Cloudera Runtime 7.1.3

Administering Hue

Date published: 2020-08-10
Date modified:

CLOUDERA

Legal Notice

Contents

Reference architecture

Hue server can support approximately 25 concurrent users, depending on what tasks the users are performing. Most scaling issues occur as a result of users performing resource-intensive operations and not from the number of users. For example, large downloads of query results can impact resource availability for the other users who are using the same Hue instance during the download operation. During that time, the users can experience slow performance. Another common cause of noticeable performance changes are slow RPC calls between Hue and another service. When this happens, queries may appear to suddenly "stop responding" after they are submitted.

As a guide, 2 Hue servers can support up to:

- 100 unique users per week
- 50 users per hour at peak times executing up to 100 queries

A typical setup is 2 Hue servers.

General guidelines

- Deploy a load balancer in front of Hue.
- Use a production-quality database.
- Ensure that other services, such as Impala, Hive, and Oozie, are healthy and not impacted by too few resources. If these services are hanging, it adversely affects Hue performance.
- Consider moving workloads that are subject to SLAs (service-level agreements) or considered "noisy neighbors" to their own compute cluster. Noisy neighbors are workloads that use the majority of available resources and cause performance issues.
- Limit the number of rows that are returned for queries.

  One way to limit the number of rows returned is to specify a value for the download_row_limit configuration property for the Hue Beeswax application. This property can be set in the Hue Service Advanced Configuration Snippet (Safety Valve) for hue_safety_valve.ini property in Cloudera Manager:

  1. In Cloudera Manager, click HueConfiguration , and enter Hue Service Advanced Configuration Snippet in the search text box.
  2. In the text box for the Hue Service Advanced Configuration Snippet (Safety Valve) for hue_safety_valve.ini, add the following configuration information:

  ```
  [beeswax]
  download_row_limit=number_of_rows
  ```

3. Click Save Changes and click the restart icon at the top of the page to restart the Hue service:
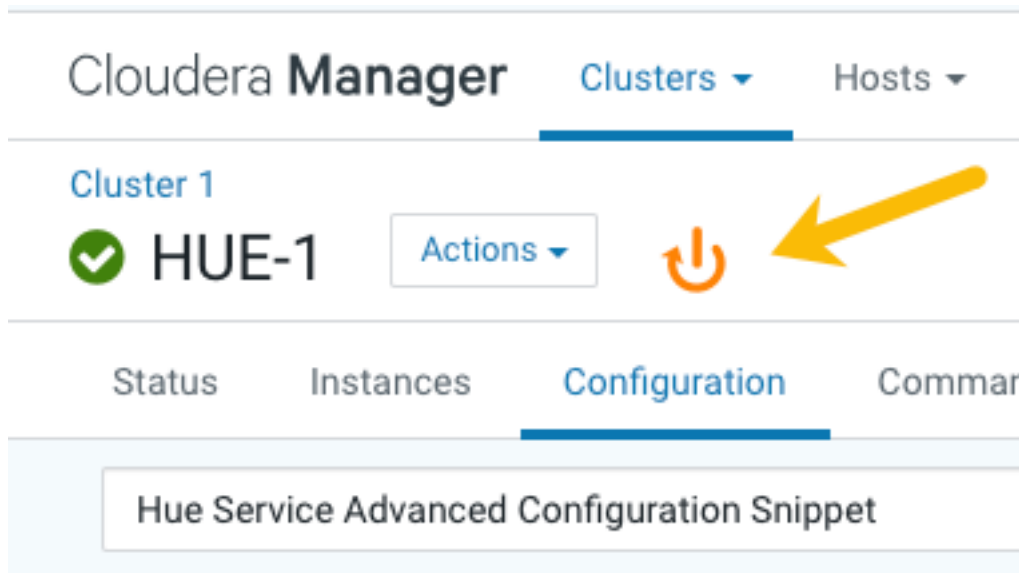
- Upgrade to CDH 5.15 or later, which includes Hue version 4.2. In Hue 4.2 and later, there are better query submission controls on the backend and you also gain the ability to visualize queued queries.

Hue configuration files

All Hue configuration properties are stored in hue.ini but only a subset are exposed in Cloudera Manager. Properties that are not exposed (such as the Authentication Backend for SAML) can be configured in Cloudera Manager with "safety-valves."

Hue roles are configured with three .ini files that are read in order (with the last one, hue_safety_valve_server.ini, taking precedence):

- hue.ini
- hue_safety_valve.ini
- hue_safety_valve_server.ini.

