

CCP Zeppelin Guide 2.0.0

## Working with Zeppelin Notes

Date of publish: 2017-11-06

# CLOUDBERA

<https://docs.cloudera.com/>

## Legal Notice

© Cloudera Inc. 2019. All rights reserved.

The documentation is and contains Cloudera proprietary information protected by copyright and other intellectual property rights. No license under copyright or any other intellectual property right is granted herein.

Copyright information for Cloudera software may be found within the documentation accompanying each component in a particular release.

Cloudera software includes software from various open source or other third party projects, and may be released under the Apache Software License 2.0 ("ASLv2"), the Affero General Public License version 3 (AGPLv3), or other license terms. Other software included may be released under the terms of alternative open source licenses. Please review the license and notice files accompanying the software for additional licensing information.

Please visit the Cloudera software product page for more information on Cloudera software. For more information on Cloudera support services, please visit either the Support or Sales page. Feel free to contact us directly to discuss your specific needs.

Cloudera reserves the right to change any products at any time, and without notice. Cloudera assumes no responsibility nor liability arising from the use of products, except as expressly agreed to in writing by Cloudera.

Cloudera, Cloudera Altus, HUE, Impala, Cloudera Impala, and other Cloudera marks are registered or unregistered trademarks in the United States and other countries. All other trademarks are the property of their respective owners.

Disclaimer: EXCEPT AS EXPRESSLY PROVIDED IN A WRITTEN AGREEMENT WITH CLOUDERA, CLOUDERA DOES NOT MAKE NOR GIVE ANY REPRESENTATION, WARRANTY, NOR COVENANT OF ANY KIND, WHETHER EXPRESS OR IMPLIED, IN CONNECTION WITH CLOUDERA TECHNOLOGY OR RELATED SUPPORT PROVIDED IN CONNECTION THEREWITH. CLOUDERA DOES NOT WARRANT THAT CLOUDERA PRODUCTS NOR SOFTWARE WILL OPERATE UNINTERRUPTED NOR THAT IT WILL BE FREE FROM DEFECTS NOR ERRORS, THAT IT WILL PROTECT YOUR DATA FROM LOSS, CORRUPTION NOR UNAVAILABILITY, NOR THAT IT WILL MEET ALL OF CUSTOMER'S BUSINESS REQUIREMENTS. WITHOUT LIMITING THE FOREGOING, AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, CLOUDERA EXPRESSLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, QUALITY, NON-INFRINGEMENT, TITLE, AND FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION, WARRANTY, OR COVENANT BASED ON COURSE OF DEALING OR USAGE IN TRADE.

# Contents

<b>Working with Zeppelin Notes.....</b>	<b>4</b>
Create and Run a Note.....	5
Import a Note.....	6
Export a Note.....	7
Using the Note Toolbar.....	7

## Working with Zeppelin Notes

This section provides an introduction to Apache Zeppelin notes.

An Apache Zeppelin note consists of one or more paragraphs of code, which you can use to define and run snippets of code in a flexible manner.

A paragraph contains code to access services, run jobs, and display results. A paragraph consists of two main sections: an interactive box for code, and a box that displays results. To the right is a set of paragraph commands. The following graphic shows paragraph layout.

The diagram illustrates the layout of a Zeppelin paragraph. It consists of three main components:

- Code section (orange border):** Contains the source code for a paragraph titled "Paragraph features". The code includes a title, a list of features, and instructions for code and result sections.
- Result section (blue border):** Displays the rendered output of the code section, showing the title and the list of features.
- Paragraph commands (red border):** Located on the right side, it contains a "READY" status and a search bar for commands.

Zeppelin ships with several sample notes, including tutorials that demonstrate how to run Spark scala code, Spark SQL code, and create visualizations.

The screenshot shows the Zeppelin Notebook interface. At the top, there is a blue header with the Zeppelin logo and the text "Notebook -". A search bar is located on the right side of the header. Below the header, the title "Zeppelin Tutorial" is displayed, followed by a toolbar with icons for play, refresh, and other actions. The main content area shows a "Welcome to Zeppelin." message, followed by a code editor displaying a Scala snippet for loading data into a table.

```

import org.apache.commons.io.IOUtils
import java.net.URL
import java.nio.charset.Charset

// Zeppelin creates and injects sc (SparkContext) and sqlContext (HiveContext or SqlContext)
// So you don't need create them manually

```

To run a tutorial:

1. Navigate to the tutorial: click one of the Zeppelin tutorial links on the left side of the welcome page, or use the Notebook pull-down menu.
2. Zeppelin presents the tutorial, a sequence of paragraphs prepopulated with code and text.

