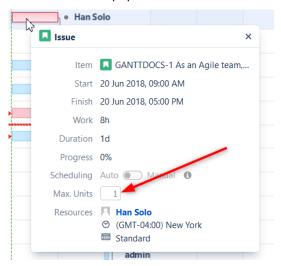
# 7.2 Does Structure.Gantt support Portfolio for Jira hierarchy?

The work breakdown structure used for building your Gantt chart is created using the Structure app functionality, which supports Parent links used in Portfolio plans.

You can visualize Parent links using either Extend(see page 145) or Group(see page 145) generators of Portfolio type when building your structure.

# 7.3 I have increased the capacity (Units) of the resource, but the task still takes the same amount of time to complete

This can happen if the Maximum Units value for the task is set to a number smaller than the resource capacity. To check and/or update the task's Maximum Units, click the task in the Gantt chart and locate the **Max. Unit** value in the Task Details Popup.



This Max. Units value defines the maximum number of resource units that can be allocated for the task.

- To learn more about setting an individual task's Maximum Units, see Gantt Chart Elements(see page 50)
- To learn about setting the default Maximum Units value, see Gantt Configuration | Resources(see page 114).

# 8 Download



▲ Structure App<sup>46</sup> version 6.0 or later is required to run Structure.Gantt.

### 8.1 Download Structure.Gantt

Extension	Version	Compatibility	Download link	Publish Date	End of Life
Structure.Gantt	2.4.0	Jira 7.13+ Structure 6.0.0+	structure- gantt-2.4.0.jar <sup>47</sup> md5 b27ee09ba8837e93 71493d034c5bf56e	2020-05-19	2021-05-19

End-User License Agreement (PDF)<sup>48</sup>

#### End of Life:

- For beta and release candidate versions: Beta versions may be scheduled to expire after certain amount of time. In any case, the lifespan of such pre-release version is not supposed to be longer than 3 months. You will need to upgrade to a newer version before end-of-life.
- For other versions: You will be able to use this version of the plugin indefinitely, however, after end-oflife date, the support for the version is limited.

### 8.2 What's Next?

See Quick Start Guide(see page 14)

### 8.3 Download Archive

This page contains links to older version of the Structure. Gantt plugin.

<sup>46</sup> https://marketplace.atlassian.com/plugins/com.almworks.jira.structure/server/overview

<sup>47</sup> https://d1.almworks.com/.files/structure-gantt-2.4.0.jar

<sup>48</sup> http://almworks.com/EULA-Structure.pdf

Extension	Version	Compatibility	Download link	Publish Date	End of Life
Structure.G antt	2.4.0	Jira 7.13+ Structure 6.0.0+	structure-gantt-2.4.0.jar <sup>49</sup> md5 b27ee09ba8837e9371493d034 c5bf56e	2020-05-1 9	2021-05-19
Structure.G antt	2.3.0	Jira 7.13+ Structure 6.0.0+	structure-gantt-2.3.0.jar <sup>50</sup> md5 c5765b171c605fe39fea0b0a3 6176dc1	2020-03-2	2021-03-26
Structure.G antt	2.2.1	Jira 7.6+ Structure 5.6.0+	structure-gantt-2.2.1.jar <sup>51</sup> md5 95339d5f8b8c9b4cea3a21030 0c1681e	2020-02-1 7	2021-02-17
Structure.G antt	2.2.0	Jira 7.6+ Structure 5.6.0+	structure-gantt-2.2.0.jar <sup>52</sup> md5 58dd5106de5b6afaff0158508 32d9bbb	2020-01-2	2021-01-23
Structure.G antt	2.1.1	Jira 7.6+ Structure 5.6.0+	structure-gantt-2.1.1.jar <sup>53</sup> md5 247d335328cf118a9dfad1f7f 5375c5a	2019-11-1	2020-11-18
Structure.G antt	2.1.0	Jira 7.6+ Structure 5.6.0+	structure-gantt-2.1.0.jar <sup>54</sup> md5 8bfdcf75856726cd9bf8cdbc6 4878f66	2019-11-1	2020-11-11

<sup>49</sup> https://d1.almworks.com/.files/structure-gantt-2.4.0.jar

<sup>50</sup> https://d1.almworks.com/.files/structure-gantt-2.3.0.jar

<sup>51</sup> https://d1.almworks.com/.files/structure-gantt-2.2.1.jar

<sup>52</sup> https://d1.almworks.com/.files/structure-gantt-2.2.0.jar 53 https://d1.almworks.com/.files/structure-gantt-2.1.1.jar

<sup>54</sup> https://d1.almworks.com/.files/structure-gantt-2.1.0.jar

Extension	Version	Compatibility	Download link	Publish Date	End of Life
Structure.G antt	2.0.1	Jira 7.6+ Structure 5.5.0+	structure-gantt-2.0.1.jar <sup>55</sup> md5 2b23956d7f939c3eee469f4a3 cfd46bd	2019-09-2	2020-09-25
Structure.G antt	2.0.0	Jira 7.6+ Structure 5.5.0+	structure-gantt-2.0.0.jar <sup>56</sup> md5 b19e2c92bbf23ef987e3dc809 36af126	2019-09-0	2020-09-06
Structure.G antt	1.4.1	Jira 7.6+ Structure 5.3.0+	structure-gantt-1.4.1.jar <sup>57</sup> md5 96cfffa09a80d568f54e5425e b7e701d	2019-05-2	2020-05-29
Structure.G antt	1.4.0	Jira 7.6+ Structure 5.3.0+	structure-gantt-1.4.0.jar <sup>58</sup> md5 59de792659fc8c701896f6b23 d4ecdea	2019-04-0	2020-04-05
Structure.G antt	1.3.2	Jira 7.2+ Structure 5.1.0+	structure-gantt-1.3.2.jar <sup>59</sup> md5 b313702b59b92d42b34f161ed c44b31a	2018-12-2	2019-12-29
Structure.G antt	1.3.1	Jira 7.2+ Structure 5.1.0+	structure-gantt-1.3.1.jar <sup>60</sup> md5 e917819629c91ebce29f45101 7fa4aca	2018-12-1	2019-12-11

<sup>55</sup> https://d1.almworks.com/.files/structure-gantt-2.0.1.jar

<sup>56</sup> https://d1.almworks.com/.files/structure-gantt-2.0.0.jar

<sup>57</sup> https://d1.almworks.com/.files/structure-gantt-1.4.1.jar

<sup>58</sup> https://d1.almworks.com/.files/structure-gantt-1.4.0.jar 59 https://d1.almworks.com/.files/structure-gantt-1.3.2.jar

<sup>60</sup> https://d1.almworks.com/.files/structure-gantt-1.3.1.jar

Extension	Version	Compatibility	Download link	Publish Date	End of Life
Structure.G antt	1.3.0	Jira 7.2+ Structure 5.1.0+	structure-gantt-1.3.0.jar <sup>61</sup> md5 3eb992f181993a3504245e2d7 2410ab0	2018-11-1	2019-11-14
Structure.G antt	1.2.1	Jira 7.2+ Structure 4.6.0+	structure-gantt-1.2.1.jar <sup>62</sup> md5 1a86fe8b88d63d97c959ca8f3 244c943	2018-08-2	2019-08-21
Structure.G antt	1.2.0	Jira 7.2+ Structure 4.6.0+	structure-gantt-1.2.0.jar <sup>63</sup> md5 e8d3c476d2f501b836eab089f c8b0671	2018-07-1	2019-07-19
Structure.G antt	1.1.1	Jira 7.2+ Structure 4.6.0+	structure-gantt-1.1.1.jar <sup>64</sup> md5 91b8a3b977b6e75b3be7dbc95 ca3ec2a	2018-06-1	2019-06-14
Structure.G antt	1.1.0	Jira 7.2+ Structure 4.6.0+	structure-gantt-1.1.0.jar <sup>65</sup> md5 809247311df529c874360e6d4 27d71c7	2018-05-1 7	2019-05-17
Structure.G antt	1.0.1	JIRA 7.2+ Structure 4.5.0+	structure-gantt-1.0.1.jar <sup>66</sup> md5 3362753649c095f401087a3dd8ab 8833	2018-02-0	2019-02-05

<sup>61</sup> https://d1.almworks.com/.files/structure-gantt-1.3.0.jar

<sup>62</sup> https://d1.almworks.com/.files/structure-gantt-1.2.1.jar

<sup>63</sup> https://d1.almworks.com/.files/structure-gantt-1.2.0.jar

<sup>64</sup> https://d1.almworks.com/.files/structure-gantt-1.1.1.jar 65 https://d1.almworks.com/.files/structure-gantt-1.1.0.jar

<sup>66</sup> https://d1.almworks.com/.files/structure-gantt-1.0.1.jar

Extension	Version	Compatibility	Download link	Publish Date	End of Life
Structure.G antt	1.0.0	JIRA 7.2+ Structure 4.5.0+	structure-gantt-1.0.0.jar <sup>67</sup> md5 d68b5ec669b1b9d9e7107de0de2c 103c	2017-12-2 9	2018-12-29
Structure.G antt	0.7.0 (Beta)	JIRA 7.3+ Structure 4.2.0+	structure-gantt-0.7.0.jar <sup>68</sup> md5 c7c80e30c6e0ed86fe495f6c e145c9fe	2017-09-0 9	2018-03-09

### End of Life:

- For beta versions: Beta versions are scheduled to expire after certain amount of time. You will need to upgrade to another Beta or Production version before that date.
- For other versions: You will be able to use this version of the plugin indefinitely, however, after End-of-Life date, the support for the version is limited.