⚠️ **Important:** Do not edit the .ini files at the command line because they are stored in dynamic directories named by process ID and populated from the Cloudera Manager database.

```
ls -ltr /var/run/cloudera-scm-agent/process/`ls -valrt /var/run/cloudera-scm
-agent/process | grep HUE_SERVER | tail -1 | awk '{print $9}'`
```

```
[root@hue4-cdh512-1 257-hue-HUE_SERVER]# cd /var/run/cloudera-scm-agent/process/`ls -valrt /var/run/cloudera-scm-agent/process
 | grep HUE_SERVER | tail -1 | awk '{print $9}'`
[root@hue4-cdh512-1 257-hue-HUE_SERVER]# pwd
/var/run/cloudera-scm-agent/process/257-hue-HUE_SERVER
[root@hue4-cdh512-1 257-hue-HUE_SERVER]# ll
total 76
-rwxr----- 1 hue  hue    393 Aug  4 09:17 altscript.sh
-rw-r----- 1 hue  hue    359 Aug  4 09:17 cloudera-monitor.properties
-rw------- 1 root root 21330 Aug  4 09:17 config.zip
-rw-r----- 1 hue  hue   1987 Aug  4 09:17 creds.localjceks
drwxr-xr-x 2 hue  hue    300 Aug  4 09:17 hive-conf
-rw-r----- 1 hue  hue   4267 Aug  4 09:17 hue.ini
-rw------- 1 hue  hue     99 Aug  4 09:17 hue.keytab
-rw-r----- 1 hue  hue      0 Aug  4 09:17 hue_safety_valve.ini
-rw-r----- 1 hue  hue      0 Aug  4 09:17 hue_safety_valve_server.ini
drwxr-x--x 2 hue  hue     60 Aug  4 09:17 impala-conf
drwxr-x--x 2 hue  hue     80 Aug  4 09:17 logs
-rw-r----- 1 hue  hue    541 Aug  4 09:17 navigator.client.properties
-rw-r----- 1 hue  hue    540 Aug  4 09:17 navigator.lineage.client.properties
-rw------- 1 root root  2415 Aug  4 09:17 proc.json
-rw-r----- 1 hue  hue      0 Aug  4 09:17 redaction-rules.json
drwxr-x--x 2 hue  hue     60 Aug  4 09:17 sentry-conf
-rw-r----- 1 hue  hue   8328 Aug  4 09:17 service-metrics.properties
drwxr-x--x 2 hue  hue     60 Aug  4 09:17 sqoop2-conf
-rw------- 1 root root  3000 Aug  4 09:17 supervisor.conf
drwxr-xr-x 2 hue  hue    220 Aug  4 09:17 yarn-conf
```

Tip: The process directory for any given role is mirrored in Cloudera Manager. Go to HueInstances, select a role such as Hue Server, and then click the Processes tab.

Hue safety valves

In Cloudera Manager, all Hue properties and safety-valves can be found on the tab, HueConfiguration.

Advanced safety valves

The field for hue_safety_valve.ini is service-wide and affects all Hue roles listed on the Instances tab. The field for hue_safety_valve_server.ini only affects Hue Server role instances.

Environment safety valves

Environment safety-valves let you configure environment variables across the service or for specific role instances. These safety-valves lack headers.

Hue logs

Cloudera Manager generates standard stream logs when each Hue role instance starts and stops. The Hue service, which is built on the Django framework, generates log4j logs when the service is running.

Standard stream logs

Cloudera Manager logs the start and stop of each supervised Hue process in standard stream logs (stdout.log, stderr.log

When the Hue service restarts, Cloudera Manager generates a new directory for each supervised process of a Hue role instance:

```
ls -vrl /var/run/cloudera-scm-agent/process | grep HUE
```

```
[root@hue4-cdh512-1 ~]# ls -vrl /var/run/cloudera-scm-agent/process | grep HUE
drwxr-x--x 4 hue          hue           320 Aug  6 14:33 289-hue-HUE_LOAD_BALANCER
drwxr-x--x 8 hue          hue           440 Aug  6 14:33 288-hue-HUE_SERVER
drwxr-x--x 4 hue          hue           280 Aug  6 14:33 258-hue-HUE_LOAD_BALANCER
drwxr-x--x 8 hue          hue           460 Aug  6 14:33 257-hue-HUE_SERVER
drwxr-x--x 4 hue          hue           280 Aug  4 09:17 242-hue-HUE_LOAD_BALANCER
drwxr-x--x 8 hue          hue           460 Aug  4 09:17 241-hue-HUE_SERVER
drwxr-x--x 4 hue          hue           280 Aug  4 08:41 239-hue-HUE_LOAD_BALANCER
drwxr-x--x 8 hue          hue           460 Aug  4 08:41 238-hue-HUE_SERVER
drwxr-x--x 4 hue          hue           280 Aug  4 08:38 236-hue-HUE_LOAD_BALANCER
drwxr-x--x 8 hue          hue           460 Aug  4 08:38 235-hue-HUE_SERVER
```

