Documentation Guide

OpenNMS v2015.1.8

Last updated 2017-10-19 11:16:42 EDT

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Chapter 1. Introduction

This document is the guideline for people who wish to contribute to writing documentation for the OpenNMS project. The OpenNMS software is free and open source, contribution of any kind is welcome. We ask that you observe the rules and guidelines outlined here to maintain consistency across the project.

Chapter 2. Overall Layout

Each (sub)project is represented as a section of the documentation. Each section will produce a HTML output in the file system that is generated in the `target/generated` sources folder.

The chosen file format for documentation is AsciiDoc (Asciidoc Homepage). Document files use the .adoc file extension.

Note that there are different ways to contribute documentation, each suitable for the different use cases:

- Tutorials and How To's should be published on the OpenNMS Wiki. For example: you want to describe how to use the Net-SNMP agent and the SNMP monitor from OpenNMS to solve a special use case with OpenNMS.
- The documentation in the source code should be formal technical documentation. The writing style should be accurate and concise. However, ensure that you explain concepts in detail and do not make omissions.

Chapter 3. File Structure in 'opennms-doc'

Directory	Contents
guide-doc/	module with this overview working on documentation
guide-user/	module with the guide for OpenNMS user e.g. NOC user who don’t change behavior of OpenNMS.
guide-admin/	module with the guide for administrators configuring, optimizing and running OpenNMS
guide-development/	module with the guide for those who want to develop OpenNMS
guide-install/	module with the guide of how to install OpenNMS on different operating systems
releasenotes/	module with the changelog and release notes

Chapter 4. Issues in JIRA and GitHub workflow

Changes in the official documentation and code base are tracked by JIRA - the issue tracker of OpenNMS. This is the main tool in the project to organize tasks and plan releases. When a new version of OpenNMS is released, all issues are reflected in the release notes.

It is required to have JIRA account for creating and commenting issues and a GitHub account for giving your contribution as *Pull Request*.

The main workflow to add or fix something is defined as the following:

1. Create an issue in JIRA. The issue number is a unique identifier and is used as a reference, e.g. NMS-7214
2. Fork OpenNMS to your private GitHub repository
3. Create a feature branch from `develop` with the following name schema: `NMS-<number>-<Your-Issue-Headline>`
4. Add a link of your working branch to your JIRA issue and allow others to help
5. Create or fix documentation
6. When you've finished, send a *Pull Request* of your changes to the OpenNMS repository
7. Add a review header in your *Pull Request* comment message
8. Add a link with to the *Pull Request* and ask for a review
9. If the review is worked in, the *Pull Request* will be merged into the codebase and is now in the official release cycle.

4.1. Example workflow creating documentation

The following example describes a workflow how to create a new documentation for the *DnsMonitor*.

- Everything starts with an JIRA issue

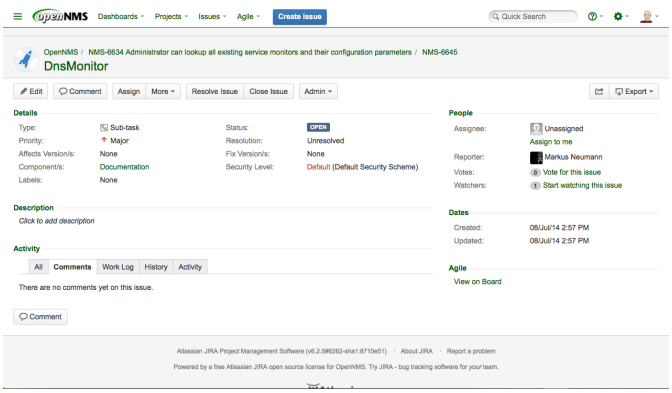


Figure 1. Create or pick an issue

- Fork the OpenNMS project in your GitHub repository.
- Go to your GitHub account with your repositories and create working branch from *develop*, which is the default so you don't have to change anything.
- Create a working branch for the JIRA issue you want to work on with the given name schema:

```
NMS-<number>-docs-<Subject-without-spaces>
```

For our example: `NMS-6634-docs-DnsMonitor`. This name is used later in the *Pull Request* and helps to identify and track changes driven by this issue. Type in the name in the input field and GitHub create the branch for you.

