

Enabling Fine-grained Access Control from ABFS File Browser in Hue (Preview)

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Contents

Introduction to fine-grained access control in Hue	4
Prerequisites for enabling ABFS File Browser using RAZ	4
Enabling ABFS File Browser in Hue using RAZ	5

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Introduction to fine-grained access control in Hue

CDP Public Cloud defaults to using cloud storage, which introduces new challenges around managing data access across teams and individual users. The Ranger Authorization Service (RAZ) addresses these challenges, enabling users to have the equivalent fine-grained and audit capabilities in Apache Ranger they used with HDFS files in an on-prem or IaaS deployment.

Hue offers you the capability to browse Azure Data Lake Storage (ADLS) Gen2 file system, upload files to ABFS, and create tables by importing files from ABFS containers. With RAZ, you can grant fine-grained access to per-user home directories.

With RAZ enabled, only admin users can access the ABFS containers till the root. Non-admin users can only access their individual user directories to which they are granted access.

In CDP, you can enable the ABFS File Browser in Hue in the following three ways:

- With IDBroker
- Without IDBroker
- With Ranger Authorization Service

Note: If you have enabled RAZ while registering your Azure environment with CDP, then Hue uses RAZ as the default mechanism for enabling the ABFS File Browser.

Prerequisites for enabling ABFS File Browser using RAZ

RAZ for ADLS Gen2 is a preview feature and is under development. You must enable RAZ while registering your environment with CDP. Follow the instructions listed in the [“Fine-grained Access Control for ADLS Gen2 \(Preview\)”](#) document to:

1. Register an Azure environment with the **“Enable Ranger authorization for ADLS Gen2”** option enabled. You can use the CDP web interface or the CDP CLI to complete this task.
2. Create a Data Hub cluster with the Data Engineering or Data Mart cluster template.
3. Create the following Ranger policies:
 - a. Hadoop SQL policy (`all - database, table, column, all - url`)
Note: You must grant permissions to individual users or groups in these Ranger policies. To grant permissions to all users, you can specify `{USER}` in the **Permission** section.
 - b. ABFS (`cm_ADLS`) policy (`Default: User Home`)

You must also grant appropriate permissions to the users in CDP User Management Service (UMS). For example, `EnvironmentUser`.

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Next, you must create a “user” directory within your ABFS container and also create sub-directories for individual users. For example,

MY-ABFS-CONTAINER/user/csso_john.smith,

MY-ABFS-CONTAINER/user/csso_nick.fry, and so on. Specify the storage account name in the **Storage Account** field and the directory path of the container and its sub-directories in the **Storage Account Container** field of the cm_ADLS Ranger policy.

Enabling ABFS File Browser in Hue using RAZ

The ABFS File Browser in Hue is not enabled by default. You can enable it by setting the properties in the Advanced Configuration Snippet (hue_safety_valve.ini file).

Steps

1. Log in to the CDP Management Console and go to your environment as an Administrator.
2. From the Data Lake tab, open Cloudera Manager.
3. Go to **Clusters > Ranger RAZ service > Instances > RAZ server > Processes** and note the value of the `fs.azure.ext.raz.rest.host.url` property from the `core-site.xml` file. You need this to specify the value of the `api_url` property in the Hue configuration.
4. Go to **Clusters > Hue service > Configuration > Hue Service Advanced Configuration Snippet (Safety Valve) for hue_safety_valve.ini** and add the following lines:

```
[desktop]
app_blacklist=spark,zookeeper,hbase,impala,search,sqoop,security,pig
[[raz]]
is_enabled=true
api_url=[***fs.azure.ext.raz.rest.host.url***]

[azure]
[[abfs_clusters]]
[[[default]]]
fs_defaultfs=abfs://[***CONTAINER-FOR-DATA-ACCESS***]@[***STORAGE-ACCOUNT***].dfs.core.windows.net
# For example,
fs_defaultfs=abfs://storage-fs@mystorage.dfs.core.windows.net
webhdfs_url=https://[***STORAGE-ACCOUNT***].dfs.core.windows.net
# For example,
webhdfs_url=https://mystorage.dfs.core.windows.net

[filebrowser]
remote_storage_home=abfs://[***CONTAINER-FOR-DATA-ACCESS***]/user
```

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```
# For example, remote_storage_home=abfs://storage-fs/user
```

5. Click **Save Changes**.
6. Restart the Hue service.

You should be able to view the icon for the ABFS File Browser on the left assist pane on the Hue web interface.

Important: When a non-admin user clicks on the ABFS File Browser from the left assist pane, they may be redirected to a 403 page. This is a known issue. To resolve this issue, they must manually specify the path to their user home directory in the URL which should be provided by the administrator. For example:

```
https://[***HUE-INSTANCE-URL**]/cdp-proxy/hue/hue/filebrowser/view=abfs://[***ABFS-CONTAINER-NAME**]/user/csso_john.smith. The same path (abfs://[***ABFS-CONTAINER-NAME**]/user/csso_john.smith) needs to be specified when using the Hue Importer.
```