<sup>67</sup> https://d1.almworks.com/.files/structure-gantt-1.0.0.jar 68 https://d1.almworks.com/.files/structure-gantt-0.7.0.jar

# 9 Release Notes

- Structure.Gantt 2.4 Release Notes(see page 151)
- Structure.Gantt 2.3 Release Notes(see page 154)
- Structure.Gantt 2.2 Release Notes(see page 155)
  - Structure.Gantt 2.2.1 Release Notes(see page 158)
- Structure.Gantt 2.1 Release Notes(see page 159)
  - Structure.Gantt 2.1.1 Release Notes(see page 162)
- Structure.Gantt 2.0 Release Notes(see page 162)
  - Structure.Gantt 2.0.1 Release Notes(see page 166)
- Structure.Gantt 1.4 Release Notes(see page 167)
  - Structure.Gantt 1.4.1 Release Notes(see page 172)
- Structure.Gantt 1.3 Release Notes(see page 173)
  - Structure.Gantt 1.3.1 Release Notes(see page 177)
  - Structure.Gantt 1.3.2 Release Notes(see page 178)
- Structure Gantt 1.2 Release Notes(see page 178)
  - Structure.Gantt 1.2.1 Release Notes(see page 180)
- Structure.Gantt 1.1 Release Notes(see page 181)
  - Structure.Gantt 1.1.1 Release Notes(see page 184)
- Structure.Gantt 1.0 Release Notes(see page 185)
  - Structure.Gantt 1.0.1 Release Notes(see page 186)

### 9.1 Structure.Gantt 2.4 Release Notes

ALM Works Business Continuity During the COVID-19 Outbreak<sup>69</sup>

### i 19<sup>th</sup> of May, 2020

Structure.Gantt 2.4 includes additional Gantt attributes that can be used in Structure, gadget filtering and other improvements

Download App(see page 146)

Structure.Gantt on Atlassian Marketplace<sup>70</sup>

Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required 71

# 9.1.1 Version Highlights

- · Additional Gantt attributes available in Structure columns, formulas and effectors
- · Filtering within a Gantt gadget
- · Leveling Priority based on Jira Rank
- Limiting Resource Leveling to overallocations that occur after a specified date
- Other fixes and improvements

<sup>69</sup> http://alm.works/covid19

<sup>70</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 71 http://alm.works/gantt-demo

# 9.1.2 Changes in Detail

### 9.1.2.1 Additional Gantt attributes available in Structure

In this release, we have expanded the number of Gantt attributes available to use in Structure columns, formulas<sup>72</sup> and effectors<sup>73</sup>.

Some of the new attributes include:

- · Gantt Work
- Gantt Duration
- Gantt Resource
- Gantt Leveling Priority
- Gantt Maximum Units
- · Gantt Scheduling Mode
- Gantt Slice

### And many more!

Documentation: Using Gantt Attributes in Structure(see page 89) and List of Gantt Attributes Available in Structure(see page 93)

### 9.1.2.2 2.2 Filtering within a Gantt gadget

It is now possible to filter Structure. Gantt gadget content the same way a Structure gadget is filtered, using a JQL, S-JQL or Text query:



The maximum hierarchy level of items shown on the chart. Leave empty to include everything.

Documentation: Using Gadgets(see page 82)

<sup>72</sup> https://wiki.almworks.com/display/structure/Formula+Columns

<sup>73</sup> https://wiki.almworks.com/display/structure/Effectors

### 9.1.2.3 Notable Improvements and Fixes

- Resource Leveling(see page 72) can now be set to only resolve overallocations that occur after a specified date
- Jira Rank and Structure Index can now be used for Leveling Priority (see Resources(see page 114))
- It is now possible to use only the Remaining Estimate for Task Estimation (see Work Estimates(see page 101))
- Tasks with zero Estimate or a Fixed Duration of zero can be automatically treated as milestones (see Grouping(see page 109)
- · Manually-scheduled milestones are now visually distinguishable from automatically-scheduled ones
- · Fixed: Updates to parent items were ignored when using a formula that included the value of a Gantt attribute's parent item
- · Fixed: Resource Leveling was not respecting links, which in some cases resulted in scheduling conflicts
- Fixed: Zoom level unexpectedly switched from Days to Hours
- Fixed: Improved scheduling performance for schedules with a large number of fixed duration tasks
- · Fixed: Improved performance for schedule updates when a changed task is included in many groups

### 9.1.3 Supported Versions

Structure. Gantt 2.4 requires Structure 6.0 or above.

We support all editions of Jira (Jira Core, Jira Software, Jira Service Desk), versions 7.13 or later. Jira Data Center is also supported.

### 9.1.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please back up your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings are correct.

#### 9.1.5 Known issues

Below are a few known issues and non-obvious cases.

- If a Structure column is selected as the source for resource assignment formula, any changes made to this column after the resource list has been built will be ignored.
- User icons from external sites (like Gravatar) will be replaced with uniform user icons during PDF/SVG
- Quick filter functionality isn't working properly with the Filter by Resource action, so it is recommended that users avoid saving filters produced by this action.

# 9.1.6 Enterprise Deployment Notes

In terms of stability and performance, this release does not bring significant changes compared to version 2.3.0. There are no particular special areas of interest for load testing and stress testing Structure. Gantt 2.4. We advise running the same testing procedures as you've done for previous upgrades.



3 Should you have any questions on Enterprise Deployment, let us know at support@almworks.com<sup>74</sup>.

### 9.2 Structure. Gantt 2.3 Release Notes

ALM Works Business Continuity During the COVID-19 Outbreak 75



### (i) 26<sup>th</sup> of March, 2020

Structure.Gantt 2.3 introduces Structure 6.0 support and other improvements.

Download App (see page 146)

Structure.Gantt on Atlassian Marketplace<sup>76</sup>

Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required 77

# 9.2.1 Version Highlights

- Support for Structure 6.0
- · Other improvements and bug fixes

### 9.2.2 Changes in Detail

### 9.2.2.1 Support for Structure 6.0

Structure 6.0 introduced Effectors, a feature that makes it possible to write Structure attribute and formula values to Jira fields. It is now also possible to write Structure. Gantt values, including task Start and Finish dates, to Jira fields.



Sorry, the widget is not supported in this export. But you can reach it using the following URL:

https://www.youtube.com/watch?v=oE1dSklL9D8

Documentation: Effectors<sup>78</sup>

### 9.2.2.2 Notable Improvements and Fixes

- Structure.Gantt is now able to detect whether Structure is installed and compatible with Structure.Gantt
- Fixed: Resource Leveling was not able to resolve overallocation in certain situations when grouping(see page 154) was in use

<sup>75</sup> http://alm.works/covid19

<sup>76</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview

<sup>77</sup> http://alm.works/gantt-demo

<sup>78</sup> https://wiki.almworks.com/display/structure/Effectors

# 9.2.3 Supported Versions

Structure. Gantt 2.3 requires Structure 6.0 or above.

We support all editions of Jira (Jira Core, Jira Software, Jira Service Desk), versions 7.13 or later. Jira Data Center is also supported.

# 9.2.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please back up your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings are correct.

#### 9.2.5 Known issues

Below are a few known issues and non-obvious cases.

- If a Structure column is selected as the source for resource assignment formula, any changes made to this column after the resource list has been built will be ignored.
- User icons from external sites (like Gravatar) will be replaced with uniform user icons during PDF/SVG
- · Quick filter functionality isn't working properly with the Filter by Resource action, so it is recommended that users avoid saving filters produced by this action.

# 9.2.6 Enterprise Deployment Notes

In terms of stability and performance, this release does not bring significant changes compared to version 2.2.1. There are no particular special areas of interest for load testing and stress testing Structure. Gantt 2.3. We advise running the same testing procedures as you've done for previous upgrades.

Should you have any questions on Enterprise Deployment, let us know at support@almworks.com<sup>79</sup>.

### 9.3 Structure.Gantt 2.2 Release Notes



### i 23<sup>th</sup> of January, 2020

Structure.Gantt 2.2 introduces Dependency Lead/Lag time and other improvements and bug fixes.

Download App (see page 146)

Structure. Gantt on Atlassian Marketplace 80

Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required<sup>81</sup>

<sup>79</sup> mailto:support@almworks.com 80 https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 81 http://alm.works/gantt-demo

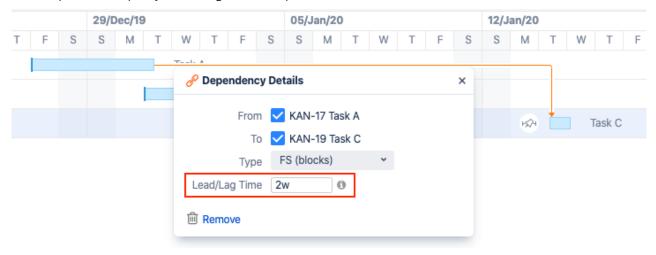
# 9.3.1 Version Highlights

- Dependency Lead/Lag time
- Change Dependency Type
- Other improvements and bug fixes

# 9.3.2 Changes in Detail

### 9.3.2.1 Dependency Lead/Lag Time

It is now possible to specify lead or lag time for dependencies.

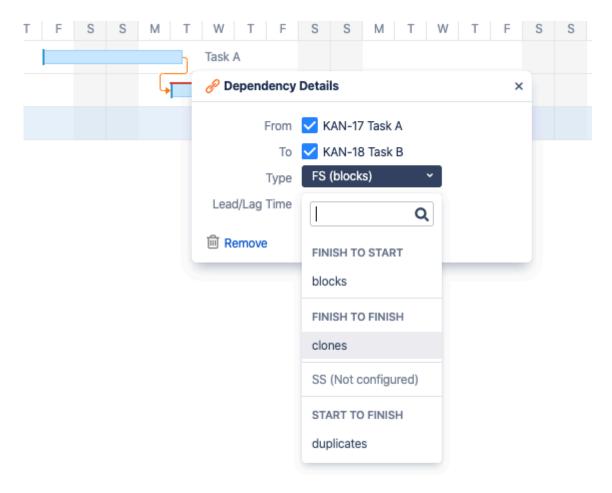


Dependency Lead/Lag times can be applied to individual issues, tailored for specific types of issues using Slices, or set globally through the Gantt configuration.

