

# Exercise 01:

## Understanding

### YARN



# Managing the YARN Service Using Cloudera Manager UI

Objective: To Use the **Cloudera Manager UI** and the ResourceManager UI

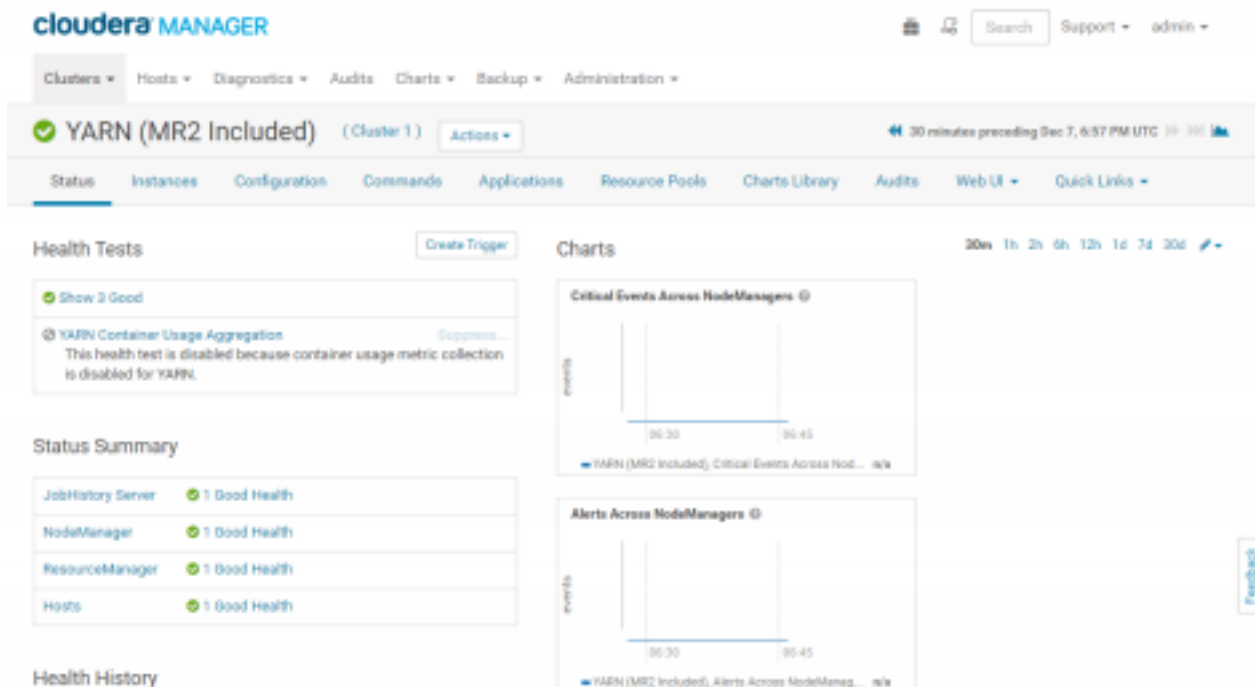
## Exploring the Cloudera Manager UI

Explore the **Cloudera Manager UI** service management and configuration features for YARN