3. Starting with the first paragraph, click the triangle button at the upper right of the paragraph. The status changes to PENDING, RUNNING, and then FINISHED when done.
4. When the first cell finishes execution, results appear in the box underneath your code. Review the results.
5. Step through each cell, running the code and reviewing results.

## Create and Run a Note

Use the following steps to create and run an Apache Zeppelin note.

To create a note:

1. Click "Create new note" on the welcome page, or click the "Notebook" menu and choose "+ Create new note."
2. Type your commands into the blank paragraph in the new note.

When you create a note, it appears in the list of notes on the left side of the home page and in the Notebook menu. By default, Zeppelin stores notes in the \$ZEPPELIN\_HOME/notebook folder.

To run your code:

1. Click the triangle button in the cell that contains your code:

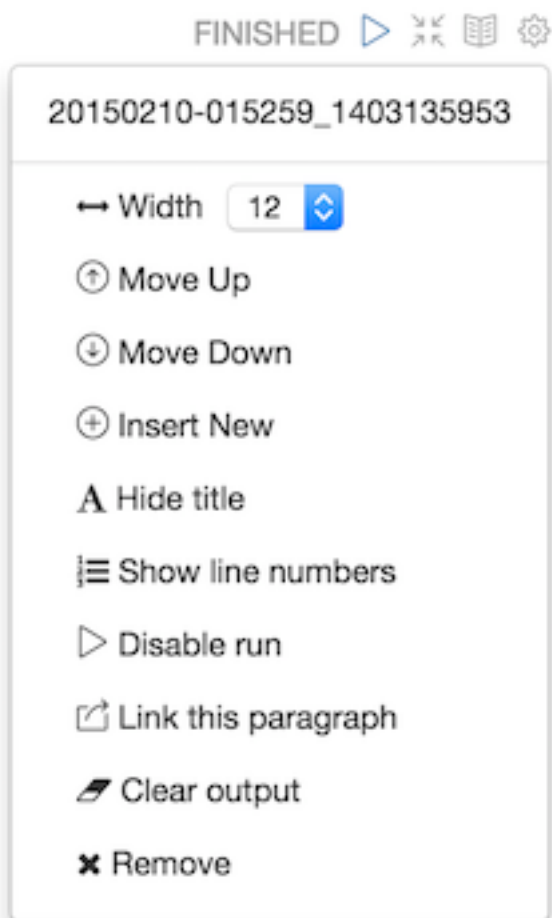


2. Zeppelin displays status near the triangle button: PENDING, RUNNING, ERROR, or FINISHED.
3. When finished, results appear in the result section below your code.

The settings icon (outlined in red) offers several additional commands:



These commands allow you to perform several note operations, such as showing and hiding line numbers, clearing the results section, and deleting the paragraph.



## Import a Note

Use the following steps to import an Apache Zeppelin note.