Documentation: Dependency Lead/Lag Time(see page 44)

### 9.3.2.2 Change Dependency Type

It is now possible to change individual Dependency types from the Dependency Details panel.



Documentation: Working With Dependencies (see page 41)

### 9.3.2.3 Notable Improvements and Fixes

- Jira default units are now used for unitless numbers entered in duration fields, including Fixed Duration or Lead/Lag time
- The size of the Structure.Gantt client bundle has been reduced

# 9.3.3 Supported Versions

Structure. Gantt 2.2 requires Structure 5.6 or above.

We support all editions of Jira (Jira Core, Jira Software, Jira Service Desk), versions 7.6 or later. Jira Data Center is also supported.

# 9.3.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please back up your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings are correct.

### 9.3.5 Known issues

Below are a few known issues and non-obvious cases.

- If a Structure column is selected as the source for resource assignment formula, any changes made to this column after the resource list has been built will be ignored.
- User icons from external sites (like Gravatar) will be replaced with uniform user icons during PDF/SVG
- Quick filter functionality isn't working properly with the Filter by Resource action, so it is recommended that users avoid saving filters produced by this action.

### 9.3.6 Enterprise Deployment Notes

In terms of stability and performance, this release does not bring significant changes compared to version 2.1.1. There are no particular special areas of interest for load testing and stress testing Structure. Gantt 2.2. We advise running the same testing procedures as you've done for previous upgrades.

(i) Should you have any questions on Enterprise Deployment, let us know at support@almworks.com<sup>82</sup>.

### 9.3.7 Structure.Gantt 2.2.1 Release Notes



### 17<sup>th</sup> of February, 2020

Structure. Gantt 2.2.1 introduces user anonymization support for Jira 8.7.

Download App(see page 146) Structure.Gantt on Atlassian Marketplace<sup>83</sup>

#### 9.3.7.1 Patch Release

This is a patch release based on Structure. Gantt 2.2. It introduces user anonymization support for Jira 8.7.

### 9.3.7.2 Installation and Upgrade

Structure.Gantt 2.2.1 requires Structure 5.6 or above.

If you already have production data from a previous version of Structure. Gantt, please consider backing up your data before upgrading.

### 9.3.7.3 Enterprise Deployment Notes

Structure. Gantt 2.2.1 does not introduce changes that could affect performance. We advise you to perform the usual testing on a staging server.

<sup>82</sup> mailto:support@almworks.com

<sup>83</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview

### 9.4 Structure. Gantt 2.1 Release Notes



### i 11<sup>th</sup> of November, 2019

Structure.Gantt 2.1 introduces Auto-scheduled Fixed Duration tasks and other improvements and bug fixes.

Download App(see page 146) Structure.Gantt on Atlassian Marketplace<sup>84</sup> Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required<sup>85</sup>

# 9.4.1 Version Highlights

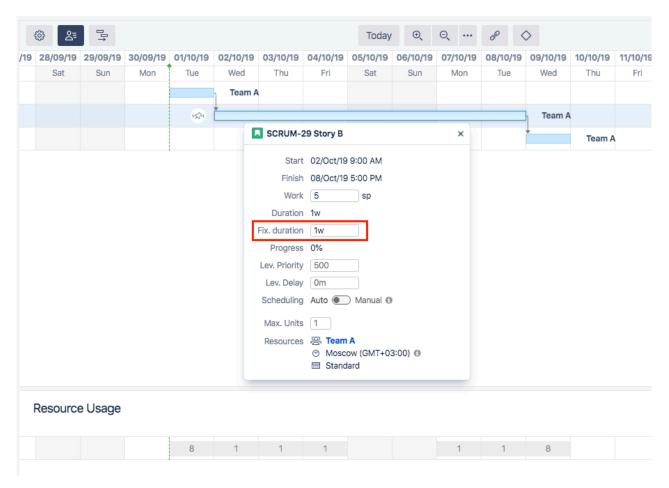
- Auto-scheduled Fixed Duration tasks
- Indicators for hidden tasks
- Other improvements and bug fixes

# 9.4.2 Changes in Detail

### 9.4.2.1 Auto-scheduled Fixed Duration tasks

In addition to Agile tasks and tasks with both Manual Start and Manual Finish dates defined, it is now possible to specify duration separate of work for auto-scheduled tasks, as well as tasks that have either a Manual Start or Manual Finish date set.

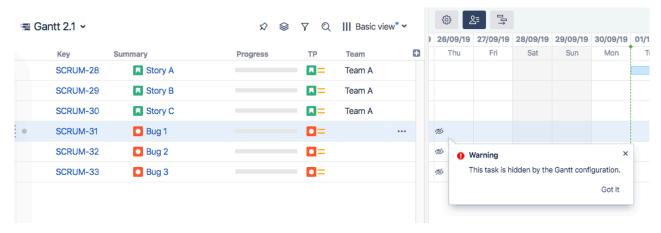
<sup>84</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 85 http://alm.works/gantt-demo



Documentation: Fixed Duration(see page 36)

#### 9.4.2.2 Indicators for hidden tasks

A special indicator will now be displayed when a task is not visible on the chart due to insufficient permissions or the Gantt configuration, along with an explanation for why the item is hidden.



Documentation: Task Indicators(see page 59)

### 9.4.2.3 Notable Improvements and Fixes

- It is now possible to override Leveling Priority separately from Maximum Units in a Slice
- It is now possible to edit Leveling Delays of individual tasks via the Task Details Panel
- An option to clear existing leveling delays before running leveling was introduced
- Run Leveling and Reset Leveling dialogs were united into a single dialog
- Resource Leveling dialog options are now maintained between runs
- Default value for Leveling Priority for newly created configs is 500 (instead of 0)
- Fixed: Resources disappeared when Tempo Teams were used as Resources
- Fixed: Legacy mode for Time tracking is now properly supported by Structure.Gantt

# 9.4.3 Supported Versions

Structure.Gantt 2.1 requires Structure 5.6 or above.

We support all editions of Jira (Jira Core, Jira Software, Jira Service Desk), versions 7.6 or later. Jira Data Center is supported too.

### 9.4.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please back up your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings are correct.

#### 9.4.5 Known issues

Below are a few known issues and non-obvious cases.

- If a Structure column is selected as the source for resource assignment formula, any changes made to this column after the resource list has been built will be ignored.
- User icons from external sites (like Gravatar) will be replaced with uniform user icons during PDF/SVG
- Quick filter functionality isn't working properly with the Filter by Resource action, so it is recommended that users avoid saving filters produced by this action.

# 9.4.6 Enterprise Deployment Notes

In terms of stability and performance, this release does not bring significant changes compared to version 2.0. There are no particular special areas of interest for load testing and stress testing Structure. Gantt 2.1. We advise running the same testing procedures as you've done for previous upgrades.



(i) Should you have any questions on Enterprise Deployment, let us know at support@almworks.com<sup>86</sup>.

### 9.4.7 Structure.Gantt 2.1.1 Release Notes



### 18<sup>th</sup> of November, 2019

Structure.Gantt 2.1.1 fixes an issue with the Confluence gadget.

Download App(see page 146) Structure.Gantt on Atlassian Marketplace<sup>87</sup>

#### 9.4.7.1 Patch Release

This is a patch release based on Structure. Gantt 2.1. It fixes an issue with the Confluence gadget.

### 9.4.7.2 Installation and Upgrade

Structure.Gantt 2.1.1 requires Structure 5.6 or above.

If you already have production data from a previous version of Structure. Gantt, please consider backing up your data before upgrading.

### 9.4.7.3 Enterprise Deployment Notes

Structure. Gantt 2.1.1 does not introduce changes that could affect performance. We advise you to perform the usual testing on a staging server.

### 9.5 Structure.Gantt 2.0 Release Notes



### 6<sup>th</sup> of September, 2019

Structure.Gantt 2.0 introduces Resource Leveling and Baselines, as well as other improvements and bug fixes.

Download App(see page 146)

Structure.Gantt on Atlassian Marketplace<sup>88</sup>

Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required 89

# 9.5.1 Version Highlights

- Structure.Gantt becomes a paid app
- · Resource Leveling

<sup>87</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 88 https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 89 http://alm.works/gantt-demo

- Baselines
- · Fix Version markers for Gadget
- · Other improvements and bug fixes

# 9.5.2 Changes in Detail

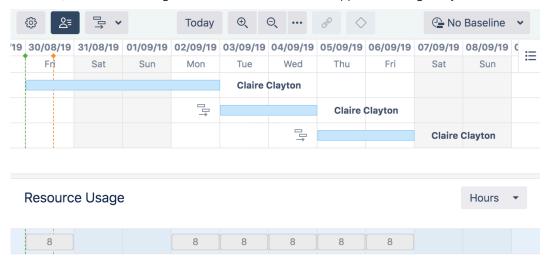
### 9.5.2.1 Structure.Gantt becomes a paid app

Since its introduction, we have continued to invest in Structure. Gantt — continuously adding new capabilities while also enhancing many of the early features. We feel that with the release of 2.0 we introduce a number of features, which make our Gantt offering uniquely competitive. We believe this warrants a fair price that will enable us to continue investing in its development.

You can see the new pricing on the Atlassian Marketplace<sup>90</sup>.

### 9.5.2.2 Resource Leveling

Resource Leveling allows you to automatically resolve overallocations for a single resource or group of resources. When run, Resource Leveling identifies overallocation and applies Leveling Delays to tasks in order to resolve it.

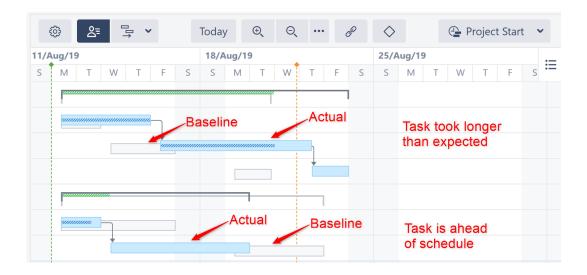


Documentation: R(see page 32)esource Leveling(see page 72)

#### 9.5.2.3 Baselines

Baselines create a snapshot of the schedule at a specific time, which can then be visualized alongside the current schedule, making it easy to identify differences between a proposed schedule and a project's actual progress. Baselines can be added to the Structure.Gantt gadget and included in a PDF or SVG export.