It writes to a nested logs directory for each running instance:

```
[root@hue4-cdh512-1 logs]# pwd
/var/run/cloudera-scm-agent/process/289-hue-HUE_LOAD_BALANCER/logs
[root@hue4-cdh512-1 logs]# ll
total 16
-rw-r--r-- 1 root root 11148 Aug  6 14:33 stderr.log
-rw-r--r-- 1 root root   447 Aug  6 14:33 stdout.log
```

Configuration errors are written here because they prevent Hue servers and load balancers from starting properly.

> **Tip:** Testing the LDAP configuration from Cloudera Manager (Clusters $Hue service Test LDAP Configuration) also writes to standard stream logs which you can search using the following command: ls -vrl /var/run/cloudera-scm-agent/process | grep   ldaptest

The supervisor

The supervisor is a watchdog process and supervisor.conf manages all Hue processes; its only purpose is to spawn and monitor other processes. A standard Hue installation starts and monitors the runcpserver process, which provides the core web functionality for Hue.

> **Note:** To see active supervisor processes, run: ps -f -u   hue.

For each Hue role, Cloudera Manager looks to the appropriate supervisor.conf for instructions on how to start the server.

```
# Hue Server Process Directory
cd /var/run/cloudera-scm-agent/process/`ls -valrt /var/run/cloudera-scm-age
nt/process | grep HUE_SERVER | tail -1 | awk '{print $9}'`
cat supervisor.conf
```

```
[program:288-hue-HUE_SERVER]
command=cmf-redactor "/usr/lib64/cmf/service/hue/hue.sh" "runcpserver"
autostart=true
directory=/run/cloudera-scm-agent/process/288-hue-HUE_SERVER
stdout_logfile=/run/cloudera-scm-agent/process/288-hue-HUE_SERVER/lo
gs/stdout.log
stdout_logfile_maxbytes=10MB
stdout_logfile_backups=10
stderr_logfile=/run/cloudera-scm-agent/process/288-hue-HUE_SERVER/lo
gs/stderr.log
stderr_logfile_maxbytes=10MB
stderr_logfile_backups=10
```

```
environment= ...
```

```
# Hue Load Balancer Process Directory
cd /var/run/cloudera-scm-agent/process/`ls -valrt /var/run/cloudera-scm-ag
ent/process | grep HUE_LOAD | tail -1 | awk '{print $9}'`
cat supervisor.conf
```

```
[program:258-hue-HUE_LOAD_BALANCER]
command=cmf-redactor "/usr/lib64/cmf/service/hue/httpd.sh"
...
```

> **Note:** Currently, maxbytes=10MB, is hard-coded and cannot be changed for stdout or stderr.

If you installed other applications into your Hue instance, you may see other daemons running under the supervisor as well. Supervisor automatically restarts these processes if they fail for any reason. If they fail repeatedly in a short period of time, the supervisor itself shuts down.

Hue service Django logs

When the Hue service is running, Hue generates logs in /var/log/hue using log4j. Load balancer logs are in /var/run/httpd. You can view these logs in Hue at http://hueserver:port/logs.

Table 1: Hue service logs

Log Name	Description
access.log	Filtered list of successful attempts to access Hue Web UI
audit/hue_server_audit_wal.log	Audit log visible in Apache Atlas.
error.log	Filtered list of all nontrivial errors
kt_renewer.log	Kerberos ticket renews
metrics-hue_server/metrics.log	Populates charts in Cloudera Manager
migrate.log	Database and table migrations + First Run of Hue server
runcpserver.log	Hue (CherryPy) web server info (CP server runs Django core)
hue_install.log	Contains the log produced during installation

Enabling DEBUG

DEBUG is available for the Hue Django logs in /var/log/hue. By default, the Hue service writes INFO level messages and keeps a small buffer of log messages at all levels in memory.

There are two ways to enable DEBUG messages for all the logs in /var/log/hue :

- Cloudera Manager: Go to Hue Configuration, check Enable Django Debug Mode, and Save ChangesRestart.
- Hue Web UI: Go to the Home page, select Server Logs, and check Force Debug Level. Debug is enabled on-the-fly.

