Native Iterations

In this page, it's explained how to export a property when it has more than a single value such as:

- Issue Activity
- Issue History
  - Exportable Data
- Issue Links
  - Exportable Data
- Issue Comments
- Issue Worklogs
- Issue Sub-Tasks
- Issue Components
- Issue Status Transitions
- Issue Attached Images
- Issue Attachments
- Issue Labels
- Project Versions

The Document Generator also provides data filtering and sorting directly on the iteration definition. Read the following topics:

- Iterating JQL Queries
- Applying filters to Iterations
- Iterating in the same line of the document
- Iterating in the same cell in an Excel document
- Iterating with the BREAK or CONTINUE statement
- Iterating Parent Issues
- Sorting iterations

Issue Activity

Changes to issues are registered in the Issue Activity, but it is not known in advance how many changes are going to be made. You can iterate a section over all the activities of an issue. This allows you to create a table that dynamically grows according to the number of existing activities. The notation is:

Activity Fields	Description
Title	The title of the issue
Summary	The summary of the activity
Content	When an activity involves a change in the Issue contents, this field displays the new contents
Author	The author of the activity
AuthorEmail	The email of the author of the activity
Published	The time the issue was published
Updated	The time the issue was updated
Categories	When an activity regards an Issue Status change, this field displays the new Issue Status

Expand to see the sample code

```
    #{for activityEntries}
   ${ActivityEntries[n].Title}
   ${ActivityEntries[n].Summary}
   ${ActivityEntries[n].Content}
   ${ActivityEntries[n].Author}
   ${ActivityEntries[n].AuthorEmail}
   ${dateformat("dd-MM-yyyy HH:mm:ss"):ActivityEntries[n].Published}
   ${dateformat("dd-MM-yyyy HH:mm:ss"):ActivityEntries[n].Updated}
   ${ActivityEntries[n].Categories}
#{end}

or

#{for <VariableName>=ActivityEntriesCount}
   Content and Issue Mappings. Example: ${ActivityEntries[VariableName].Field}
#{end}
```

We suggest that you use the **html function** to render the data because almost all content is HTML, e.g., ${html:ActivityEntries[n].Title}

Below are two examples of using the Activity iteration in a Word and Excel template:

blocked URL Iterating_Activity_Entries.docx

blocked URL Iterating_Activity_Entries.xlsx

Issue History

You can iterate a section over all the history entries of an issue. This allows you to create a table that dynamically grows according to the number of changes done.

Exportable Data

Field	Description
HistoryEntriesCount	Returns the number of changes made.
Author	Returns the user who made the change.
Created	Date of the change
ChangedItemsCout	Returns the number of fields changed in the current change.
ChangedItem	<table><tr><th>Field</th><th>Description</th></tr><tr><td>Field</td><td>Returns the name of the field which the value was changed.</td></tr><tr><td>From</td><td>Returns the old value.</td></tr><tr><td>To</td><td>Returns the new value.</td></tr></table>

The notation is:

Expand to see the sample code

```
    #{for historyEntries}
   ${fullname:HistoryEntries[n].Author} made changes ${dateformat("dd-MM-yyyy HH:mm:ss"):HistoryEntries[n].
Created}
  #{for ch=HistoryEntries[n].ChangedItemsCount}
        Field Name: ${HistoryEntries[n].ChangedItems[ch].Field}
        Old Value:  ${HistoryEntries[n].ChangedItems[ch].From}
        New Value:  ${HistoryEntries[n].ChangedItems[ch].To}
  #{end}
#{end}

or

#{for h=HistoryEntriesCount}
   ${fullname:HistoryEntries[h].Author} made changes    ${dateformat("dd-MM-yyyy HH:mm:ss"):HistoryEntries[h].
Created}
   #{for ch=HistoryEntries[h].ChangedItemsCount}
        Field Name: ${HistoryEntries[h].ChangedItems[ch].Field}
        Old Value:  ${HistoryEntries[h].ChangedItems[ch].From}
        New Value:  ${HistoryEntries[h].ChangedItems[ch].To}
   #{end}
#{end}
```

Issue Links

Because it is not known in advance how many linked issues exist for an issue, you can iterate a section over all the linked issues of an issue. This allows you to create a table that dynamically grows according to the number of existing linked issues.

Exportable Data

Field	Description
AppType	Returns the Application Type. The values can be: **Application Value** / **Description** **JIRA** — Link from the same Jira Instance **External Jira** — Link from the another Jira Instance **Confluence** — Link from a Confluence page **External** — External link
LinkType	Returns the Link Type.