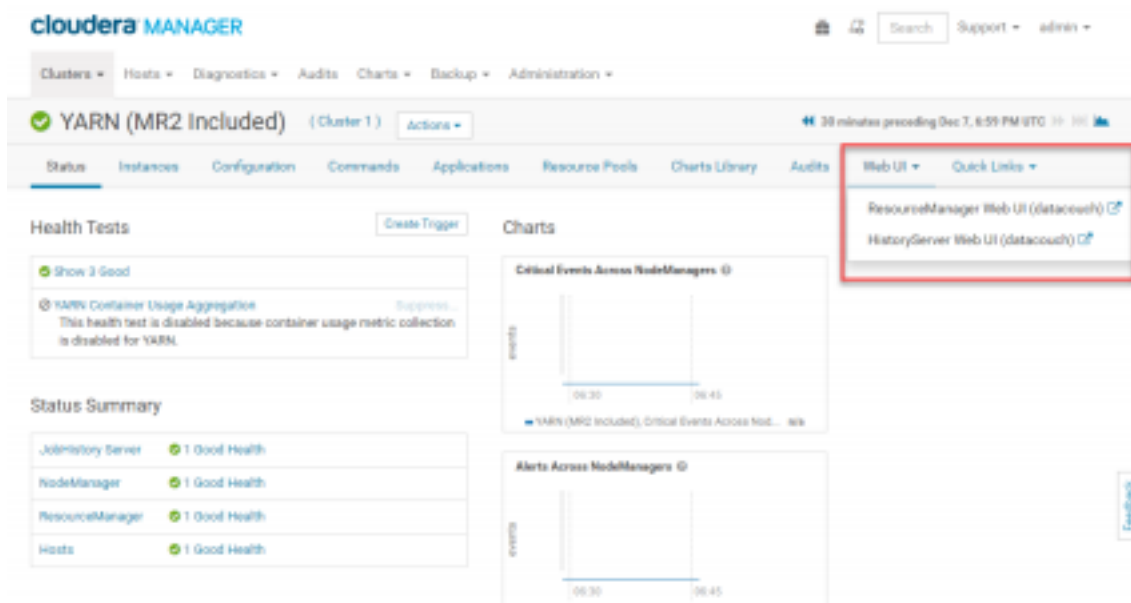
1. Open the browser and connect to the CM at the URL

<http://localhost:7180>

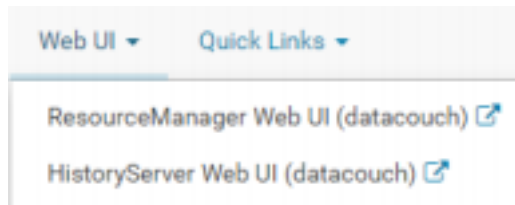
2. Login to the **Cloudera Manager UI** using the user name **admin** and the password **admin**.
3. Click Yarn Services in the **Cloudera Manager UI**.
4. Select the YARN service on the Services page.



5. Click on Web UI in the top right-side corner of the YARN Services page.



6. Click Web UI and select ResourceManager Web UI.



The ResourceManager UI Web interface opens on another browser tab.

If simply clicking the quick link fails to open the ResourceManager UI or you want to view the original ResourceManager UI replace the default URL in the browser tab with <http://localhost:8088>

The screenshot shows the 'All Applications' page in the Hadoop Resource Manager UI. It features a sidebar with navigation links and a main table of applications. The table has columns for ID, User, Name, Application Type, Queue, Start Time, Finish Time, State, Progress, and Tracking URL. Several jobs are listed, including 'word count', 'DistributedWordCount', 'OrderedWordCount', 'RegexProgramDemo', and 'RegexProgramDemo2'. All listed jobs are in a 'FINISHED' state with a 'SUCCEEDED' status.

ID	User	Name	Application Type	Queue	Start Time	Finish Time	State	Progress	Tracking URL
application_13617752268_000	ubuntu-ep	word count	MAPREDUCE	default	Tue Sep 8 11:55:49 AM 2015	Tue Sep 8 11:58:56 AM 2015	FINISHED	SUCCEEDED	NA
application_13617752268_001	ubuntu-ep	DistributedWordCount	Word	default	Tue Sep 8 11:58:57 AM 2015	Tue Sep 8 12:03:04 PM 2015	FINISHED	SUCCEEDED	NA
application_13617752268_002	ubuntu-ep	OrderedWordCount	TC2	default	Tue Sep 8 12:03:05 PM 2015	Tue Sep 8 12:04:52 PM 2015	FINISHED	SUCCEEDED	NA
application_13617752268_003	ubuntu-ep	RegexProgramDemo	TC2	default	Tue Sep 8 12:04:53 PM 2015	Tue Sep 8 12:04:53 PM 2015	FINISHED	SUCCEEDED	NA
application_13617752268_004	ubuntu-ep	RegexProgramDemo2	MAPREDUCE	default	Tue Sep 8 12:04:54 PM 2015	Tue Sep 8 12:05:52 PM 2015	FINISHED	SUCCEEDED	NA

7. Take a few moments to click on the links in the menu on the left and familiarize yourself with the various pages and the information they provide. Answer the following questions:

Where can you find information regarding the current version, last restart, and current status of the ResourceManager, as well as the current version of Hadoop and the Cluster ID?