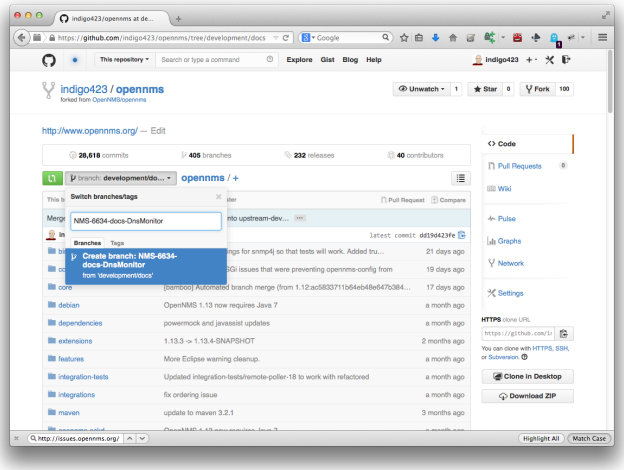


Figure 2. Create a working branch for the JIRA issue in your repository

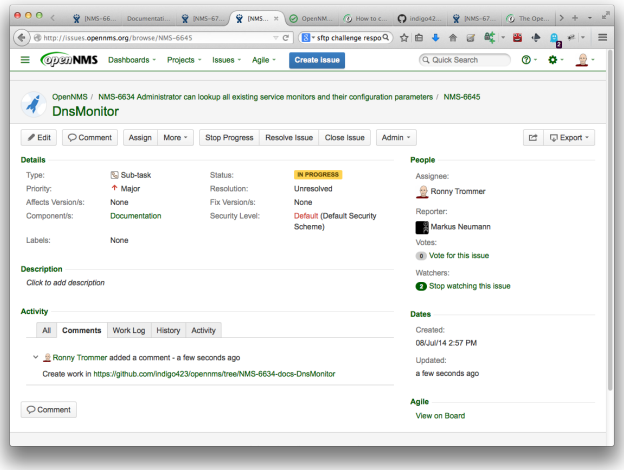


Figure 3. Create a link in the JIRA issue to your working branch, it indicates somebody is working on it.

There are two ways to work on the issue.

- *Option 1*: Make a local copy and work on your local computer
- *Option 2*: Edit directly all the files online in the GitHub web editor

4.1.1. Work on your computer locally

To work on your local computer *git* or the *GitHub GUI* is required. Clone your repository to you local computer with

```
git clone https://github.com/<your-github-nick>/opennms.git
```

It will download the repository with all the branches to your local system in the 'opennms' directory. By default you are in the *develop* branch of OpenNMS. You can switch to your previously created working branch with the following command:

```
git checkout -b NMS-6634-docs-DnsMonitor origin/NMS-6634-docs-DnsMonitor
```

You can show list all existing branches with

```
git branch -r
```

Now you have your working branch where you can start your contribution.

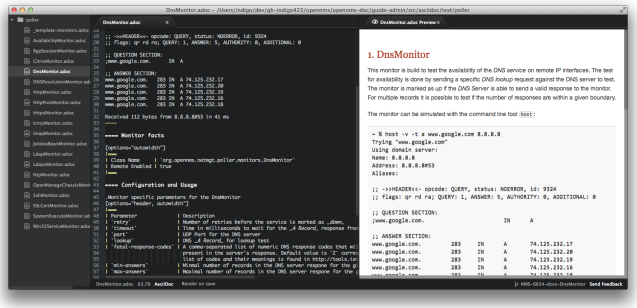


Figure 4. Create the documentation and save it!

The command `git status` gives you all changes. To add your work to the version controlled history you have to add your changes to a commit. In our example we have created the 'DnsMonitor.adoc' file and it is shown as currently untracked in git.

The command

```
git add DnsMonitor.adoc
```

adds this file for the next commit.

NOTE The full path to the file to add depends on your current location in the file system.

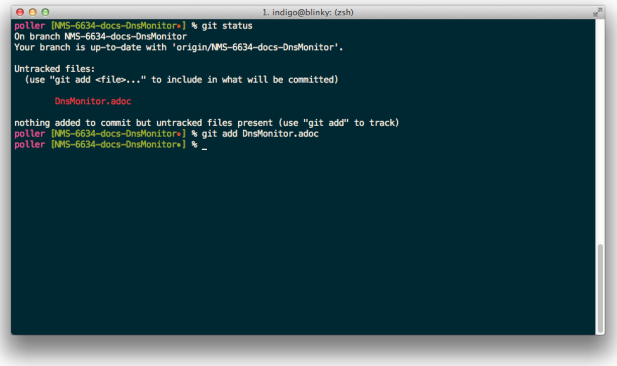


Figure 5. Add your created or modified files with git add.

Write a comment which explains what you did. The first line in the commit message is used as a subject line and should contain the JIRA issue number and the JIRA issue subject. After the subject keep one empty line and you can use bullet points to describe your changes

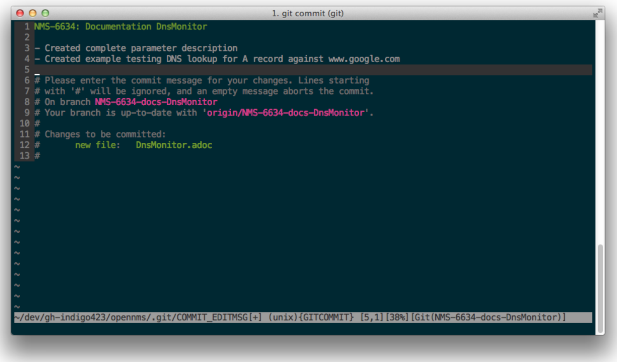


Figure 6. Git comment with a subject line and bullet points for the description

The commit with your change is now stored in the local history of your repository. With the following command you can upload your changes to your GitHub repository.

```
git push
```

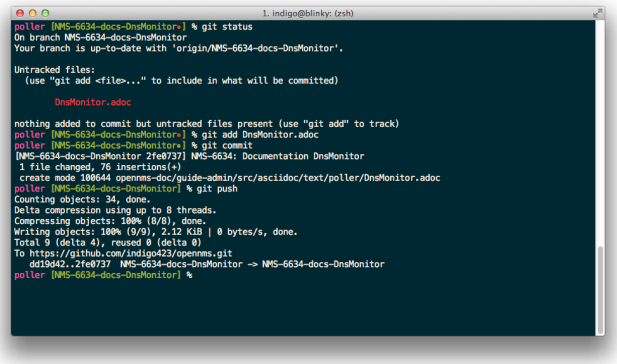


Figure 7. Upload your changes to your GitHub repository

NOTE	Upload changes to your repository doesn't have any effect on the project. You can use it as your backup and to stage your working progress. It also allows others to help you in your current working branch.