Note: When the link you are iterating is of AppTypes **External Jira** or **Confluence,** the name is obtained using the Summary property.

The notation is:

Expand to see the sample code

```
    #{for links}
   ${Links[n].AppType}
   ${Links[n].LinkType}
   ${Links[n].Key}
   ${Links[n].Summary}
   ${Links[n].URL}
#{end}

or

#{for <VariableName>=LinksCount}
   Content and Linked Issue Mappings. Example: ${Links[VariableName].Field}
#{end}
```

The documents below demonstrates an example of a template that iterates over linked issues.

blocked URL Iterating_Issue_Links.docx

blocked URL Iterating_Issue_Links.xlsx

Issue Comments

Because it is not known in advance how many comments exist for an issue, you can iterate a section over all the comments on an issue. This allows you to create a table that dynamically grows according to the number of existing comments. The notation is:

Comments Fields	Description
Author	The author of the comment
AuthorFullName	The full name of the author of the comment
Body	The comment
Created	The date the comment was posted
GroupLevel	The group level of the comment

Expand to see the sample code

```
    #{for comments}
   ${Comments[n].Author}
   ${Comments[n].AuthorFullName}
   ${Comments[n].Body}
   ${dateformat("dd-MM-yyyy HH:mm:ss"):Comments[n].Created}
   ${Comments[n].GroupLevel}
#{end}

or

#{for <VariableName>=CommentsCount}
   Content and Issue Mappings. Example: ${Comments[VariableName].Field}
#{end}
```

The documents below demonstrate an example of a Word template that iterates over issue comments.

blocked URL Iterating_Issue_Comments.docx

blocked URL Iterating_Issue_Comments.xlsx

Issue Worklogs

Because it is not known in advance how many worklogs exist for an issue, you can iterate a section over all the worklogs of an issue. This allow you to create a table that dynamically grows according to the number of existing worklogs. The notation is:

Worklogs Fields	Description
Author	The author of the worklog
AuthorFullName	The full name of the author of the worklog
Comment	The comment of the worklog
Created	The date the worklog was created
Date Started	The date the worklog was started
Time Spent	The time spent in seconds
TimeSpentFormatted	The time spent as displayed on Jira
BilledHours	The billed hours in seconds (**Belongs to Tempo Timesheets plugin**)
BilledHoursFormatted	The billed hours as displayed on Jira (**Belongs to Tempo Timesheets plugin**)

Expand to see the sample code

```
    #{for worklogs}
   ${Worklogs[n].Author}
   ${Worklogs[n].AuthorFullName}
   ${Worklogs[n].Comment}
   ${dateformat("dd-MM-yyyy HH:mm:ss"):Worklogs[n].Created}
   ${dateformat("dd-MM-yyyy HH:mm:ss"):Worklogs[n].Date Started}
   ${Worklogs[n].Time Spent}
   ${Worklogs[n].TimeSpentFormatted}
#{end}

or

#{for <VariableName>=WorklogsCount}
   Content and Worklog Mappings. Example: ${Worklogs[VariableName].Field}
#{end}
```

Issue Sub-Tasks

Because it is not known in advance how many subtasks exist for an issue, you can iterate a section over all the subtasks of an issue. This allows you to create a table that dynamically grows according to the number of existing subtasks. The notation is:

Subtasks Fields	Description
Key	The key of the subtasks
Summary	The summary of the subtasks
AssigneeUserDisplayName	The assignee user of the subtasks

Expand to see the sample code

```
    #{for subtasks}
   ${Subtasks[n].Key}
   ${Subtasks[n].Summary}
   ${Subtasks[n].AssigneeUserDisplayName}
#{end}

or

#{for <VariableName>=SubtasksCount}
   Content and Issue Mappings. Example: ${Subtasks[VariableName].Field}
#{end}
```

The documents below demonstrate an example of a template that iterates over issue subtasks.

blocked URL Iterating_Issue_Subtasks.docx

blocked URL Iterating_Issue_Subtasks.xlsx

For an example of how to iterate the details of a subtask Parent issue, please check the Iterating JQL Queries area below.