Where can you find information for a node, such as its rack location, current state, address, HTTP address, Hadoop software version, and available resources?

Where can you find a list of all jobs that have been submitted but have not yet been accepted/approved to run?

Where can you find a list of all jobs that have been accepted but are not yet running?

Where can you find information on a job that has failed?

Where can you find information on a job that has successfully finished? Where can you find information on queues and the jobs that are using them?

- Close the ResourceManager UI browser tab.
- With the YARN service still selected in the Cloudera Manager UI, view the types of information available on the Summary page. Use this page to answer the following questions:

What is the current status of the ResourceManager?

How many NodeManagers have been configured, and how many are currently started?

How long has it been since the last time the ResourceManager was restarted? What percentage of ResourceManager Heap is being used?

How many applications have been submitted? How many are currently running? How many have completed? How many have failed?

## Working with YARN Service Using the CLI

**Objective:** To use CLI commands and the YARN API to manage the YARN service YARN CLI

### User Commands

Use YARN CLI commands useful to users of a Hadoop cluster.

1. Open Terminal.
2. Find out what version of Hadoop is running on the system.

```
yarn version
```

3. Find out what happens when the yarn application -list command is executed without supplying any application types or states.

```
yarn application -list
```

**NOTE:** That by default, only applications that are in the SUBMITTED, ACCEPTED, or RUNNING state is listed.

```
19/11/01 10:21:15 INFO client.RMPProxy: Connecting to ResourceManager at datacouch.h.training.io/172.31.7.238:8050
19/11/01 10:21:15 INFO client.AHSPProxy: Connecting to Application History server at datacouch.training.io/172.31.7.238:10200
Total number of applications (application-types: [], states: [SUBMITTED, ACCEPTED, RUNNING] and tags: []):0
Application-Id      Application-Name      Application-Type
User                Queue                State                Final-State
Progress            Tracking-URL
```

4. Generate a list of all applications that are in the FINISHED state.

```
yarn application -list -appStates FINISHED
```

```

19/11/01 10:22:05 INFO client.NMProxy: Connecting to ResourceManager at datacouch
h.training.io/172.31.7.238:8050
19/11/01 10:22:05 INFO client.AMSProxy: Connecting to Application History server
at datacouch.training.io/172.31.7.238:10200
Total number of applications (application-types: [], states: [FINISHED] and tags
[]): 17

```

User	Application-Id	Application-Name	Application-Type
Progress	Queue	State	Final-State
Tracking-URL			
application_1572580395744_0003	JavaWordCount	SPARK	
training	default	FINISHED	SUCCEEDED
100%		:18081/history/application_1572580395744_0003/1	
application_1572580395744_0004	JavaWordCount	SPARK	
training	default	FINISHED	SUCCEEDED
100%		:18081/history/application_1572580395744_0004/1	
application_1572580395744_0001	JavaWordCount	SPARK	
training	default	FINISHED	SUCCEEDED
100%		:18081/history/application_1572580395744_0001/1	
application_1572580395744_0002	JavaWordCount	SPARK	
training	default	FINISHED	SUCCEEDED
100%		:18081/history/application_1572580395744_0002/1	
application_1572580395744_0007	JavaWordCount	SPARK	
training	default	FINISHED	SUCCEEDED
100%		:18081/history/application_1572580395744_0007/1	
application_1572580395744_0005	JavaWordCount	SPARK	
training	default	FINISHED	SUCCEEDED
100%		:18081/history/application_1572580395744_0005/1	
application_1572580395744_0006	JavaWordCount	SPARK	
training	default	FINISHED	SUCCEEDED
100%		:18081/history/application_1572580395744_0006/1	

5. Generate a list of nodes running the NodeManager daemon.

```
yarn node -list
```

What command would filter the list of nodes by those in the DECOMMISSIONED state?  
Hint: Use yarn node -help.

6. Run the yarn logs command without an application ID (which will cause it to fail) and pipe the resulting help information to the application to read.

```
yarn logs | more
```

Scroll through the information, noting the options that can be applied with this command once an application ID is provided, or simply press q to quit the application.

## End of Exercise