The next step is sending your changes to the official OpenNMS repository described in section Send the Pull Request.

4.1.2. Work with the GitHub Web editor

It is possible to work completely on the GitHub editor.

WARNING	Be careful if you don't have a reliable internet connection. It could be possible you loose the content in case of connection loss.

You can create a new file your repository as following:

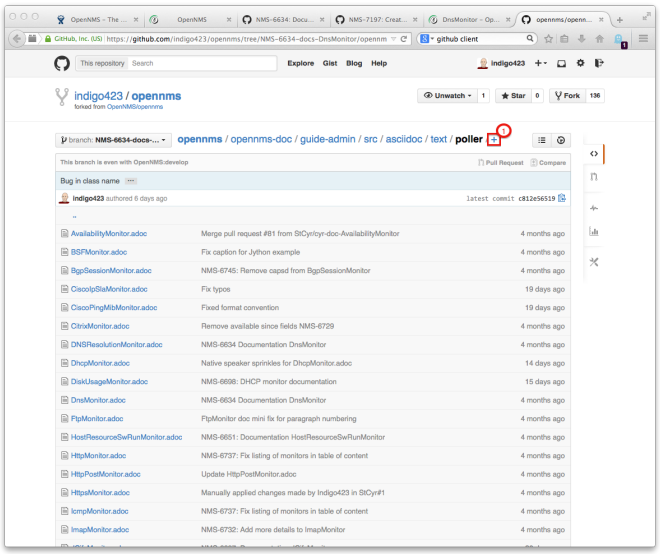


Figure 8. Create a new file with the + in (1)

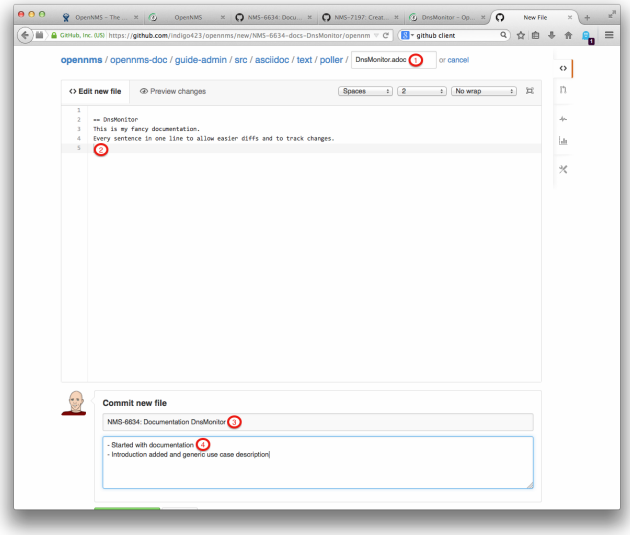


Figure 9. Set a file name and create content and a commit message

1. File name to create in our case a new documentation file with the name 'DnsMonitor.adoc'
2. Documentation in *AsciiDoc* format
3. Subject for the commit message with `NMS-<number>-docs-<Subject-without-spaces>`
4. Short information about your change

You can commit the change directly online by clicking on *Commit changes* on the bottom end of the page.

The next step is sending your changes to the official OpenNMS repository described in section Send the Pull Request.

4.1.3. Send the Pull Request

If you have finished, it's time to create a *Pull Request* to indicate your contribution should go in the official OpenNMS codebase. Commit and push all your changes to your GitHub repository. Create a *Pull Request* from the GitHub web application with click on *Compare & pull request*. The *Pull Request* will be created automatically against the correct *develop* branch.

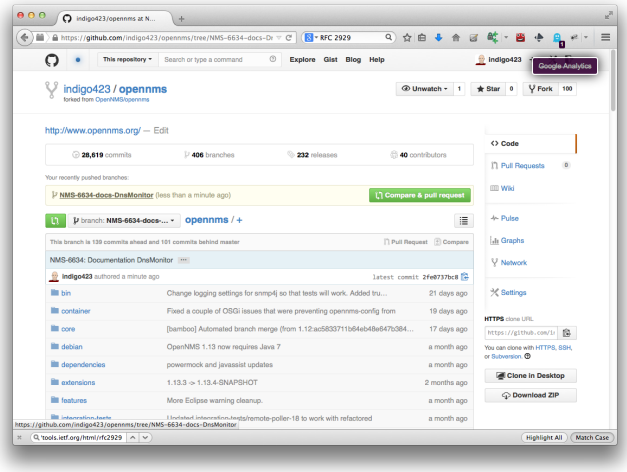


Figure 10. Click on Compare & pull request

GitHub will use your last git commit message for the *Pull Request*. Add to your commit message the following information:

```
JIRA: http://issues.opennms.org/browse/NMS-6634

Todo Review:
- [ ] Typo and grammar
- [ ] Formatting and conventions
- [ ] Content
```

This comment creates a review status indicator for the review.