Issue Components

Because it is not known in advance how many components exist for an issue, you can iterate a section over all the components of an issue. This allows you to create a table that dynamically grows according to the number of existing components. The notation is:

Components Fields	Description
Name	The name of the component
Description	The description of the component
Lead	The name of the component lead
Id	The ID of the component
ProjectId	The project ID of the component
AssigneeType	The assignee type of the component

Expand to see the sample code

```
    #{for components}
   ${Components[n].Name}
   ${Components[n].Description}
   ${fullname:Components[n].Lead}
   ${Components[n].Id}
   ${Components[n].ProjectId}
   ${Components[n].AssigneeType}
#{end}
```

The documents below demonstrate an example of a template that iterates over issue components.

blocked URL Iterating_Issue_Components.docx

blocked URL Iterating_Issue_Components.xlsx

Issue Status Transitions

Because it is not known in advance how many Status Transitions exist for an issue, you can iterate a section over all the Status Transitions of an issue. This allows you to create a table that dynamically grows according to the number of existing status transitions. The notation is:

Status Transitions Fields	Description
Author	The author of the status transition
Created	The date the status transition was performed
OldStatus	The old status of the status transition
NewStatus	The new status of the status transition

Expand to see the sample code

```
    #{for statusTransitions}
   ${StatusTransitions[n].Author}
   ${dateformat("dd-MM-yyyy HH:mm:ss"):StatusTransitions[n].Created}
   ${StatusTransitions[n].OldStatus}
   ${StatusTransitions[n].NewStatus}
#{end}

or

#{for <VariableName>=StatusTransitionsCount}
   Content and StatusTransitions Mappings. Example: ${StatusTransitions[VariableName].Field}
#{end}
```

The documents below demonstrate an example of a template that iterates over status transitions.

blocked URL Iterating_Issue_StatusTransitions.docx

blocked URL Iterating_Issue_StatusTransitions.xlsx

Issue Attached Images

Because it is not known in advance how many Images can exist for an issue (as an attachment), you can iterate a section over all the attached images of an issue to get some metadata about them. This allows you to create a table that dynamically grows according to the number of existing images. The notation is:

Attachments Images Fields	Description
ID	The ID of the attached image
Image	The image of the attached image
Name	The name of the attached image
Size	The size of the attached image
HumanReadableSize	The size of the attached image
Author	The author of the attached image
Created	The date the attached image was created
MimeType	The type of the attached image
ThumbnailURL	The URL to the thumbnail of the image

Expand to see the sample code

```
    #{for images}
   ${Images[n].Image|maxwidth=150|maxheight=150}
   ${Images[n].Name}
   ${Images[n].ID}
   ${Images[n].Size}
   ${Images[n].HumanReadableSize}
   ${Images[n].Author}
   ${dateformat("dd-MM-yyyy HH:mm:ss"):Images[n].Created}
   ${Images[n].MimeType}
   ${Images[n].ThumbnailURL}
 #{end}

or

#{for <VariableName>=ImagesCount}
   Content and Images Mappings. Example: ${Images[VariableName].Field}
#{end}
```

The image below demonstrates an example of a Word template that iterates over attached images.

blocked URL Iterating_Issue_Images.docx

Doc. Generator will automatically read the EXIF orientation property of an image and rotate it to its correct orientation. You can turn this off by adding this property to your template.

Expand to see the sample code

```
    #{for images}
   ${Images[n].Image|width=150|height=150}
 #{end}
```

These values are in pixels and if you only define one of them the image will be rescaled.

Note that, if you use both maxWidth and width mappings, only the max value will be read. The same behavior happens with height and maxHeight.

The documents below demonstrate an example of an Excel template that iterates over attached images.

blocked URL Iterating_Issue_Images.xlsx

Issue Attachments

Because it is not known in advance how many attachments exist in an issue, you can iterate a section over all the attachments of an issue. This allows you to create a table that dynamically grows according to the number of existing attachments. The notation is:

Attachments Fields	Description
ID	The ID of the attachment
Name	The name of the attachment
Author	The author of the attachment
AuthorFullName	The full name of the author of the attachment
Created	The date the attachment was created

Size	The size of the attachment
HumanReadableSize	The formatted size of the attachment
MimeType	The type of the attachment

Expand to see the sample code

```
    #{for attachments}
   ${Attachments[n].ID}
   ${Attachments[n].Name}
   ${Attachments[n].Author}
   ${Attachments[n].AuthorFullName}
   ${dateformat("dd-MM-yyyy HH:mm:ss"):Attachments[n].Created}
   ${Attachments[n].Size}
   ${Attachments[n].HumanReadableSize}
   ${Attachments[n].MimeType}
#{end}

or

#{for <VariableName>=AttachmentsCount}
   Content and Issue Mappings. Example: ${Attachments[VariableName].Field}
#{end}
```