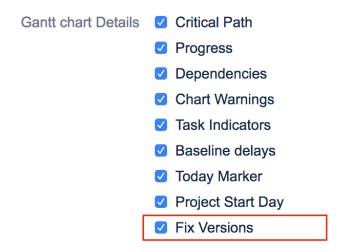
<sup>90</sup> https://marketplace.atlassian.com/apps/1217809/structure-gantt-planning-at-scale



Documentation: B(see page 36)aselines(see page 67)

### 9.5.2.4 Fix Version Markers for Gadget

It is now possible to include Fix Version in the Structure. Gantt gadget, the same way it can be included when exporting your schedule.



Documentation: Confluence Gadget(see page 86)

### 9.5.2.5 Notable Improvements and Fixes

- Changed: "Use Resolution Date as the Finish Date" option is now turned off by default for newly created configurations
- Changed: For Export and Gadget, Fix Version markers are now displayed expanded (if possible)
- Fixed: Tempo Teams and Team Roles are now properly displayed in the chart and resource list

- Fixed: Sprint markers weren't displayed properly when there was at least one sprint starting and finishing on the same day
- Fixed: JQL queries for Slices should be executed from the structure owner, rather than the current user
- Fixed: Gantt Progress was calculated incorrectly for hierarchies with loop markers
- Fixed: When a duplicate issue is assigned to both a task and a group at the same time, the assigned resource should not be removed
- Fixed: When a Formula returns a negative estimate, the Gantt chart should not disappear

# 9.5.3 Supported Versions

Structure. Gantt 2.0 requires Structure 5.5 or above.

We support all editions of Jira (Jira Core, Jira Software, Jira Service Desk), versions 7.6 or later. Jira Data Center is supported too.

### 9.5.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please back up your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings are correct.

#### 9.5.5 Known issues

Below are a few known issues and non-obvious cases.

- If a Structure column is selected as the source for resource assignment formula, any changes made to this column after the resource list has been built will be ignored.
- User icons from external sites (like Gravatar) will be replaced with uniform user icons during PDF/SVG export.
- Quick filter functionality isn't working properly with the Filter by Resource action, so it is recommended that users avoid saving filters produced by this action.
- Structure.Gantt won't update estimates when Time Tracking Legacy mode is enabled.
- Leveling Delay is applied to Fixed Duration tasks. (Workaround: switch it to Auto scheduling and back to Manual scheduling to clear Leveling Delay.)
- Resources may disappear when Tempo Teams are used as resources and these teams' permissions are restricted for some chart owners. This only affects Tempo Timesheets versions prior to 10.3.0.

### 9.5.6 Enterprise Deployment Notes

Structure.Gantt 2.0 introduces the Resource Leveling feature that can be important for large installations and Data Center instances.

### 9.5.6.1 Resource Leveling

Resource Leveling is an on-demand process to automatically fix over-allocations. It is a CPU- and memory-consuming operation, running in the background for periods starting from a few seconds to dozens of minutes. It is sensitive to structure size, number of resources used and number of over-allocations in the particular schedule.

Taking the on-demand nature of Resource Leveling into account, it is difficult to predict how it will impact the performance of a particular installation, because it depends on how many Gantt-enabled structures are there, how large they are and how often users will need to run Resource Leveling for their charts. Being run in parallel,

Resource Leveling may have a huge impact on an instance's performance, and as a safeguard we've added several configurable properties:

- By default, Resource Leveling is limited to 5000 tasks per execution, i.e. every time a user starts a Resource Leveling, it will fail if number of tasks exceeds this value. It is not recommended to make this value very large, since it may cause a Resource leveling to run for a very long period of time (hours). It is highly recommended to not increase it without a real need, and, even then, keep it lower than 10000. Please see the structure.gantt.settings.leveling.taskLimit property on the Advanced Configurations for Structure.Gantt(see page 141) page for more information.
- Another variable that is reserved for tuning Resource Leveling performance is the number of threads it can occupy at a node at any given moment of time. This one is configured using the structure.gantt.settings.leveling.threadPoolSizeFactor property (see Advanced Configurations for Structure.Gantt(see page 141)). By default, the factor is set to 0.5, i.e. the number of threads Resource Leveling can use for calculations cannot exceed half of the number of CPU cores available at any
- It is also possible to completely disable the Resource Leveling feature. See the structure.gantt.features.resourceLeveling property on the Advanced Configurations for Structure.Gantt(see page 141) page for more information.

### 9.5.6.2 Testing on a Staging Environment

For high load installations, we advise testing and running Resource Leveling on the most popular Gantt charts and adjusting Resource Leveling using the properties described above.

The usual load and stress testing are also recommended.

(i) Should you have any questions on Enterprise Deployment, let us know at support@almworks.com<sup>91</sup>.

### 9.5.7 Structure.Gantt 2.0.1 Release Notes



#### i 25<sup>th</sup> of September, 2019

Structure.Gantt 2.0.1 adds Atlassian Jira 8.4 compatibility.

Download App(see page 146) Structure.Gantt on Atlassian Marketplace<sup>92</sup>

#### 9.5.7.1 Patch Release

Starting from this version, Structure. Gantt is compatible with Atlassian Jira 8.4.

### 9.5.7.2 Installation and Upgrade

Structure.Gantt 2.0.1 requires Structure 5.5 or above.

<sup>91</sup> mailto:support@almworks.com

<sup>92</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview

If you already have production data from a previous version of Structure. Gantt, please consider backing up your data before upgrading.

### 9.5.7.3 Enterprise Deployment Notes

Structure. Gantt 2.0.1 does not introduce changes that could affect performance. We advise you to perform the usual testing on a staging server.

## 9.6 Structure. Gantt 1.4 Release Notes



### 6 5<sup>th</sup> of April, 2019

Structure.Gantt 1.4 introduces Agile planning, Fixed-duration tasks and the ability to export chart data as Structure attributes, as well as other improvements and bug fixes.

Download App(see page 146)

Structure.Gantt on Atlassian Marketplace<sup>93</sup>

Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required 94



⚠ Structure.Gantt will become a paid app beginning with release 2.0.

# 9.6.1 Version Highlights

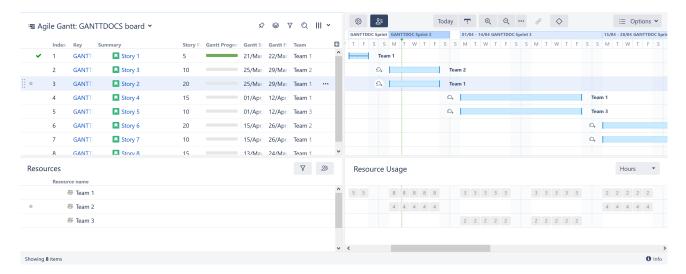
- Agile planning
- Fixed-duration tasks
- Chart data as Structure attributes
- Percentage for resource allocation
- · Agile Gantt Template
- · Other improvements and important bug fixes

# 9.6.2 Changes in Detail

### 9.6.2.1 Agile planning

Starting with this version of Structure. Gantt, it is now possible to use sprint dates to schedule tasks:

<sup>93</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 94 http://alm.works/gantt-demo

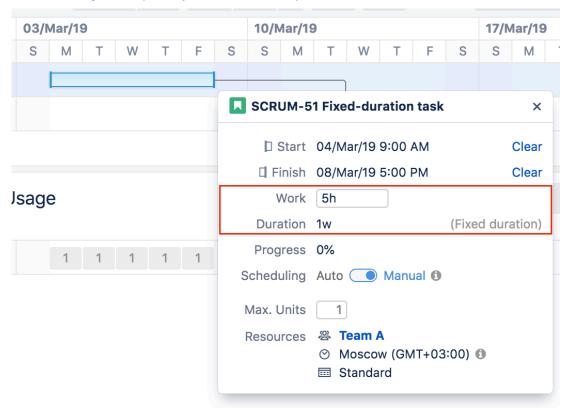


Tasks can be moved between sprints by drag and drop or by changing the sprint in the Task Details panel.

Documentation: Planning with Sprints(see page 32)

#### 9.6.2.2 Fixed-duration tasks

Tasks that are **scheduled by sprint dates** or **manually scheduled with both start and finish dates defined** now have work equally distributed across their duration. Adjusting the duration for these tasks will not affect their work (that can be adjusted separately in the Task Details panel or in Jira itself).



Documentation: Fixed Duration(see page 36)

#### 9.6.2.3 Chart data as Structure attributes

Structure. Gantt data is now available to Structure. Gantt attributes can be represented in columns, used in formulas or used in transformations:



The following attributes are currently supported:

- · Gantt Start Date
- · Gantt Finish Date
- · Gantt Milestone Date
- · Gantt Progress
- · Gantt Type

With more attributes to follow in future.

Documentation: Using Gantt Attributes in Structure(see page 89)

### 9.6.2.4 Percentage for Resource allocation

In addition to displaying the number of hours each resource is scheduled for during a set period of time, it is now possible to show the percentage of a resource's availability that is being used during that time. This can be particularly useful when trying to assess which resources are over- or under-allocated.