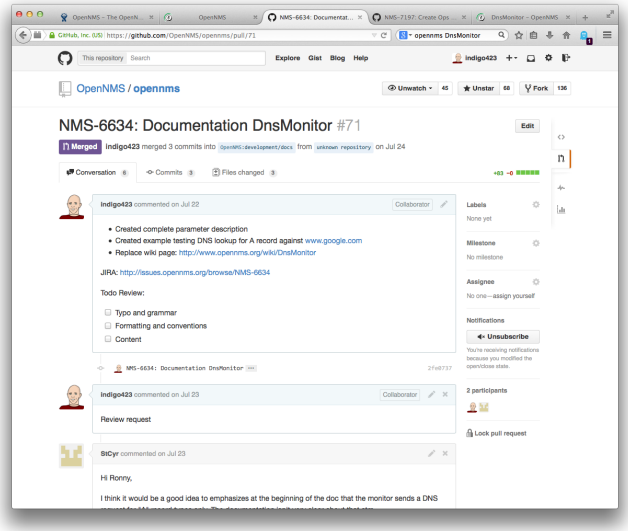


Figure 11. Create a review status indicator in your Pull Request message

To indicate you need a review set a link for the *Pull Request* in the JIRA issue.

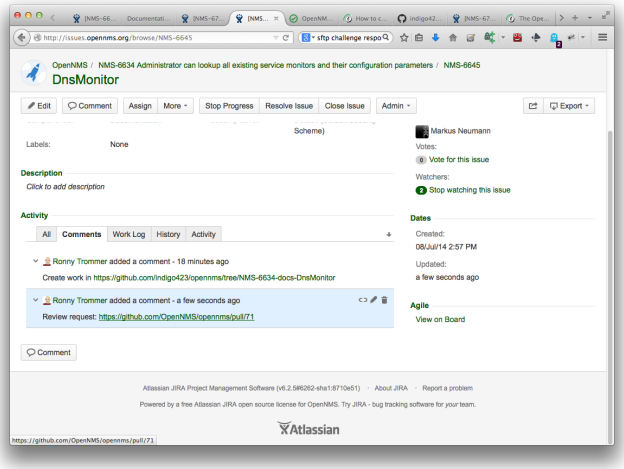


Figure 12. Create a link with a review request in the JIRA issue

Reviewer can add annotations lines in your contributed changes. You can work in this comments by just making your changes in your working branch, commit and push them to your repository. GitHub will automatically add this commits to your pull requests. If the status for *Content*, *Formatting and conventions* and *Typo and grammar* is finished, the *Pull Request* will be merged to the official OpenNMS code base.

NOTE You will be notified if a reviewer adds comments or request changes through the GitHub.

If your *Pull Request* is merged you will be also notified and the status of your outstanding *Pull Request* changes to status *Merged* on your GitHub profile page.

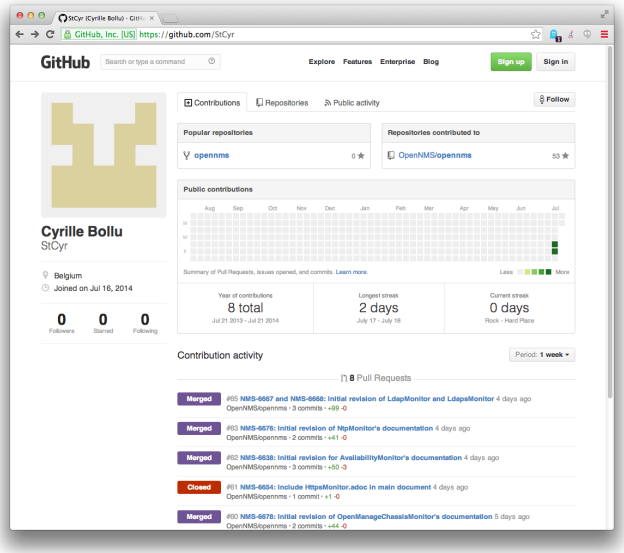


Figure 13. Status of pull requests is indicated on your GitHub profile page

The OpenNMS Continuous Integration system based on *Bamboo* picks up the merged pull request and starts a build and deploys a version with your changes automatically. You can see the build jobs on the public available Bamboo system.

Chapter 5. Writing

The following rules will help you to commit correctly formatted and prepared documentation for inclusion in the OpenNMS project. It is important that we maintain a level of consistency across all of our committers and the documentation they produce.

When writing place a single sentence on each line. This makes it easy to move content around, and also easy to spot long, or fragmented, sentences. This will also allow us to assign comments on a sentence in GitHub which will facilitate easier merging.

NOTE	Other than writing documentation, you can help out by providing comments on documentation, reviewing, suggesting improvements or reporting bugs. To do this head over to: issue tracker for documentation!