The documents below demonstrate an example of a template that iterates over attachments.

blocked URL Iterating_Issue_Attachments.docx

blocked URL Iterating_Issue_Attachments.xlsx

Issue Labels

Because it is not known in advance how many labels exist in an issue, you can iterate a section over all the labels of an issue. The notation is:

Attachments Fields	Description
Name	The name of the label

```
    #{for labels}
   ${Labels[n].Name}
#{end}

or

#{for <VariableName>=LabelsCount}
  ${Labels[VariableName].Name}
#{end}
```

The documents below demonstrate an example of a template that iterates over labels.

blocked URL Iterating_Issue_Labels.docx

blocked URL Iterating_Issue_Labels.xlsx

Project Versions

You can iterate over all project versions to which the issue belong to. The notation is:

Attachments Fields	Description
Name	The name of the project version
Description	The description of the project version

`Start date`	The Start Date of the project version
`Release date`	The Release Date of the project version

```
    #{for projectVersions}
   ${ProjectVersions[n].Name}
   ${ProjectVersions[n].Description}
   ${dateformat("dd-MM-yyyy"):ProjectVersions[n].Start date}
   ${dateformat("dd-MM-yyyy"):ProjectVersions[n].Release date}
#{end}

or

#{for <VariableName>=ProjectVersionsCount}
   ${ProjectVersions[VariableName].Name}
   ${ProjectVersions[VariableName].Description}
   ${dateformat("dd-MM-yyyy"):ProjectVersions[VariableName].Start date}
   ${dateformat("dd-MM-yyyy"):ProjectVersions[VariableName].Release date}
#{end}
```

The documents below demonstrate an example of a template that iterates over project version.

blocked URL Iterating_Issue_ProjectVersions.docx

blocked URL Iterating_Issue_ProjectVersions.xlsx

Iterating JQL Queries

You can iterate issues that are the result of a JQL Query. The syntax is similar to the other iterations, but there is a **clause** parameter that will receive the JQL Query. A few examples are provided below.

Expand to see the sample code

```
    a simple example iterating the details of issues from a specified Project:

#{for i=JQLIssuesCount|clause=project = DEMO}
   ${JQLIssues[i].Key}
   ${JQLIssues[i].Summary}
#{end}

or a more advanced example iterating the details of issues linked with the current Issue:

#{for m=JQLIssuesCount|clause=issuekey in linkedIssues (${Links[j].Key})}
   Linked Issue ${JQLIssues[m].Summary} has ${JQLIssues[m].LinksCount} links
#{end}

or an also advanced example iterating the details of the Parent issue from the current Subtask:

#{for i=JQLIssuesCount|clause=issuekey = ${ParentIssueKey}}
        ${JQLIssues[i].Key}
        ${JQLIssues[i].Id}
        ${JQLIssues[i].Description}
#{end}
```

The documents below demonstrate an example of a template that iterates over issue subtasks.

blocked URL Iterating_JQLIssues.docx

blocked URL Iterating_JQLIssues.xlsx

You can also use a Filter Name or a Filter Id as a clause. For more info, read this.

Applying filters to Iterations

If you want to take the previous iterations over comments, subtasks and issue links to another level of control, you can use a JavaScript filter to define over which issues the iteration will be made. This can be useful in the following scenarios:

- Iterating over linked issues that are only of a specific issue type
- Iterating over subtasks of a specific issue type
- Iterating over linked issues with a specific priority
- Iterating over comments created by a specific user

The notation for applying filters to the iterations is:

Expand to see the sample code

```
    #{for <VariableName>=<LinksCount|SubtasksCount|CommentsCount|WorklogsCount>|filter=%{<Javascript>}}
   Content here
#{end}
```

- **VariableName** is the name of the variable to use as the iteration index.
- **LinksCount|SubtasksCount|CommentsCount** indicates over which type of entities you want to iterate.
- **Filter** indicates the filter to be applied in the iteration.

Notice that as the filter is evaluated as a JavaScript expression, which provides flexibility in the definition of the conditions. You can use and (&&), or (||) and other logical operators supported by the JavaScript language.

It is also possible to format fields inside iteration filters. For more information on formatters, see Native Iterations.