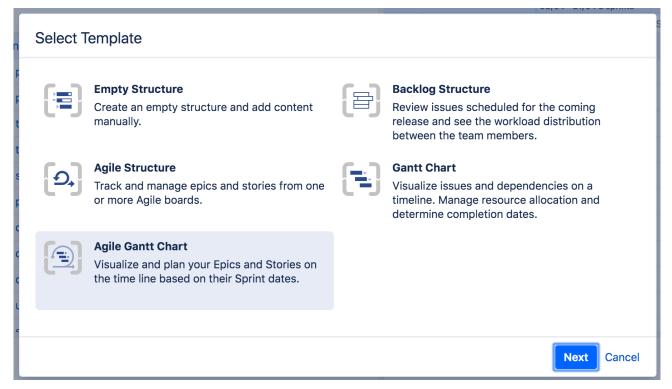
Documentation: Resources and Resource Usage(see page 63)

### 9.6.2.5 Agile Gantt Template

Using the new Agile Gantt Chart template, it is possible to create new charts with Agile Planning enabled by default with a several different types of hierarchies:

- · Stories only
- Stories underneath of Epics

• Portfolio (requires Atlassian Portfolio to be installed) — with Initiatives above Epics



### 9.6.2.6 Notable Improvements And Fixes

- In addition to Story Points, it is now possible to use arbitrary values for task estimation, i.e. use any text or numeric fields for estimate values (see Work Estimates(see page 101))
- Starting from version 1.4, switching a task to an Automatic scheduling will not clear underlying fields and their values will be preserved (see Manual Scheduling by Start or Finish Date(see page 30))
- Tasks with both manual start and finish dates set are treated as fixed-duration tasks, i.e. changing of their duration will not change their work (see Fixed Duration(see page 36))
- For competed tasks, a checkmark indicator is shown; this is also applies to milestones backed by an issue (see Task Indicators(see page 59))
- It is now possible to open Slice settings right from the Task Details panel by clicking its name (only if user has the permission to view or edit the configuration)
- Jira date formats are now used across all Structure.Gantt UI
- Fixed: "Login and Approve" form should be correctly shown now for a Structure.Gantt gadget being added to a Confluence page
- Fixed: Resources won't be shown anymore for inaccessible issues

# 9.6.3 Supported Versions

Structure.Gantt 1.4 requires Structure 5.3 or above.

We support all editions of Jira (Jira Core, Jira Software, Jira Service Desk), versions 7.6 or later. Jira Data Center is supported too.

### 9.6.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please back up your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings are correct.

#### 9.6.5 Known issues

Below are a few known issues and non-obvious cases.

- If a formula is selected as the source for resource assignment, any changes made to this formula after the resource list has been built will be ignored. For example, if your formula had a variable assigned to one field and you reassign that variable to another field after the resource list has already been built, the resource list will not be updated to reflect this change.
- User icons from external sites (like Gravatar) will be replaced with uniform user icons during PDF/SVG export.
- Quick filter functionality isn't working properly with the Filter by Resource action, so it is recommended that users avoid saving filters produced by this action.
- Structure.Gantt won't update estimate when Time Tracking Legacy mode is enabled
- If both Time Tracking and Custom estimate is enabled for the task and estimate is cleared through the Task Details panel, it will clear the both Original Estimate and Custom Estimate fields; undoing that operation will set only the preferred one.
- Kanban boards can be selected along with Scrum ones while creating Agile Gantt.

# 9.6.6 Enterprise Deployment Notes

Structure.Gantt 1.4 introduces several features that can be important for large installations and Data Center instances.

### 9.6.6.1 Agile Planning

For Agile Planning to work, Structure. Gantt needs to fetch all Agile boards for the issues contained in the structure, and then fetch all the sprints from these boards. That data is used for visualizing sprints on the timeline and for scheduling. In a particularly large structure, with issues from many boards, that could lead to an increased load on the server and increased latency in calculating the Gantt chart.

#### 9.6.6.2 Chart Data as Structure Attributes

We have exposed the calculated Gantt values (calculated start/finish dates) as Structure "attributes", which makes it possible to show them in the Structure grid and use in formulas.

It is important to keep in mind that this data depends on the calculated Gantt schedule. Requesting this value for even a single item would require the whole Gantt chart to be calculated – even if you're looking at a Single Grid layout and Gantt is not shown. The results of the calculations are cached, of course, so once it has been completed, the values for other items will be immediately available – until Structure. Gantt registers an issue update that would require a recalculation of the chart.

### 9.6.6.3 Testing on a Staging Environment

Taking this into account, in case you have a large (10,000 issues or more) structure with a configured Gantt chart, we would suggest to test the following scenarios on a staging environment, before upgrading the production instance:

- · Open a large structure that has a configured Gantt chart. Go to the Gantt configuration and enable Use sprints for manual scheduling option, then enable Prefer sprints over manual start and finish feature. Prepare a timer, click OK and measure how long it takes before the updated Gantt chart appears.
- Add a couple of Structure.Gantt columns (Gantt.Start or Gantt.Finish) to this structure. Scroll the Structure grid down and up, noting the delay between the scrolling and the data being loaded and shown in the grid.
- Add a "Text Attribute" transformation to the structure (note: not a grouper inside the structure a transformation 95). Select "Gantt. Finish" attribute as the grouping value. (You can also use a formula, for example, to group by the week of the finish date!) Note how much time it will take before the transformation is applied. Then proceed to change several issues in a way to affect the chart schedule, for example, change a dependency or a duration of a task. Note how quickly changes are applied and the structure is refreshed.

Watch the log files for errors and warnings while running these experiments. If you are not happy about the speed of the updates or the server load, please let us know! We might be able to suggest wats to improve the configuration and speed up Structure and the Gantt chart.

The usual load and stress testing are also recommended.



① Should you have any questions on Enterprise Deployment, let us know at support@almworks.com<sup>96</sup>.

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### 9.6.7 Structure.Gantt 1.4.1 Release Notes



i 29<sup>th</sup> of May, 2019

Structure.Gantt 1.4.1 is a patch release based on Structure.Gantt 1.4.0

Download App(see page 146) Structure.Gantt on Atlassian Marketplace<sup>97</sup>



⚠ Structure.Gantt will become a paid app beginning with release 2.0.

### 9.6.7.1 Patch release

This is a patch release based on version 1.4.0. We have addressed the following issues:

- Fixed: Gantt.Progress Structure attribute should not be affected by Structure transformations
- Fixed: Gantt attributes should be updated on structure hierarchy changes (indent and outdent)

<sup>95</sup> https://wiki.almworks.com/display/structure/Using+Transformations 96 mailto:support@almworks.com

<sup>97</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview

- Fixed: Structure.Gantt gadget was not working properly for structures with a grouping by a component or version
- Fixed: Default configuration should have dependencies switched off if there is no Blocks link type in the svstem
- Fixed: Structure.Gantt gadget should work correctly in Jira 8.2 and IE11
- Fixed: Scheduling should be paused for a structure if the schedule calculation takes more than 5 minutes to complete, in order to avoid excessive resource usage. Please refer to Structure. Gantt Troubleshooting (see page 172) for more details.

### 9.6.7.2 Installation and Upgrade

Structure.Gantt 1.4.1 requires Structure 5.3 or above.

If you already have production data from a previous version of Structure. Gantt, please consider backing up your data before upgrading.

#### 9.6.7.3 Enterprise deployment notes

With Structure. Gantt 1.4.1 we're introducing a new feature that should prevent excessive resource usage for huge Gantt charts or charts that are unable to complete the schedule calculation in a reasonable time. By default, schedule calculation will be paused for a structure if it exceeds 5 minutes. Normally scheduling should not exceed 5 minutes for very large structures (scheduling of structures with 100k issues takes around 2.5 minutes to calculate), but since we are unable to check all possible configurations we've made this timeout configurable. Please, refer to Structure.Gantt Troubleshooting(see page 172) for details on how to adjust it.

To ensure this timeout does not affect your charts, it is recommended to perform the following operations at the staging environment before updating production servers:

- Choose several large structures with configured Gantt charts
- · For every structure from the list, open it, switch layout to Gantt chart and wait it to fully load. Then perform regular operations like adding new tasks, adding/removing dependencies, adjusting task positions or adjusting the configuration
- Observe results and ensure that charts are calculated and visualized normally

In the event that you receive a "Scheduling has been paused" message, the corresponding timeout may need to be increased.



Should you have any questions on Enterprise Deployment, let us know at support@almworks.com<sup>98</sup>.

### 9.7 Structure.Gantt 1.3 Release Notes



### i 14<sup>th</sup> of November, 2018

Structure.Gantt 1.3 introduces Sliced configurations, ability to specify several Link Types per Dependency and a new "Filter structure by Resource" action, as well as other improvements and bug fixes.

Download App(see page 146)
Structure.Gantt on Atlassian Marketplace<sup>99</sup>

Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required 100

# 9.7.1 Version Highlights

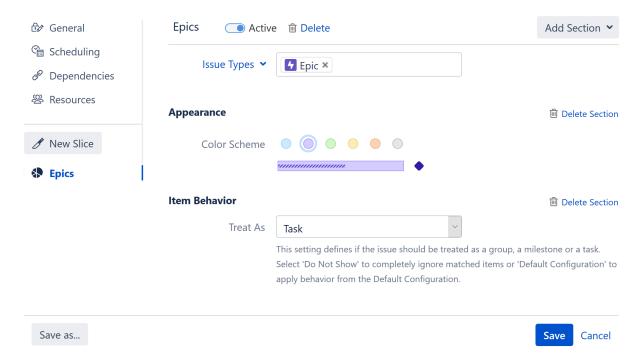
- Slice-based configurations
- Ability to specify several Link Types per Dependency
- Filter structure by Resource action
- · Other improvements and important bug fixes

# 9.7.2 Changes in Detail

### 9.7.2.1 Slice-based Configurations

It is now possible to define custom chart behaviors for different sets of issues. By creating separate "slices" for specific issue types (or issues that match a JQL query), you can change the appearance of specified issues, alter their behavior within the chart, or remove them from the chart completely.

Slices allow you to color-code issues based on their project, utilize a different set of resources for certain types of issues, define unique dependency configurations and more.