5.1. Conventions for text formatting

The following conventions are used:

- File names and path are written in `'poller-configuration.xml'` they will be rendered in: 'poller-configuration.xml';
- Names that indicate special attention, e.g. this configuration matches *any* entry: this is rendered as: this configuration matches **any** entry;
- _Italics_ is rendered as *Italics* and used for emphasis and indicate internal names and abbreviations;
- *Bold* is rendered as **Bold** and should be used sparingly, for strong emphasis only;
- +methodName()+ is rendered as methodName() and is also used for literals, (note: the content between the + signs *will* be parsed);
- `command` is rendered as `command` (typically used for command-line or parts used in configuration files), (note: the content between the ` signs *will not* be parsed);
- Mono\\+space[]+d is rendered as Mono+space+d and is used for monospaced letters;
- \'my/path/' is rendered as 'my/path/' this is used for file names and paths;
- \``double quote'' (which is two grave accents to the left and two acute accents to the right) renders as ``double quote'';
- \`single quote' (which is a single grave accent to the left and a single acute accent to the right) renders as `single quote'.

5.2. Gotchas

- Always leave a blank line at the top of the documents section. It might be the title ends up in the last paragraph of the document;
- Always leave a blank line at the end of documents;
- As {} are used for Asciidoc attributes, everything inside will be treated as an attribute. To avoid this you have to escape the opening brace: \\{. If you do not escape the opening brace, the braces and the text inside them will be removed without any warning being issued!;

- Forcing line breaks can be achieved with ` +` at the end of the line followed by a line break.

Example in source force line break

```
This is the first line +
and this a forced 2nd line
```

This is the first line
and this a forced 2nd line

Chapter 6. Headings and document structure

Each document starts over with headings from level zero (the document title). Each document should have an id. In some cases sections in the document need to have id's as well, this depends on where they fit in the overall structure. If you wish to have a link to specific content that content has to have an id. A missing id in a mandatory place will cause the build to fail.

To start a document:

```
[[unique-id-verbose-is-ok]]
= The Document Title
```

If you are including the document inside another document and you need to push the headings down to the right level in the output, the leveloffset attribute is used.

Subsequent headings in a document should use the following syntax:

```
== Subheading

... content here ...

=== Subsubheading

content here ...
```

Chapter 7. Links

When you need to link to other parts of the manual you use the target id. To use a target id you follow this syntax:

```
<<doc-guidelines-links>>
```

This will render as: Links

NOTE To use the target id in you document simply write the target id in your text, for example:

see <<target-id>>

this should suffice for most cases.

If you need to link to another document with your own link text, then follow this procedure:

```
<<target-id, link text that fits in the context>>
```

NOTE Having lots of linked text may work well in a web context but is a distracting in print. The documentation we are creating is intended for both mediums so be considerate of this in your usage.

If you wish to use an external link, they are are added as:

```
http://www.opennms.org/[Link text here]
```

This will render in the output as: Link text here

For short links it may be beneficial not to use accompanying link text:

```
http://www.opennms.org/
```

Which renders as: http://www.opennms.org/

NOTE It is acceptable to have a period trailing after the URL, it will not render as a part of the link.

Chapter 8. Admonitions and useful notes

These are useful for defining specific sections, such as Notes, Tips and Important information. We encourage the use of them in the documentation as long as they are used appropriately. Choose from the following:

Source template for making a note for additional hints

```
NOTE: This is my note.
```

This is how its rendered:

> **NOTE** This is my note.

Source for giving a tip

```
TIP: This is my tip.
```

This is how its rendered:

> **TIP** This is my tip.

Source for giving a important hint

```
IMPORTANT: This is my important hint.
```

This is how its rendered:

> **IMPORTANT** This is my important hint.

Source for giving a caution

```
CAUTION: This is my caution.
```

This is how its rendered:

> **CAUTION** This is my caution.

Source for giving a warning

```
WARNING: This is my warning.
```

This is how its rendered:

> **WARNING** This is my warning.

A multiline variation:

```
[TIP]
Tiptext. +
Line 2.
```

Which is rendered as:

TIP

Tiptext.
Line 2.

NOTE

Remember to write these in full caps. There is no easy manner in which to add new admonitions, do not create your own.

Chapter 9. Attributes

Common attributes you can use in documents:

- {opennms-version} - rendered as "2015.1.8"

These can substitute part of URLs that point to, for example, APIdocs or source code. Note that opennms-git-tag also handles the case of snapshot/master.

Sample Asciidoc attributes which can be used:

- {docdir} - root directory of the documents
- {nbsp} - non-breaking space

Chapter 10. Comments

There's a separate build that includes comments. When the comments are used they show up with a yellow background. This build doesn't run by default, but after a normal build, you can use `make annotated` to create a build yourself. You can use the resulting 'annotated' page to search for content as the full manual is a single page.

To write a comment:

```
// this is a comment
```

Comments are not visible in the standard build. Comment blocks won't be included in the output of any build. The syntax for a comment block is:

```
////
Note that includes in here will still be processed, but not make it into the output.
That is, missing includes here will still break the build!
////
```

Chapter 11. Tables

For representing structured information you can use tables. A table is constructed in the following manner:

```
[options="header, autowidth"]
|===
| Parameter     | Description                | Required | Default value
| `myFirstParm` | my first long description  | required | `myDefault`
| `myScndParm`  | my second long description | required | `myDefault`
|===
```

This is rendered as:

Parameter	Description	Required	Default value
myFirstParm	my first long description	required	myDefault
myScndParm	my second long description	required	myDefault

NOTE Please align your columns in the AsciiDoc source in order to give better readability when editing in text view. If you have a very long description, break at 120 characters and align the text to improve source readability.