Hue supported browsers

Hue works with the two most recent LTS (long term support) or ESR (extended support release) browsers. Cookies and JavaScript must be enabled.

The lists the minimum tested versions of the most common browsers:

- Chrome: (Version history)
- Firefox: (Version history)
- Safari (Mac only): Version history
- Microsoft Edge: (Version history)

Hue can display in other browsers and in older versions of the common browsers, but you might not have access to all features.

Adding a Hue service with Cloudera Manager

You can use the Add a Service wizard in Cloudera Manager to add and configure a new Hue service instance.

Procedure

1.

On the HomeStatus tab, click the option menu ⋮ to the right of the cluster name and select Add Service.

2. On the next page, select the Hue Service Type, and then click Continue.

3. On the Select Dependencies page, select the row containing the dependencies that are required for your cluster, and then click Continue.

4. On the Assign Roles page, you can perform one of the following actions:

- To accept the default role assignments, click Continue in the lower right corner of the page. To view the default role assignments by host, click View By Host.
- To customize role assignments, click the gray field below Hue Server and Load Balancer roles. Clicking the gray fields launches a dialog box where you can select hosts where you want to add the role. Click OK after making your selection.

  The wizard evaluates host hardware configurations to determine the best hosts for each role. All worker roles are automatically assigned to the same set of hosts as the HDFS DataNode. You can reassign if necessary. Specify hostnames by IP address, rack name, or by range:

Range Definition	Matching Hosts
10.1.1.[1-4]	10.1.1.1, 10.1.1.2, 10.1.1.3, 10.1.1.4
host[1-3].company.com	host1.company.com, host2.company.com, host3.company.com
host[07-10].company.com	host07.company.com, host08.company.com, host09.company.com, host10.company.com

5. On the Setup Database page:

a) Specify a database vendor Type, Database Hostname, Database Name, Username, and Password.

b) Click Test Connection, and when the success message appears, click Continue and Cloudera Manager starts the Hue service.

6. After the service is started, click Continue and then click Finish.

If your cluster uses Kerberos, Cloudera Manager automatically adds a Hue Kerberos Ticket Renewer role to each host where you assigned the Hue Server role instance. See "Enabling Kerberos Authentication" for more information.

Adding a Hue role instance with Cloudera Manager

Roles are functions that comprise a service. Role instances must be assigned to one or more hosts. You can assign roles to hosts by using Cloudera Manager.

Procedure

1. In the Cloudera Manager Home page, select the Hue service.
2. On the Hue service page, click the Instances tab.
3. On the Instances tab page, click Add Role Instances on the right side of the page.
4. On the Assign Roles page:
   a) Click Select hosts under the role names to select hosts where you want to add the role. This launches a dialog box where you can select hosts where you want to add the role.

   The wizard evaluates host hardware configurations to determine the best hosts for each role. All worker roles are automatically assigned to the same set of hosts as the HDFS DataNode. You can reassign if necessary. Specify hostnames by IP address, rack name, or by range:

Range Definition	Matching Hosts
10.1.1.[1-4]	10.1.1.1, 10.1.1.2, 10.1.1.3, 10.1.1.4
host[1-3].company.com	host1.company.com, host2.company.com, host3.company.com
host[07-10].company.com	host07.company.com, host08.company.com, host09.company.com, host10.company.com

   b) Click OK to save your hostname selection for a role.
   c) When you are finished assigning roles to hosts, click Continue in the lower right corner of the page.
5. Cloudera Manager automatically adds the roles and returns you to the Hue Instances tab.

   Note: If your cluster uses Kerberos, Cloudera Manager automatically adds a Hue Kerberos Ticket Renewer role to each host where you assigned the Hue Server role instance. Cloudera Manager throws a validation error if the new Hue Server role does not have a co-located Kerberos Ticket Renewer role. See "Enabling Kerberos for Authentication" for more information.

Customizing the Hue web UI

To customize the Hub Web UI, add configuration properties in Cloudera Manager. You can customize the banner, the page logo, the splash screen, the cache timeout setting, and you can enable or disable anonymous usage data collection.

Adding a custom banner

Add a custom banner to the Hue web UI by adding your custom HTML to the Top Banner Custom HTML property in Cloudera Manager.

About this task

To add a custom banner to the Hue web UI:

Procedure

1. In the Cloudera Manager Admin Console, select ClustersHueConfiguration to navigate to the configuration page for Hue.
2. In the Search text box, type top banner to locate the Top Banner Custom HTML banner_top_html configuration parameter.
3. Add your custom HTML to the text box for the configuration parameter.
4. Click Save Changes at the bottom of the page to save the configuration change.