### About this task

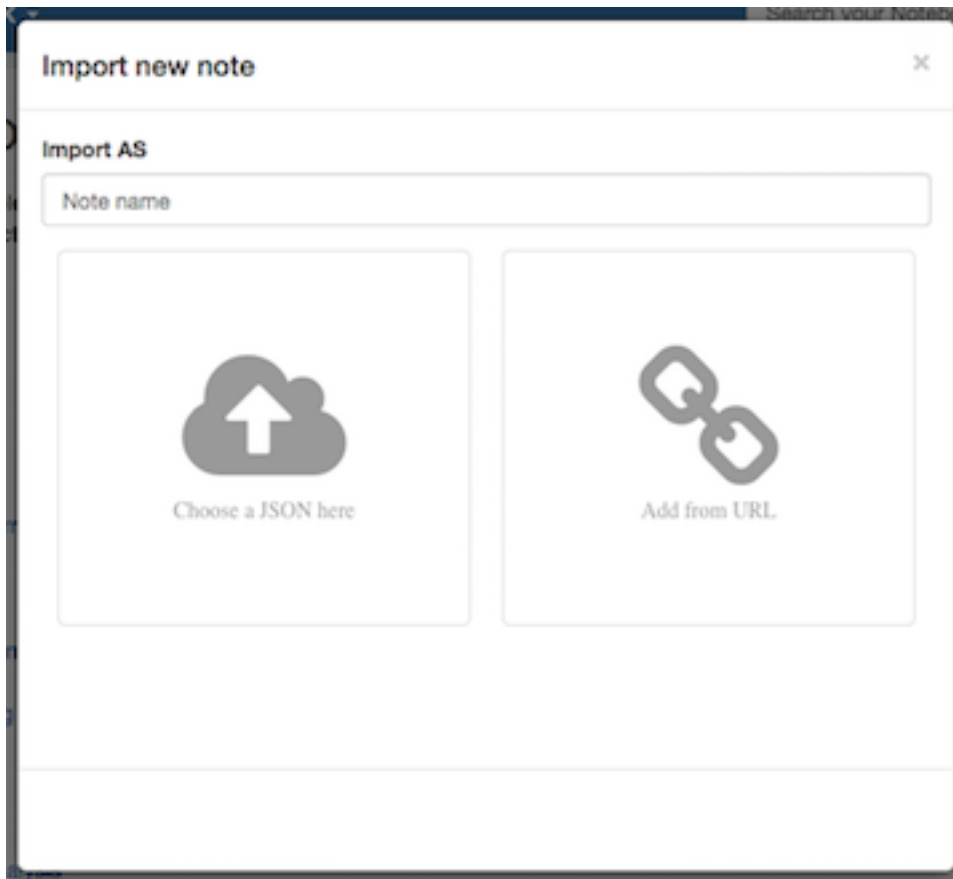
To import a note from a URL or from a JSON file in your local file system:

### Procedure

1. Click "Import note" on the Zeppelin home page:



2. Zeppelin displays an import dialog box:



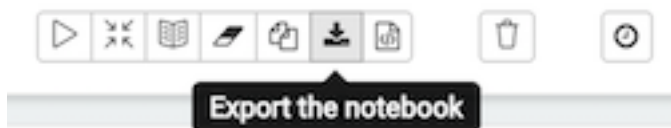
3. To upload the file or specify the URL, click the associated box.

By default, the name of the imported note is the same as the original note. You can rename it by providing a new name in the "Import AS" field.

## Export a Note

Use the following steps to export an Apache Zeppelin note.

To export a note to a local JSON file, use the export note icon in the note toolbar:



Zeppelin downloads the note to the local file system.

Note: Zeppelin exports code and results sections in all paragraphs. If you have a lot of data in your results sections, consider trimming results before exporting them.

## Using the Note Toolbar

This section describes how to use the Apache Zeppelin Note toolbar.

At the top of each note there is a toolbar with buttons for running code in paragraphs and for setting configuration, security, and display options:

There are several buttons in the middle of the toolbar:



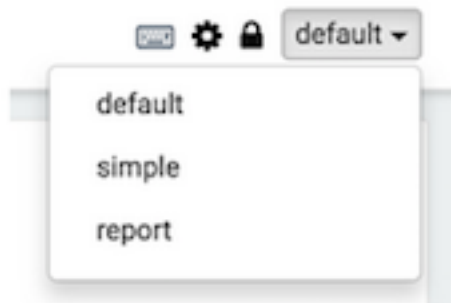
These buttons perform the following operations:

- Execute all paragraphs in the note sequentially, in the order in which they are displayed in the note.
- Hide or show the code section of all paragraphs.
- Hide or show the result sections in all paragraphs.
- Clear the result section in all paragraphs.
- Clone the current note.
- Export the current note to a JSON file.

Note that the code and result sections in all paragraphs are exported. If you have extra data in some of your result sections, trim the data before exporting it.

- Commit the current note content.
- Delete the note.
- Schedule the execution of all paragraphs using CRON syntax. This feature is not currently operational. If you need to schedule Spark jobs, consider using Oozie Spark action.

There are additional buttons on the right side of the toolbar:



These buttons perform the following operations (from left to right):

- Display all keyboard shortcuts.
- Configure interpreters that are bound to the current note.
- Configure note permissions.
- Switch display mode:
  - Default: the notebook can be shared with (and edited by) anyone who has access to the notebook.
  - Simple: similar to default, with available options shown only when your cursor is over the cell.
  - Report: only your results are visible, and are read-only (no editing).

Note: Zeppelin on HDP does not support sharing a note by sharing its URL, due to lack of proper access control over who and how a note can be shared.