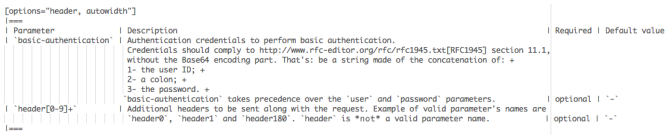


Figure 14. Example in AsciiDoc source for very long table descriptions

this is rendered as:

Parameter	Description	Required	Default value
basic-authentication	Authentication credentials to perform basic authentication. Credentials should comply to RFC1945 section 11.1, without the Base64 encoding part. That's: be a string made of the concatenation of: 1- the user ID; 2- a colon; 3- the password. basic-authentication takes precedence over the user and password parameters.	optional	-

Parameter	Description	Required	Default value
`header[0-9]+`	Additional headers to be sent along with the request. Example of valid parameter's names are `header0`, `header1` and `header180`. `header` is **not** a valid parameter name.	optional	-

Chapter 12. Include images

When visualizing complex problems you can help the explanation and provide greater information by using an image. We use in OpenNMS documentation modules two directories for images.

The image folder structure mirrors the text structure. In this case it is a little bit easier to locate the AsciiDoc text file where the image is included.

Example folder structure for image files

```
.
└── opennms-doc
    └── guide-doc
        ├── README.adoc
        ├── pom.xml
        ├── src
        |   └── asciidoc
        |       ├── configs
        |       |   └── poller-configuration.xml
        |       ├── images
        |       |   ├── 01_opennms-logo.png
        |       |   └── 02_pris-overview.png
        |       ├── images_src
        |       |   └── pris-overview.graphml
        |       ├── index.adoc
        |       └── text
        |           ├── images.adoc
        |           ├── include-source.adoc
        |           ├── introduction.adoc
        |           └── writing.adoc
        └── target
```

① This folder contains all documentation modules;

② The module for this documentation for target group of documentation contributors;

③ Indicates a source folder;

④ The documentation root folder;

⑤ Folder for images. Images should be *.png or *.jpg if included in the documentation;

⑥ The image used, the format is a leading `<number>_` followed by a name using no spaces;

⑦ Some images are created from tools like *yED*, this folder should contain the editable version of the file with the same file name;

⑧ Editable version of the image source file, note no spaces in the name;

⑨ Main document file which includes all documentation parts and is rendered as `index.html` for the web;

⑩ AsciiDoc source file which can include images;

⑪ Target folder with generated HTML output after `mvn clean package` has been performed;

IMPORTANT	All images in the entire manual share the same namespace, it is therefore best practice to use unique identifiers for images.

To include an image file, make sure that it resides in the 'images/' directory relative to the document you're including it within. Then use the following syntax for inclusion in the document:

First included image

```
.This is a caption of the image
image::../images/01_opennms-logo.png[]
```

Which is rendered as:

Figure 15. This is a caption of the image

IMPORTANT	The image path for the images you include is relative to the *.adoc source file, where you use the image.

Chapter 13. Code Snippets

You can include code snippets, configuration- or source code files in the documentation. You can enable syntax highlighting by providing the given language parameter, this will work on source code or configuration.

13.1. Explicitly defined in the document

WARNING	be careful to use this kind of code snippets as sparsely as possible. Code becomes obsolete very quickly, archaic usage practices are detrimental.

if you do wish to include snippets use the following method:

This is a sample configuration explicitly in the documentation

```
<service name="DNS" interval="300000" user-defined="false" status="on">
  <parameter key="retry" value="2" />
  <parameter key="timeout" value="5000" />
  <parameter key="port" value="53" />
  <parameter key="lookup" value="localhost" />
  <parameter key="fatal-response-codes" value="2,3,5" /><!-- ServFail, NXDomain, Refused -->
  <parameter key="rrd-repository" value="/opt/opennms/share/rrd/response" />
  <parameter key="rrd-base-name" value="dns" />
  <parameter key="ds-name" value="dns" />
</service>
```

If there's no suitable syntax highlighter for the code used just omit the language: [source].

Currently the following syntax highlighters are enabled:

- Bash
- Groovy
- Java
- JavaScript
- Python
- XML

For other highlighters that could be added see https://code.google.com/p/google-code-prettify/.

13.2. Included from an example file

You can include source or configuration from an external file. In this way you can provide a working example configuration maintaining doc and example at the same time. The procedure and rules are the same as with images, the path is relative to the *.adoc file where the file to be used is included.

Include complete external file

```
[source,xml]
----
include::../configs/wmi-config.xml[]
----
```

This is how it's rendered:

```
<?xml version="1.0"?>
<wmi-config retry="2" timeout="1500"
username="Administrator" domain="WORKGROUP" password="password">
</wmi-config>
```

13.3. Include parts of a file

If you want to include just a specific segment of a large configuration file, you can assign tags that indicate to AsciiDoc the section that is to be included. In this example just the service definition of the *ICMP monitor* should be included.