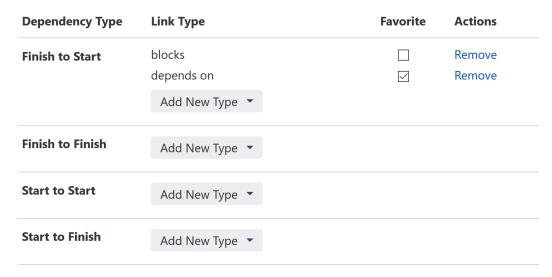
Documentation: Slice-based Configurations(see page 121)

<sup>99</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 100 http://alm.works/gantt-demo

### 9.7.2.2 Specify Multiple Link Types per Dependency

Structure. Gantt now allows you to visualize dependencies even if they are represented by multiple link types in Jira.

Using Gantt configuration, you can select which link types are supported for each type of dependency. When you create new dependencies in your chart, you can choose from the available link types – or you can configure favorite link types to streamline the process.

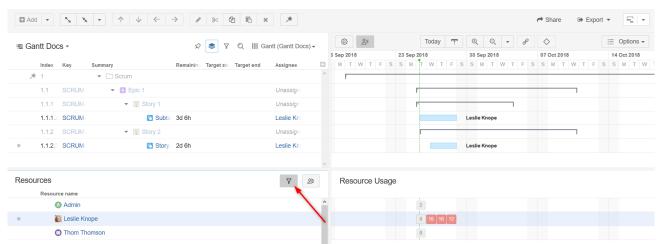


Documentation: Dependencies (see page 111)

#### 9.7.2.3 Filter by Resource

It is now possible to filter your structure and Gantt chart based on a specific resource, making it easier to plan work for a particular resource, resolve conflicts and address overloads.

To filter by a specific resource, simply highlight the resource's name in the Resources panel and click the Filter button.



Documentation: Resource Management(see page 62)

#### 9.7.2.4 Notable Fixes and Improvements

- Ability to copy existing configurations
- Zoom using the mouse wheel
- Resource maximum units can now be based on a Jira or Structure attribute
- Start Date can be manually adjusted by dragging the left side of a task bar (previously, this was only supported for Finish Date)
- · Navigate directly from a Gantt gadget to the corresponding Gantt chart, with a new "Open" link
- Fixed a scheduling issue in which some tasks weren't scheduled and "Unexpected error" message appears

### 9.7.3 Supported Versions

Structure.Gantt 1.3 requires Structure 5.1 or above.

We support all editions of Jira (Jira Core, Jira Software, Jira Service Desk), versions 7.2 or later. Jira Data Center is supported too.

### 9.7.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please back up your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings are correct.

### 9.7.5 Known issues

Below are a few known issues and non-obvious cases.

- If a formula is selected as the source for resource assignment, any changes made to this formula after the resource list has been built will be ignored. For example, if your formula had a variable assigned to one field and you reassign that variable to another field after the resource list has already been built, the resource list will not be updated to reflect this change.
- The visibility of timeline bars depends on the permission settings of the structure owner (not just the current user). If a structure owner does not have permission to see an issue, they will not be able to see them on the Gantt chart.
- User icons from external sites (like Gravatar) will be replaced with uniform user icons during PDF/SVG export.
- Due to Adobe PDF limitations, maximum size of extracted Gantt chart can't exceed 200 inches (508 cm) by any side, and although most web browsers will open such PDFs without problem, Adobe Acrobat Reader will report an issue and crop the exported chart. We recommend using SVG export for huge charts instead.
- Quick filter functionality isn't working properly with the Filter by Resource action, so it is recommended that users avoid saving filters produced by this action.

### 9.7.6 Enterprise Deployment Notes

Structure. Gantt 1.3 introduces Slice-based Configurations, which allow users to divide their chart into groups of items (slices) and adjust configurations for those slices separately. Separating items into slices as well as performing separate data access for items of different slices may affect system performance. It is recommended to test slice-based configurations on staging servers before using them in production.

(i) Should you have any questions on Enterprise Deployment, let us know at support@almworks.com<sup>101</sup>.

#### 9.7.7 Structure.Gantt 1.3.1 Release Notes



#### i 11<sup>th</sup> of December, 2018

Structure.Gantt 1.3.1 is a patch release based on Structure.Gantt 1.3.0

Download App(see page 146) Structure.Gantt on Atlassian Marketplace<sup>102</sup>



⚠ Structure.Gantt will become a paid app beginning with release 2.0.

#### 9.7.7.1 Patch release

This is a patch release based on version 1.3.0. We have addressed the following issues:

- · Fixed: when grouping transformations were applied to the structure, adjusting tasks or creating dependencies did not work as expected
- Fixed: milestones weren't filtered out by the Resource filter action
- · Fixed:when the "Prefer Story Points over Time Tracking" option was selected, task progress was calculated using time spent, rather than status
- Fixed: it was impossible to alter a gadget's configuration after its creation
- Fixed: when a gadget's "Visible rows" setting was left empty, the gadget failed to display all rows

### 9.7.7.2 Installation and Upgrade

Structure.Gantt 1.3.1 requires Structure 5.1 or above.

If you already have production data from a previous version of Structure. Gantt, please consider backing up your data before upgrading.

### 9.7.7.3 Enterprise deployment notes

Structure.Gantt 1.3.1 does not introduce changes that could affect performance. We advise you to perform the usual testing on a staging server.

<sup>101</sup> mailto:support@almworks.com

<sup>102</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview

### 9.7.8 Structure.Gantt 1.3.2 Release Notes



### i 29<sup>th</sup> of December, 2018

Structure.Gantt 1.3.2 adds compatibility with Atlassian Jira 8.0

Download App(see page 146) Structure.Gantt on Atlassian Marketplace<sup>103</sup>



⚠ Structure.Gantt will become a paid app beginning with release 2.0.

#### 9.7.8.1 Patch Release

Starting from this version Structure. Gantt is compatible with Atlassian Jira 8.0.

### 9.7.8.2 Installation and Upgrade

Structure.Gantt 1.3.2 requires Structure 5.1 or above. Please, note that Structure 5.2 is required to run Structure.Gantt 1.3.2 on Jira 8.0.

If you already have production data from a previous version of Structure. Gantt, please consider backing up your data before upgrading.

#### 9.7.8.3 Enterprise Deployment Notes

Structure.Gantt 1.3.2 does not introduce changes that could affect performance. We advise you to perform the usual testing on a staging server.

### 9.8 Structure Gantt 1.2 Release Notes



### (i) 18<sup>th</sup> of July, 2018

Structure.Gantt 1.2 introduces chart export into PDF/SVG and Jira and Confluence gadget.

Download App(see page 146)

Structure.Gantt on Atlassian Marketplace<sup>104</sup>

Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required 105

<sup>103</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 104 https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 105 http://alm.works/gantt-demo

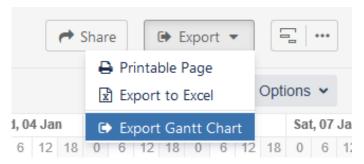
### 9.8.1 Version Highlights

- Export chart into a PDF or SVG file
- Ability to add Gantt chart to Jira Dashboard and Confluence pages

### 9.8.2 Changes in Detail

#### 9.8.2.1 Export Gantt chart into a PDF or SVG file

It is now possible to export Gantt chart into a PDF or SVG file.



Documentation: Exporting to a Printable File(see page 78)

### 9.8.2.2 Ability to add Gantt chart to Jira Dashboard and Confluence pages

Structure. Gantt gadget can now be placed on Jira Dashboard or embedded into a Confluence page.

Documentation: Using Gadgets(see page 82)

# 9.8.3 Supported Versions

Structure.Gantt 1.2 requires Structure 4.6 or above.

We support all editions of Jira (Jira Core, Jira Software, Jira Service Desk) of versions 7.2 or later. Jira Data Center is supported too.

# 9.8.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please back up your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings are correct.

#### 9.8.5 Known issues

Below are a few known issues and non-obvious cases.

• If a formula is selected as the source for resource assignment, any changes made to this formula after the resource list has been built will be ignored. For example, if your formula had a variable assigned to one field

and you reassign that variable to another field after the resource list has already been built, the resource list will not be updated to reflect this change.

- The visibility of timeline bars depends on the permission settings of the structure owner (not just the current user). If a structure owner does not have permission to see an issue, they will not be able to see them on the Gantt chart.
- Maximum of 50 agile boards are available (in order of creation, oldest first) in the "Show Sprints from Board" dropdown menu under Fix Versions and Sprints Timeline Settings.
- User icons from external sites (like Gravatar) will be replaced with uniform user icons during PDF/SVG
- Due to Adobe PDF limitations, maximum size of extracted Gantt chart can't exceed 200 inches (508 cm) by any side, and although most web browsers will open such PDFs without problem, Adobe Acrobat Reader will report an issue and crop the exported chart. We recommend using SVG export for huge charts instead.

### 9.8.6 Enterprise Deployment Notes

Structure. Gantt 1.2 does not introduce changes that could affect performance. We advise you to perform the usual testing on a staging server.

(i) Should you have any questions on Enterprise Deployment, let us know at support@almworks.com<sup>106</sup>.

### 9.8.7 Structure.Gantt 1.2.1 Release Notes

(i) 21<sup>th</sup> of August, 2018

Structure.Gantt 1.2.1 is a patch release based on Structure.Gantt 1.2.0

Download App (see page 146)

Structure.Gantt on Atlassian Marketplace<sup>107</sup>

#### 9.8.7.1 Patch release

This is a patch release based on version 1.2.0. We have addressed the following issues:

- Fixed: an issue with selecting Agile Board for Sprints visualization in a case where there are more than 50 boards configured
- Fixed: an issue when task duration and estimate may be calculated incorrectly if Manual Finish is defined and 24 hours calendar is used
- Fixed: broken icons when exporting into PDF with Firefox and IE 11 browser and using grouping
- Fixed: an input collapse while editing manual attribute specification (manual scheduling, progress or resource attribute editors)
- Fixed: for both start and finish manually scheduled tasks duration can't be less than default estimate

#### 9.8.7.2 Installation and Upgrade

Structure.Gantt 1.2.1 requires Structure 4.6 or above.