5. Refresh the browser page and click the restart icon at the top of the page so the new configuration changes can be read by the server:
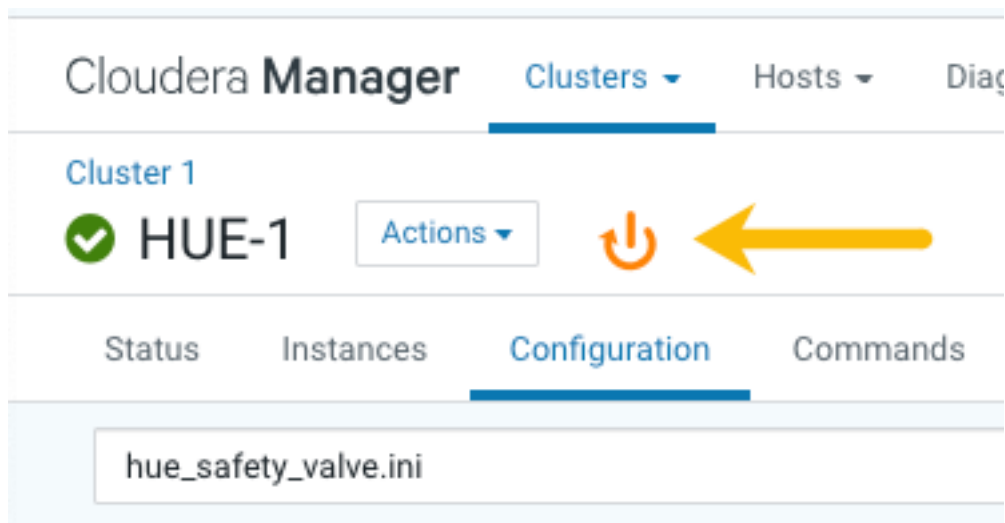
6. In the Hue configuration page of Cloudera Manager, select Web UIHue Load Balanced to load Hue and view your custom banner.

Changing the page logo

You can replace the Hue web UI logo with a custom log that is created with SVG code. Add any type of logo you want, but your custom logo should be designed to fit into a 160 x 40 pixel space.

About this task

For example, here is the Hue logo shown below:

You can change this Hue logo by adding the appropriate SVG code to the logo_svg property under [desktop] [[cust om]] in the Hue Service Advanced Configuration Snippet (Safety Valve) for hue_safety_valve.ini configuration parameter in Cloudera Manager as follows:
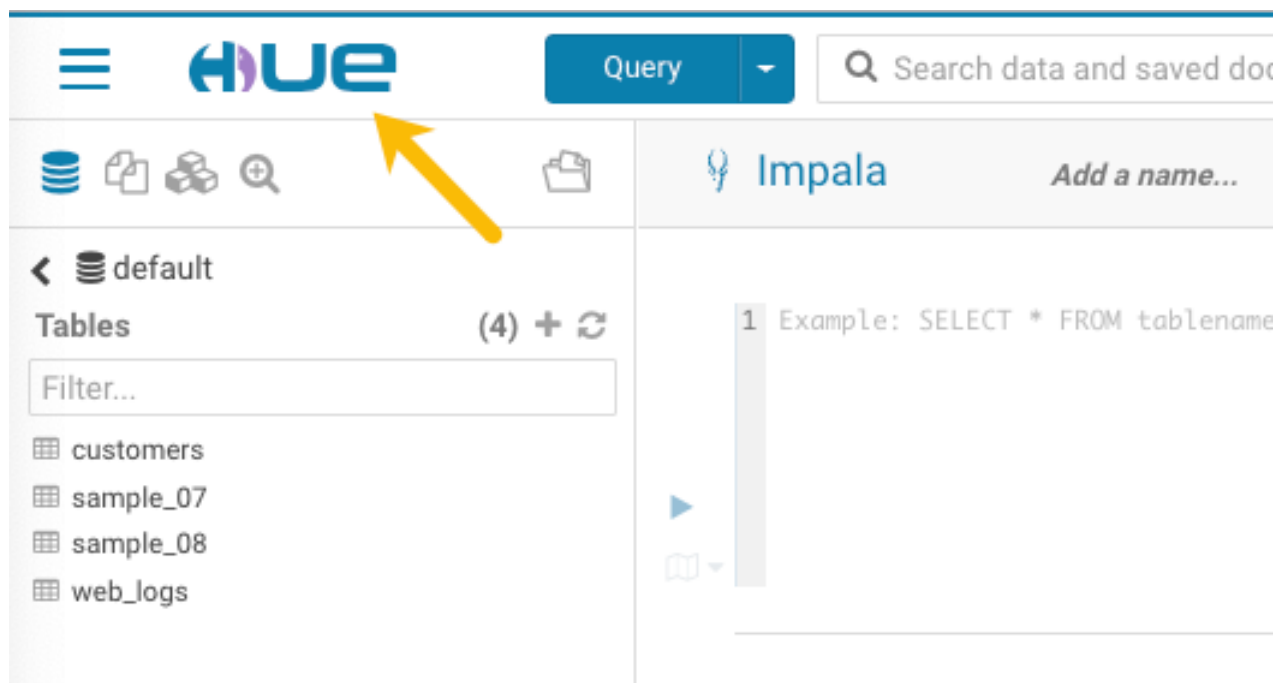
To replace the Hue logo with a custom logo:

Procedure

1. In the Cloudera Manager Admin Console, select ClustersHueConfiguration to navigate to the configuration page for Hue.

2. In the Search text box type hue_safety_valve.ini to locate the configuration parameter:

3. Add the following parameters with your custom logo SVG code to the Hue Service Advanced Configuration Snippet (Safety Valve) for hue_safety_valve.ini configuration parameter:

```
[desktop]
[[custom]]
logo_svg='<custom_svg_code_for_logo>'
```

For example, the following SVG code replaces the Hue logo with a red heart:

```
[desktop]
[[custom]]
logo_svg='<g><path stroke="null" id="svg_1" d="m44.41215,11.43463c-4.05
017,-10.71473
-17.19753,-5.90773 -18.41353,-0.5567c-1.672,-5.70253 -14.497,-9.95663
-18.411,0.5643c-4.35797,11.71793 16.891,22.23443 18.41163,23.95773c1.518
1,-1.36927 22.7696,-12.43803
18.4129,-23.96533z" fill="#ffffff"/> <path stroke="null" id="svg_2"
d="m98.41246,10.43463c-4.05016,-10.71473 -17.19753,-5.90773 -18.41353,-
0.5567c-1.672,-5.70253
-14.497,-9.95663 -18.411,0.5643c-4.35796,11.71793 16.891,22.23443 18.4116
4,23.95773c1.5181,-1.36927
22.76959,-12.43803 18.41289,-23.96533z" fill="#FF5A79"/> <path stroke="nu
ll" id="svg_3"
```

```
d="m154.41215,11.43463c-4.05016,-10.71473 -17.19753,-5.90773 -18.41353,-0
.5567c-1.672,-5.70253
-14.497,-9.95663 -18.411,0.5643c-4.35796,11.71793 16.891,22.23443 18.41164
,23.95773c1.5181,-1.36927 22.76959,-12.43803 18.41289,-23.96533z" fill="
#ffffff"/> </g>'
```

4. Click Save Changes at the bottom of the page to save the configuration change.

5.

Refresh the browser page and click the restart icon ⏻ at the top of the page so the new configuration changes can be read by the server.

6. In the Hue configuration page of Cloudera Manager, select Web UIHue Load Balanced to load Hue and view your custom logo.

If you added the sample SVG code that defines a red heart as the logo, your Hue web UI looks like this:
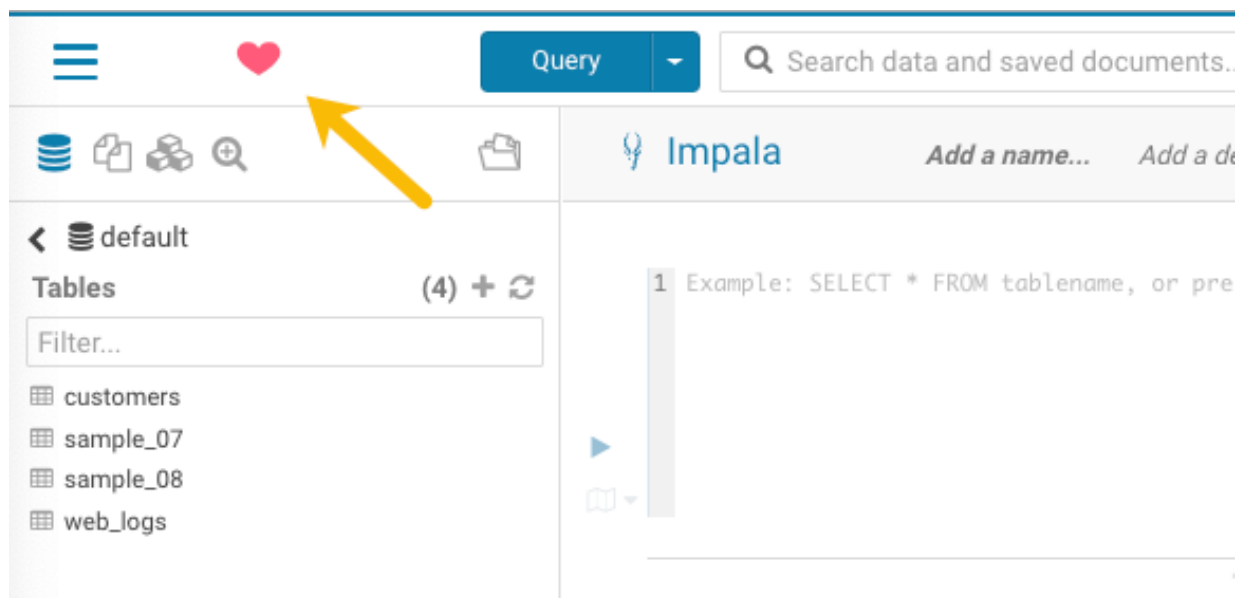
Setting the cache timeout