In the 'poller-configuration.xml' tag the section in the following manner:

```
...
<rrd step="300">
  <rra>RRA:AVERAGE:0.5:1:2016</rra>
  <rra>RRA:AVERAGE:0.5:12:1488</rra>
  <rra>RRA:AVERAGE:0.5:288:366</rra>
  <rra>RRA:MAX:0.5:288:366</rra>
  <rra>RRA:MIN:0.5:288:366</rra>
</rrd>
# tag::IcmpServiceConfig[] -->
<service name="ICMP" interval="300000" user-defined="false" status="on">
  <parameter key="retry" value="2" />
  <parameter key="timeout" value="3000" />
  <parameter key="rrd-repository" value="/opt/opennms/share/rrd/response" />
  <parameter key="rrd-base-name" value="icmp" />
  <parameter key="ds-name" value="icmp" />
</service>
# end::IcmpServiceConfig[] -->
<service name="DNS" interval="300000" user-defined="false" status="on">
  <parameter key="retry" value="2" />
  <parameter key="timeout" value="5000" />
  <parameter key="port" value="53" />
...
```

Include this tagged part in the documentation using the tag parameter

```
[source,xml]
----
include::../configs/poller-configuration.xml[tags=IcmpServiceConfig]
----
```

This is how it rendered

```
    <service name="ICMP" interval="300000" user-defined="false" status="on">
      <parameter key="retry" value="2" />
      <parameter key="timeout" value="3000" />
      <parameter key="rrd-repository" value="/opt/opennms/share/rrd/response" />
      <parameter key="rrd-base-name" value="icmp" />
      <parameter key="ds-name" value="icmp" />
    </service>
```

NOTE Spaces and tabs are taken from the original file.

Chapter 14. Cheat Sheets and additional hints

For instructions on how to build your own version of the manual:

- readme

The documentation uses the AsciiDoc format. There are a number of guides that will help you to get started with using AsciiDoc:

- Aciidoc Reference
- AsciiDoc FAQ
- AsciiDoc cheatsheet
- AsciiDoc Cheatsheet

For other resources, to gain familiarity with AsciiDoc, you can visit:

- AsciiDoc User Manual
- AsciiDoc Maven Plugin
- AsciiDoc discussion list
- AsciiDoc issue tracker
- Docbook to AsciiDoc
- How to create handsome PDF documents without frustration

We recommend you use the cheatsheets (they are super useful!).

Chapter 15. Review documentation

Reviews help to improve the quality of code or documentation. As a reviewer keep in mind, you are looking in a result, somebody spent free time and effort in the contribution. Treat contributions with respect. Open *Pull Requests* in the OpenNMS repository can be found here: https://github.com/OpenNMS/opennms/pulls.

A review for documentation is finished if *Type and grammar*, *Formatting and conventions* and *Content* are checked on the *Pull Request*. *Pull Request* are executed by elected community members *OGP* or members of the OpenNMS Group.

You have the following possibilities reviewing a contribution:

- Everything is perfect and you there is no change necessary you can just merge the pull request and set the JIRA issue to status closed.
- There are changes necessary, in this case comment the lines in the pull request directly and follow up the conversation there.
- Bigger conceptual changes necessary or information out of reach for the contributor, you can provide a pull request back and give the contributor a change working your additional information in.
- Reject the pull request, cause it is not possible for any reason to get the code in the official code base.

The following sections describe the workflow for reviewing a pull request for documentation.

15.1. Formal check, is everything there

Every Pull Request should have in the first comment the following content:

- Comment with the back link to the JIRA issue and a Todo list for the review, see below

```
JIRA: http://issues.opennms.org/browse/NMS-6634

Todo Review:
- [ ] Typo and grammar
- [ ] Formatting and conventions
- [ ] Content
```

- The JIRA issue should be in status "Resolved"

15.2. Review criteria

1. Check for typos and grammar, normally a native speaker can help here
2. Check Conventions for text formatting
3. Check if the contribution is complete and reasonable. You don't have to verify the documentation parts in local test environment.
4. Check the marks for the steps you were able to finish.

NOTE

You can't know everything. It will happen, somebody documents a behavior somebody doesn't know. Don't hesitate to ask in the OpenNMS mailing list or IRC channels to clarify issues. If nobody knows the correct behavior don't get blocked, make a warning note and merge it. A bug can be created if the described behavior doesn't work.

15.3. Feedback

If you have two possibilities to give feedback on a *Pull Request*. You can directly change the content or start a conversation using the annotation function in GitHub.