106 mailto:support@almworks.com

107 https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview

If you already have production data from a previous version of Structure. Gantt, please consider backing up your data before upgrading.

### 9.8.7.3 Enterprise deployment notes

Structure. Gantt 1.2.1 does not introduce changes that could affect performance. We advise you to perform the usual testing on a staging server.

### 9.9 Structure. Gantt 1.1 Release Notes



### i 17<sup>th</sup> of May, 2018

Structure.Gantt 1.1 introduces Sprints and Fix Versions visualization at the timeline, redesigned Gantt configuration and ability to use Custom field or formula for progress calculation.

Download App(see page 146)

Structure.Gantt on Atlassian Marketplace<sup>108</sup>

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### 9.9.1 Version Highlights

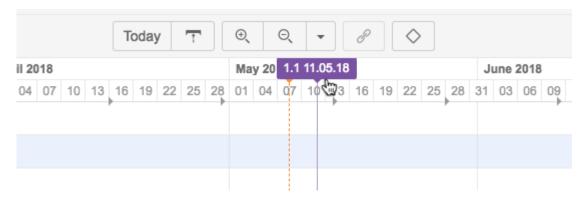
- Visualization of Sprints and Fix Versions on the timeline
- Redesigned Gantt Configuration dialog
- Ability to use Custom Fields or Formulas(see page 181) as a source for Task Progress
- · Greatly improved performance

### 9.9.2 Changes in Detail

#### 9.9.2.1 Visualization of Sprints and Fix Versions

It is now possible to show Sprints and Fix Versions on the timeline. You can select which Boards and Projects should be used as the source.

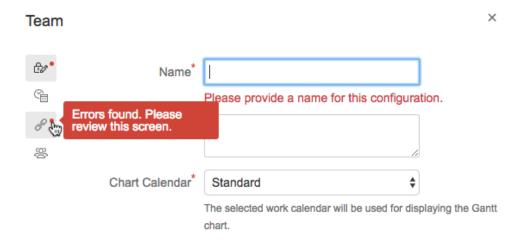
<sup>108</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 109 http://alm.works/gantt-demo



Documentation: Gantt configuration in Details<sup>110</sup>.

### 9.9.2.2 Redesigned Gantt Configuration dialog

User interface for Gantt configuration was redesigned. Now it's much easier to switch between configurations, edit the current configuration, see if there are any errors in it and fix them.



Documentation: Gantt configuration in Details<sup>111</sup>.

#### 9.9.2.3 Ability to use numeric Custom Fields or Formulas for progress calculation

It is now also possible to use any numeric Custom Field or a Structure Formula(see page 181) for Progress.

Documentation: Progress configuration(see page 103)

#### 9.9.2.4 Performance improvements

A major performance issue was fixed, so Gantt calculation now completes much faster.

<sup>110</sup> https://wiki.almworks.com/display/gantt/Gantt+Configuration+in+Details 111 https://wiki.almworks.com/display/gantt/Gantt+Configuration+in+Details

### 9.9.3 Supported Versions

Structure. Gantt 1.1 requires Structure 4.6 or above.

We support all editions of Jira (Jira Core, Jira Software, Jira Service Desk) of versions 7.2 or later. Jira Data Center is supported too.

### 9.9.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please backup your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings are correct.

#### 9.9.5 Known issues

Below are a few known issues and non-obvious cases.

- In some cases removed dependency will be removed from the Jira but may still be visualized on the chart, manual browser page refresh fixes the problem.
- If you are working with issues in multiple time zones, their alignment will be slightly off on the timeline. This may result in a small error in the calculation of the parent issue dates (if grouping is used) or may lead to an issue being excluded from the critical path, because this deviation adds a small gap between issues.
- If a formula is selected as the source for resource assignment, any changes made to this formula after the resource list has been built will be ignored. For example, if your formula had a variable assigned to one field and you reassign that variable to another field after the resource list has already been built, the resource list will not be updated to reflect this change.
- The visibility of timeline bars depends on the permission settings of the structure owner (not just the current user). If a structure owner does not have permission to see an issue they will not be able to see them on the Gantt chart.

### 9.9.6 Enterprise Deployment Notes

Structure.Gantt 1.1 introduces functionality for defining progress calculation based on custom fields or a Structure Formulas. Using such configurations may require more complex calculations and result in higher performance load. It is recommended to test Structure.Gantt 1.1 with different progress configurations at staging servers before using them in production.

The following configurations may require special attention:

- Progress based on complex Structure Formulas
- · Progress based on scripted fields



#### 9.9.7 Structure.Gantt 1.1.1 Release Notes



#### i 14<sup>th</sup> of June, 2018

Structure.Gantt 1.1.1 adds Jira 7.10 compatibility along with several bug fixes and improvements.

Download App (see page 146) Structure.Gantt on Atlassian Marketplace<sup>113</sup>

#### 9.9.7.1 Patch release

This is a patch release based on version 1.1. This upgrade is recommended for all customers.

Starting from this version, Structure. Gantt is compatible with Jira 7.10. We are still working on making Structure.Gantt's user interface match the new look and feel of Jira 7.10. The app is perfectly usable, but you can still see some older-style controls and some differences with Structure's controls. We are planning to complete the redesign in the next feature version.



Important: Custom progress format, introduced in version 1.1, has changed in this patch. If you have Gantt charts where progress is calculated based on a formula or a special custom field, you need to review the configuration and make sure that the progress values range from 0.0 to 100.0 (not from 0.0 to 1.0).

If you use a formula, just multiply it by 100.

If you use a custom field with a progress value, you can either update all the values in that field or, if you'd like to continue to use values from 0.0 to 1.0 in the Jira field, use a formula for Gantt progress and multiply the custom field's value by 100.

We also addressed the following issues:

- Fixed: an error while saving Gantt Configuration on Jira Data Center
- Fixed: an error when removing Group transformations
- · Fixed: undoing dependency creation removes the Jira link correctly, but does not remove the dependency on the Gantt chart
- Fixed: progress disappears when adding a Group transformation
- Fixed: progress disappears on all charts if a custom field used for progress in one of the configurations is removed from Jira

#### 9.9.7.2 Installation and Upgrade

Structure.Gantt 1.1.1 requires Structure 4.6 or above.

If you already have production data from a previous version of Structure. Gantt, please back up your database or Jira before upgrading.

Please review your Gantt configurations after upgrading to check that your settings remain correct.

<sup>113</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview

### 9.9.7.3 Enterprise deployment notes

Structure. Gantt 1.1.1 does not introduce changes that could affect performance. We advise you to perform the usual testing on a staging server.

### 9.10 Structure.Gantt 1.0 Release Notes



#### i 29<sup>th</sup> of December, 2017

ALM Works is happy to release Structure. Gantt 1.0, our first General Availability release.

Download App(see page 146)

Structure.Gantt on Atlassian Marketplace 114

Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required 115

Structure. Gantt is an extension to Structure, the Jira app used by more than 4,000 Atlassian customers worldwide to organize their issues in user-defined, multi-level hierarchies. Structure. Gantt enables you to display Jira project data in familiar Gantt charts so you can instantly visualize issue dependencies, timelines and understand resource allocation on a global scale. Designed to fit your current Jira configuration as is, Structure. Gantt is flexible, fast, and currently free for customers with a Structure license.

### 9.10.1 Version Highlights

- First ever Gantt Charts extension to Structure<sup>116</sup>!
- Easy creation of new structures with Gantt chart with Gantt Chart wizard
- Timelines, dependencies, resource allocation and more
- Good performance on structures of up to 10,000 issues

### 9.10.2 Getting Started

To start using Structure. Gantt on your Jira, follow a 5-minute installation and setup instructions in Quick Start Guide(see page 185).

### 9.10.3 Supported Versions

Structure.Gantt 1.0 requires Structure 4.5 or above.

Jira versions 7.2 or later supported. All editions of Jira (Jira Core, Jira Software, Jira Service Desk) are supported. Jira Data Center is supported.

<sup>114</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview

<sup>115</sup> http://alm.works/gantt-demo

<sup>116</sup> https://marketplace.atlassian.com/plugins/com.almworks.jira.structure/server/overview

### 9.10.4 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please backup your database or Jira before upgrading.

Please review your Gantt configuration after upgrading to check that your settings are correct. Also, be aware, there is the new Resolution Date scheduling option which is enabled by default.

#### 9.10.5 Known issues

Below are a few known issues and non-obvious cases.

- If you are working with issues in multiple time zones, their alignment will be slightly off on the timeline. This may result in a small error in the calculation of the parent issue dates (if grouping is used) or may lead to an issue being excluded from the critical path, because this deviation adds a small gap between issues.
- If a formula is selected as the source for resource assignment, any changes made to this formula after the resource list has been built will be ignored. For example, if your formula had a variable assigned to one field and you reassign that variable to another field after the resource list has already been built, the resource list will not be updated to reflect this change.
- The visibility of timeline bars depends on the permission settings of the structure owner (not just the current user). If a structure owner does not have permission to see an issue they will not be able to see them on the Gantt chart.
- If you are migrating from the Structure.Gantt Beta release the tasks that are assigned to a resource with the capacity higher than 1 will now take longer. That's because we have introduced the Maximum Units parameter, which sets the maximum number of resource units that can be used for the task. This parameter is set to 1 by default.
- Default task duration default for newly created Gantt configurations is now 1 day (previously it was 1 hour).

### 9.10.6 Enterprise Deployment Notes

See Enterprise Deployment(see page 139) notes in the product documentation.

#### 9.10.7 Structure.Gantt 1.0.1 Release Notes



### 6 5<sup>th</sup> of February, 2018

Structure.Gantt 1.0.1 adds several improvements and performance optimizations to version 1.0.