Enable Hue UI caching by setting a timeout in milliseconds. The default is 86400000 milliseconds or one day. Set the timeout to 0 to disable caching. You can set the cache timeout using the cacheable_ttl property under [desktop][[c ustom]] in the Hue Service Advanced Configuration Snippet (Safety Valve) for hue_safety_valve.ini configuration property in Cloudera Manager as follows.

About this task

To set the cache timeout value:

Procedure

1. In the Cloudera Manager Admin Console, select ClustersHueConfiguration to navigate to the configuration page for Hue.

2. In the Search text box, type hue_safety_valve.ini to locate the Hue Service Advanced Configuration Snippet (Safety Valve) for hue_safety_valve.ini configuration parameter.

3. Add the following parameters with the cache timeout value to the Hue Service Advanced Configuration Snippet (Safety Valve) for hue_safety_valve.ini configuration parameter:

```
[desktop]
```

```
[[custom]]
cacheable_ttl=<value_in_milliseconds>
```

For example, the following configuration sets the cache timeout to the default value of 86400000 milliseconds:

```
[desktop]
[[custom]]
cacheable_ttl=86400000
```

4. Click Save Changes at the bottom of the page to save the configuration change.

5.

Refresh the browser page and click the restart icon at the top of the page so the new configuration changes can be read by the server and the new cache timeout limit takes effect.

Enabling or disabling anonymous usage date collection

Hue tracks anonymized pages and application versions to gather information about application usage levels. The data collected does not include hostnames or IDs. For example, the data collected has the format /2.3.0/pig or /2.5.0/beesw ax/execute.

About this task

To enable or disable anonymous usage data collection:

Procedure

1. In the Cloudera Manager Admin Console, select ClustersHueConfiguration to navigate to the configuration page for Hue.

2. In the Search text box, type usage to locate the Enable Usage Data Collection check box:

- To enable anonymous data collection, check the box, which is the default setting.
- To disable anonymous data collection, clear the check box.

3. Enter a Reason for change..., and then click Save Changes at the bottom of the page to save the configuration change.

4.

Refresh the browser page and click the restart icon at the top of the page so the new configuration changes can be read by the server and the new data collection setting takes effect.

Enabling Hue applications with Cloudera Manager

Most Hue applications are configured by default, based on the services you have installed. Cloudera Manager selects the service instance that Hue depends on. If you have more than one service, you may want to verify or change the service dependency for Hue. If you add a service such as Oozie after you have set up Hue, you must set the dependency because it is not done automatically.

About this task

To add a dependency in Hue:

Procedure

1. In the Cloudera Manager Admin Console, select ClustersHueConfiguration to navigate to the configuration page for Hue.

2. Filter by ScopeHue (Service-Wide) and CategoryMain .

3. Select the *<service_name>* Service property that you want to set a dependency for. Select none to remove a dependency.

4. Enter a Reason for change..., and then click Save Changes at the bottom of the page to save the configuration change.

5.

   Refresh the browser page and click the restart icon [restart icon] at the top of the page so the new configuration changes can be read by the server and the new setting takes effect.

Running shell commands

You can run shell commands to administer Hue programmatically. For example, to reset the superuser password or to assign an LDAP user superuser permissions.