15.3.1. Change the content directly in GitHub.

You want to fix or add something directly in the document. Go to the *Pull Request* and select the register card *Files Changed.*

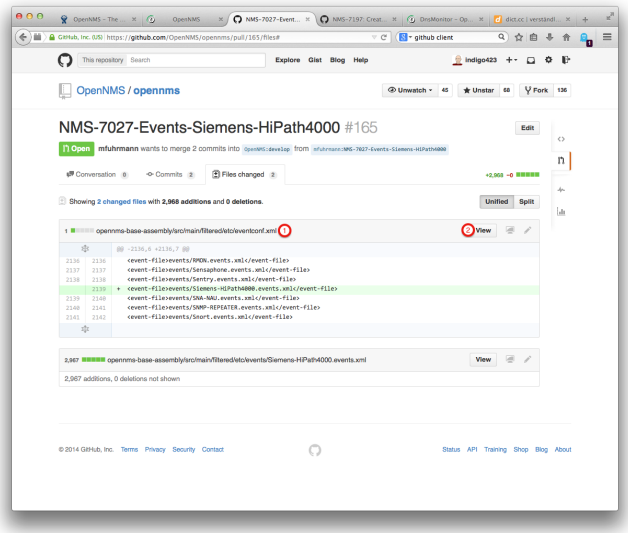


Figure 16. Select the file to edit and click on View

1. The file you want to edit.
2. Select first *View* to show the file content

WARNING

Don't be confused, the *Pen* to edit isn't available at this place. You can just edit the file in the *View* screenshot below.

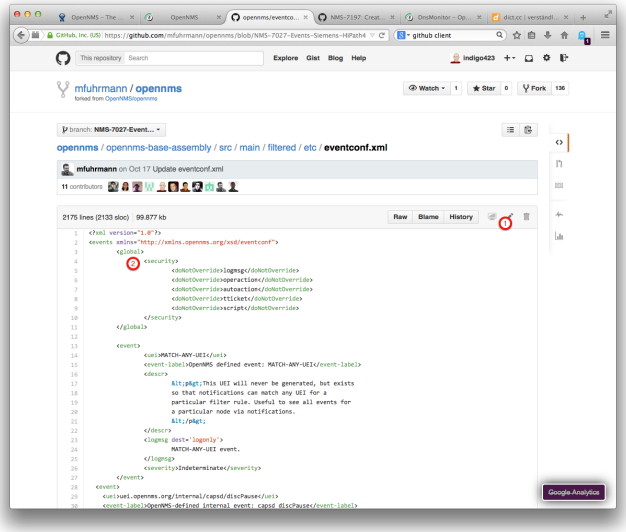


Figure 17. Make your changes and edit the file

1. The *Pen* icon is available, click to edit

2. Change in the editor directly

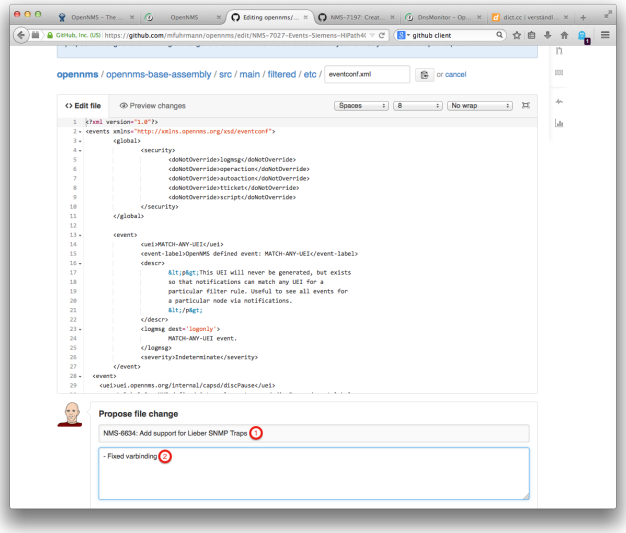
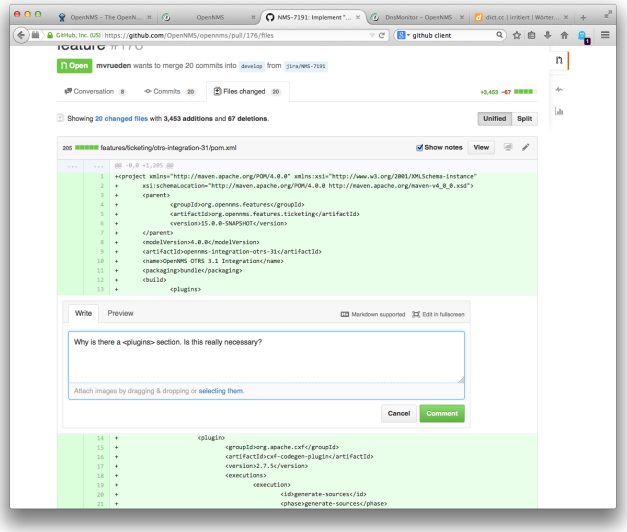


Figure 18. Save and commit your changes

It will create automatically a *Pull Request* back to the author to accept your changes. The author is notified with the GitHub notification. The following two sections describe both options in detail.

15.3.2. Conversation with comments

Instead of changing the content directly, you can also start a conversation. . Go to the *Pull Request* and select *Files changed*. . Click on *View*. . If you use the mouse cursor, you'll see a blue plus icon behind the line number. . Click on the + icon and add your question or note and save with _Comment . The author is notified through GitHub about your annotation and can give feedback.



15.4. Merge contribution to official code base

If all changes of the review are worked in, the *Pull Request* can be merged by an elected community *OGP* member.

1. Merge the pull request
2. Change JIRA status from *Resolved* to *Closed*
3. Check if the build in Bamboo and the deployment was ok