Download App(see page 146) Structure.Gantt on Atlassian Marketplace<sup>117</sup>

Try Structure.Gantt at Our Demo Server - No Installation or Sign-up Required 118

<sup>117</sup> https://marketplace.atlassian.com/plugins/com.almworks.structure.gantt/server/overview 118 http://alm.works/gantt-demo

#### 9.10.7.1 Patch Release

This is a patch release based on Structure.Gantt 1.0. Upgrade is recommended to all customers using version 1.0 or pre-GA versions.

The patch includes:

- Navigation to an assigned resource from the Task Info pop-up
- Improved deleting Gantt configurations
- Performance improvements

#### 9.10.7.2 Supported Versions

Structure.Gantt 1.0.1 requires Structure 4.5 or above. Jira versions from 7.2 or later are supported. All editions of Jira (Jira Core, Jira Software, Jira Service Desk) are supported. Jira Data Center is supported.

### 9.10.7.3 Installation and Upgrade

If you already have production data from a previous version of Structure. Gantt, please backup your database or Jira before upgrading.

Please review your Gantt configuration after upgrading to check that your settings are correct.

## 10 Structure.Gantt Roadmap

Updated On	July 2020
Next Update	August 2020

In this roadmap, we'd like to share some features the Structure. Gantt team is going to work on in the near to mid term. The scope of this roadmap is 6 months to 1 year.

A few notes and disclaimers about the roadmap:

- We only list new, important functionality we are also going to work on other stuff, such as improving existing features, improving quality, improving user interface and adding minor features.
- · This document lists only upcoming features in Structure.Gantt. We're also working on Structure for Jira and other Structure extensions, which have their own roadmaps.
- The roadmap is subject to change. We will update it periodically so it reflects our current vision.
- We only describe features briefly. If you are interested in the details of some specific feature or can provide feedback and ideas, please let us know at gantt@almworks.com<sup>119</sup>



⚠ It is our general approach at ALM Works to focus on the quality of the product. Sometimes this means delivering a product later or changing plans and priorities, as unexpected dependencies and challenges appear. Therefore, while we try to adhere to the announced roadmap, by no means should it be considered an obligation from ALM Works, and it should not be relied upon when making purchasing decisions.

If you have any questions about our roadmap policy, please write to info@almworks.com<sup>120</sup>.

#### 10.1 Versions and Dates

We generally aim to release a minor version of Structure. Gantt every 1-2 months and a major version every year. The following is an approximate release schedule for the scope of this roadmap.

Target Month	Aug'20	Oct'20	Dec'20	Fed'20	Apr'21	Jul'21
Version	2.5	2.6	3.0	3.1	3.2	3.3

## 10.2 Roadmap

Here's the list of major features that we're planning to work on in Structure.Gatt 2.x series up until Structure.Gantt 3.0

<sup>119</sup> mailto:info@almworks.com. 120 mailto:info@almworks.com

- Additional Gantt Data as Structure Attributes ability to export additional Gantt data and use it in Structure columns ( Structure.Gantt 2.4)
- Agile Backlog more convenient way to work with agile tasks that weren't yet assigned to any sprints
- Actual Task Start and Finish ability to see when work on a task started and when it was finished
- Sandbox Mode ability to play with "what-if" scenarios, without affecting the data seen by other users

#### Planned for later:

- Multiple Resources ability to specify several resources along with their usage
- Artificial Tasks ability to create tasks not backed by Jira issues
- Resource Management more flexible way to manage resources and share them between several charts
- Editable Work Calendars a UI for managing calendars
- **Milestone-Driven and Non-Binary Critical Path** a way to calculate critical paths for a specific milestone and calculate a relative risk for a task to become critical
- **Split Tasks** supporting a way to break down a task into pieces when dependencies change and the task already has non-zero progress
- Calendars Integration integration with major providers of work calendars, such as Tempo, Portfolio
- **Structure of Structures, Gantt of Gantts** support configurations where a structure contains other structures and its Gantt imports the pre-calculated Gantt charts from those structures

### 11 Features and Limitations

Structure. Gantt is a relatively new product at the beginning of its journey. On this page, we list the features that are currently available *and* the features that will be coming later. Our goal is to continuously improve the power of Structure. Gantt and the benefits it provides, with each new release.

#### 11.1 Features

The following features are available in Structure. Gantt.

- Responsive, configurable, visual **Timeline**, showing tasks, dependencies and more
- Structure-generated work breakdown structures with folders and unlimited hierarchy
- Finish-to-Start, Finish-to-Finish, Start-to-Start and Start-to-Finish dependencies
- · Critical Path highlighting
- Milestones
- Automatic Scheduling driven by dependencies (as-soon-as-possible mode)
- Resource Leveling to automatically solve overallocations
- · Sprint-based Scheduling
- Manual Scheduling based on custom fields
- Baselines to track changes over time
- Effort estimation ("Work" value) based on **Time Tracking**, **Story Points**, a mix of both, or any other attribute or formula
- Flexible **Resource Allocation** charts based on the Assignee field, custom fields, or a Structure formula
- Per-resource time zone support and configurable calendars
- Flexible capacity management for resources via a Units value (number of people on a team), an Availability schedule (vacation, illness, etc.), and Max. Units that can be applied to tasks
- Progress based on Time Tracking, Story Points, or any other attribute or formula
- Slices to create different configurations for different issue types
- Gantt chart sharing based on Structure permissions settings
- Printing and Exporting
- Gadgets for Jira Dashboard and Confluence

## 11.2 Current Limitations / Roadmap

The following capabilities are **not** available, yet. We plan to introduce them in later versions. Keep an eye out for new releases!

- · Roadmapping: Version planning
- What-if Exploration (what happens if I change these values)
- Import from Microsoft Project (or other tools)
- Calendar Importing from other Jira apps
- As-late-as-possible scheduling
- Resource mapping
- · Split tasks and rescheduling of the remaining time
- Actual Start and Finish dates
- · Copying a Gantt chart

See Structure.Gantt Roadmap(see page 188) for additional information.

# 12 Open Source Licenses

Structure. Gantt is made possible by open source software.

The following is a list of open source libraries used in the product and links to their respective license agreements.

Component / Library	License
Annotations (JetBrains) <sup>121</sup>	Apache 2.0 <sup>122</sup>
Apache Commons <sup>123</sup>	Apache 2.0 <sup>124</sup>
Apache Derby <sup>125</sup>	Apache 2.0 <sup>126</sup>
blob-stream <sup>127</sup>	MIT license <sup>128</sup>
Canvas2SVG <sup>129</sup>	MIT license <sup>130</sup>
CharFunk <sup>131</sup>	MIT license <sup>132</sup>
ES6-Promise <sup>133</sup>	MIT license <sup>134</sup>
Font Awesome <sup>135</sup>	SIL OFL 1.1, MIT license <sup>136</sup>
Jackson <sup>137</sup>	Apache 2.0 <sup>138</sup>
jQuery <sup>139</sup>	MIT license <sup>140</sup>
Kotlin <sup>141</sup>	Apache 2.0 <sup>142</sup>

<sup>121</sup> https://github.com/JetBrains/java-annotations

<sup>122</sup> https://www.apache.org/licenses/LICENSE-2.0

<sup>123</sup> https://commons.apache.org/

<sup>124</sup> https://www.apache.org/licenses/LICENSE-2.0

<sup>125</sup> https://db.apache.org/derby/

<sup>126</sup> https://www.apache.org/licenses/LICENSE-2.0

<sup>127</sup> https://github.com/devongovett/blob-stream

<sup>128</sup> https://github.com/devongovett/blob-stream/blob/master/LICENSE

<sup>129</sup> https://gliffy.github.io/canvas2svg/

<sup>130</sup> https://github.com/gliffy/canvas2svg/blob/master/LICENSE

<sup>131</sup> https://github.com/joelarson4/CharFunk

<sup>132</sup> https://github.com/joelarson4/CharFunk/blob/master/LICENSE

<sup>133</sup> https://github.com/stefanpenner/es6-promise

<sup>134</sup> https://github.com/stefanpenner/es6-promise/blob/master/LICENSE

<sup>135</sup> https://fontawesome.com/

<sup>136</sup> https://fontawesome.com/v4.7.0/license/

<sup>137</sup> https://github.com/FasterXML/jackson

<sup>138</sup> https://www.apache.org/licenses/LICENSE-2.0

<sup>139</sup> https://jquery.com/

<sup>140</sup> https://jquery.org/license/

<sup>141</sup> https://kotlinlang.org/

<sup>142</sup> https://github.com/JetBrains/kotlin/blob/master/license/LICENSE.txt

Component / Library	License
moment-jdateformatparser <sup>143</sup>	MIT license <sup>144</sup>
Moment.js <sup>145</sup>	MIT license <sup>146</sup>
PDFKit <sup>147</sup>	MIT license <sup>148</sup>
tslib <sup>149</sup>	Apache 2.0 <sup>150</sup>

ALM Works is a proud participant of Pledge 1%.<sup>151</sup> As a part of our pledge to donate 1% of equity, product and time to the community, we're offering all our products free of charge to open-source projects and community projects. You can request a license through Atlassian's Open Source License Request<sup>152</sup> page or Community License Request<sup>153</sup> page. Should you have any questions or need assistance, please let us know at support@almworks.com<sup>154</sup>.

<sup>143</sup> https://github.com/MadMG/moment-jdateformatparser

<sup>144</sup> https://github.com/MadMG/moment-jdateformatparser/blob/master/LICENSE

<sup>145</sup> https://momentjs.com/

<sup>146</sup> https://github.com/moment/moment/blob/develop/LICENSE

<sup>147</sup> https://pdfkit.org/

<sup>148</sup> https://github.com/foliojs/pdfkit/blob/master/LICENSE

<sup>149</sup> https://github.com/microsoft/tslib

<sup>150</sup> https://github.com/microsoft/tslib/blob/master/LICENSE.txt

<sup>151</sup> https://pledge1percent.org/

<sup>152</sup> https://www.atlassian.com/software/views/open-source-license-request

<sup>153</sup> https://www.atlassian.com/software/views/community-license-request

<sup>154</sup> mailto:support@almworks.com