About this task

To run Hue shell commands:

Procedure

1. Set HUE_CONF_DIR to the latest Hue process directory:

```
export HUE_CONF_DIR="/var/run/cloudera-scm-agent/process/`ls -alrt /var/
run/cloudera-scm-agent/process | grep HUE_SERVER | tail -1 | awk '{print
$9}'`"
echo $HUE_CONF_DIR
```

2. Set environment variables used to run the Hue webserver:

   • CentOS/RHEL:

   ```
   for line in `strings /proc/$(lsof -i :8888|grep -m1 python|awk '{ print
   $2 }')/environ|egrep -v "^HOME=|^TERM=|^PWD="`;do export $line;done
   ```

   • Ubuntu:

   ```
   for line in `strings /proc/$(lsof -i :8888|grep -m1 hue|awk '{ print $2
   }')/environ|egrep -v "^HOME=|^TERM=|^PWD="`;do export $line;done
   ```

3. Run shell subcommands

When true, HUE_IGNORE_PASSWORD_SCRIPT_ERRORS runs the Hue shell even if hue.ini contains passwords generated by Cloudera Manager (such as bind_password and ssl_password).

> **Note:** Do not export HUE_IGNORE_PASSWORD_SCRIPT_ERRORS or HUE_DATABASE_PAS SWORD to ensure that they are not stored and only apply to this command.

For CDH parcel deployments:

- Run the interactive Hue Python shell (Ctrl+D to quit)

```
HUE_IGNORE_PASSWORD_SCRIPT_ERRORS=1 /opt/cloudera/parcels/CDH/lib/hue/
build/env/bin/hue shell
```

Or with the database password:

```
HUE_IGNORE_PASSWORD_SCRIPT_ERRORS=1 HUE_DATABASE_PASSWORD=<your db passw
ord> /opt/cloudera/parcels/CDH/lib/hue/build/env/bin/hue shell
```

- Change a user password

```
HUE_IGNORE_PASSWORD_SCRIPT_ERRORS=1 /opt/cloudera/parcels/CDH/lib/hue/bu
ild/env/bin/hue changepassword admin
```

- Promote Hue user to superuser

```
HUE_IGNORE_PASSWORD_SCRIPT_ERRORS=1 /opt/cloudera/parcels/CDH/lib/hue/bu
ild/env/bin/hue shell
```

```
from django.contrib.auth.models import User
a = User.objects.get(username='gwen')
a.is_superuser = True
a.save()
```

- Count all of the documents of a certain user:

```
from django.contrib.auth.models import User
from desktop.models import Document2

user=User.objects.get(username='demo')
Document2.objects.documents(user=user).count()

Out[X]: 1167
```

- List available subcommands

```
HUE_IGNORE_PASSWORD_SCRIPT_ERRORS=1 /opt/cloudera/parcels/CDH/lib/hue/bu
ild/env/bin/hue
```

For CDH package deployments:

-
```
HUE_IGNORE_PASSWORD_SCRIPT_ERRORS=1 /usr/lib/hue/build/env/bin/hue shell
```

Connect an external database

Hue needs its own database to store items such as user account information, job submissions, and SQL queries. It is packaged with a lightweight embedded PostgreSQL database, which is intended only for proof-of-concept deployments with one Hue server. For production environments, Cloudera recommends connecting Hue to an external database.

There are two ways to connect Hue to an external database:

- During a new CDP installation with the Cloudera Manager Installation Wizard at the Database Setup step. The database must be installed, configured, and running.
- After CDP is installed with Cloudera Manager, go to the HueConfiguration tab. You can migrate from an old database and connect to a new one. Or you can just connect to the new database without saving the data in the old database.

It is only necessary to migrate to a new database if you want to save the data in your current database. Otherwise, connect to the new database and restart Hue without migrating the old database data. External databases can be remote, but ensure that the database server is properly configured to listen on the correct address to receive requests from Hue.

Enabling a multi-threaded environment for Hue

A multi-threaded environment can help reduce the time it takes to migrate data from one database to other. By default, operations run on a single thread. For example, if you are switching from MySQL as the backend database for Hue to Oracle, then enabling a multi-threaded environment significantly reduces the data transfer time.

Procedure

1. Log into Cloudera Manager as an Administrator.
2. Go to Clusters Hue service Configuration Hue Service Advanced Configuration Snippet (Safety Valve) for hue_safety_valve.ini .
3. Locate the [[database]] section under [desktop] and set threaded to true:

```
[desktop]
[[database]]
options={"threaded":true}
```

4. Click Save Changes.
5. Restart the Hue service.