The image below demonstrates an example of a template that iterates over issue links and comments with filters being applied.

Links Bugs with High Priority:

blocked URL Links_Bugs_HighPriority.docx

Nested Iterations:

blocked URL Links_Nested_Iterations.docx

Iterating in the same line of the document

You can also possible to iterate values in the same line of the document. This can be useful if you want to display a list of Subtasks on Linked Issues in the same line, separated by commas or spaces.

Expand to see the sample code

```
    Users that added comments to this issue: #{for comments}${Comments[n].Author} #{end}

Subtasks of this issue: #{for j=SubtasksCount}${Subtasks[j].Key};#{end}

Linked issues this issue duplicates: #{for j=LinksCount|filter=%{'${Links[j].LinkType}'.equals
('duplicates')}}${Links[j].Key} #{end}
```

Iterating in the same cell in an Excel document

You can also iterate values in the same cell in an Excel document. You can achieve this by simply making your Iteration inside the same cell.

You can use all the Iterations that you are used to and construct them in the exact same way, the difference being that you only use one cell to do them.

Expand to see the sample code

```
    Issue iteration as a demonstration.
Copy this iteration below and paste it into a cell.

&{for issues} ${Key} &{end}
```

Iterating with the BREAK or CONTINUE statement

You can iterate anything, set up a Conditional expression and then utilize the BREAK and CONTINUE statements.

The way to do this is by doing a normal Conditional expression and using the mapping #{break} or #{continue} inside it.

Expand to see the sample code

```
    Imagine that you have a Jira Issue that contains these comments:
- Hello
- World
- Greetings
- Hi

For the Break functionality, lets say that you want to stop the iteration if the current comment is "World".
Here is the template for that:
#{for comments}
Current Comment: ${Comments[n].Body}
#{if (%{'${Comments[n].Body}'.equals('World')})}
#{break}
#{end}
Current Comment Author: ${Comments[n].Author}
#{end}
In this case, it will print the comment "Hello" and it´s author. Next it will print the comment Body "World"
but since the Conditional expression is true, it will stop the iteration all together and not print anything
else.
Note: Anything after the #{break} mapping will not be printed in the exported document.

For the Continue functionality, lets say that you want to skip to the next iteration if the current comment is
"World", bypassing the Author mapping for this iteration. Here is the template for that:
#{for comments}
Current Comment: ${Comments[n].Body}
#{if (%{'${Comments[n].Body}'.equals('World')})}
#{continue}
#{end}
Current Comment Author: ${Comments[n].Author}
#{end}
In this case, it will print the comment "Hello" and it´s author. Next, it will print the comment Body "World"
but since the Conditional expression is true, it will continue to the next iteration, not printing the Author
of the "World" comment.
```

Iterating Parent Issues

You can iterate a section over all the parent issues of an issue. This allows you to create a table that dynamically grows according to the information you want to see from parent issues.

Imagine that you have a Jira Issue that contains a Key, Summary, Description and further information. From now on, you are able to get all the information from a parent issue. In order to get those fields, you just need to have the following definition:

```
${Parent.<Field>}
```

Example:

Expand to see the sample code

```
    &{for issues|filter=%{'${IssueTypeName}'.equals('Sub-task')}}
   ${Parent.Key}
   ${Parent.Summary}
   ${Parent.Description}
   ${wiki:Parent.Description}
   ${html:Parent.Description}
   ${dateformat(“dd-MM-yyyy HH:mm:ss”):Parent.date}
   ${emailaddress:Parent.userpicker}
&{end}

This example only has a few fields, but this new feature allows you to get all information from a parent issue.
```

Sorting iterations

Imagine that you have an iteration and want to sort it by any field that it can export normally. This will be the header for such an iteration:

```
#{for comments|sortby=<Iteration mapping>}
```

NOTE: The mapping after the "sortby" must be equal to the supported mappings for each Iteration.

Example:

Expand to see the sample code

```
    This iteration will be sorted by the Body of all the comments in the issue.

#{for comments|sortby=Body}
${Comments[n].Author}
${Comments[n].Body}
#{end}
```

Sort By on multi issue export

The **sortby** can also be used to sort a &{for issues} iteration on a Bulk Export.

Expand to see the sample code

```
    &{for issues|sortby=IssueTypeName}
${Key} - ${IssueTypeName}
&{end}
```

Sorting Criteria

asc and **desc** can be defined in order to define how do you want to sort your data. The default value is **asc**.