

Scheduler ActivityManager - Test Report

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Success Test cases:

Query /scheduler/activities and check the response with no NM

Query /scheduler/activities and check the response with few NMs before registration.

Allocation for an application is done and app has finished or (No apps is running)

Allocation for an application is done and app is running with pending requests.

Allocation for an application is done and app is running. Cluster is full.

Allocation for an application is done and app is running. Second app is awaiting due to AM resource percentage.

Allocation for an application is done and app is running. Second app was awaiting due to AM resource percentage. Once app1 is done, app2 has got resource.

Allocation for an application gives below REST o/p some times. Sometimes I am getting clear o/p as above while app is running.

Allocation for an application gives below REST o/p some times. Duplicate o/p

Allocation for an application done for 50% of resources as user-limit is 0.5.

Negative Test cases:

Query is done for invalid node.

App query is done for invalid app

App query is done like below

Success Test cases:

1. Query /scheduler/activities and check the response with no NM

Command: scheduler/activities

REST O/P:

```
{  
  "diagnostic": "No node manager running in the cluster"  
}
```

2. Query /scheduler/activities and check the response with few NMs before registration.

Command: scheduler/activities

REST O/P:

```
{  
  "diagnostic": "waiting for next allocation"  
}
```

3. Allocation for an application is done and app has finished or (No apps is running)

Command: scheduler/activities?nodeId=localhost:25006

REST o/p:

```
{  
  "nodeId": "localhost:25006"  
  "timeStamp": "1469792611186"  
  "allocations": {  
    "finalAllocationState": "SKIPPED"  
    "root": {  
      "name": "root"  
      "priority": "-1"  
      "allocationState": "SKIPPED"  
      "Diagnostic": "do not need more resource"  
    }  
  }  
}
```

Comments

- a. I think Diagnostic message could be improved. "Applications does not need more resource"
- b. For node activity, "**priority**": "-1" does not make sense. Could we hide the same?
- c. **timeStamp** is not meaningful ("*timeStamp*": "1469792611186"). Its could be date and time or relative to previous activity.

4. Allocation for an application is done and app is running with pending requests.

Command: scheduler/activities?nodeId=localhost:25006

REST o/p:

```
{  
  "nodeId": "localhost:25006"
```

Comments:

5. Allocation for an application is done and app is running. Cluster is full.

REST o/p:

6. Allocation for an application is done and app is running. Second app is awaiting due to AM resource percentage.

Command: scheduler/app-activities?appld=application 1469802642816 0004

REST o/p:

```
{
  "applicationId": "application_1469802642816_0004"
  "diagnostic": "waiting for display"
  "timeStamp": "1469803850533"
}
```

Comments:

It is not desired o/p. It should am-resource not available. Please help to check the same.

7. Allocation for an application is done and app is running. Second app was awaiting due to AM resource percentage. Once app1 is done, app2 has got resource.

Command: scheduler/app-activities?appld=application_1469802642816_0004

REST o/p:

For AM Container:

```
{
  "applicationId": "application_1469802642816_0004"
  "allocations": {
    "nodeId": "localhost:25006"
    "queueName": "default"
    "priority": "0"
    "allocatedContainerId": "container_1469802642816_0004_01_000001"
    "allocationState": "ACCEPTED"
    "timeStamp": "1469803970106"
    "allocationAttempt": {
      "name": "container_1469802642816_0004_01_000001"
      "priority": "0"
      "allocationState": "ALLOCATED"
    }
  }
}
```

For Normal Container:

```
{
  "applicationId": "application_1469802642816_0004"
  "allocations": {
    "nodeId": "localhost:25006"
    "queueName": "default"
    "priority": "0"
  }
}
```

```

    "allocatedContainerId": "container_1469802642816_0004_01_000002"
    "allocationState": "ACCEPTED"
    "timeStamp": "1469806932788"
    "allocationAttempt": [2]
      0: {
        "priority": "0"
        "allocationState": "SKIPPED"
        "diagnostic": "priority skipped"
      }
      1: {
        "name": "container_1469802642816_0004_01_000002"
        "priority": "20"
        "allocationState": "ALLOCATED"
      }
    }
  }
}

```

Comments:

- State of application_1469802642816_0004 after allocation will be RUNNING. Could we propose something here that what can be target state since container is allocated (failed or running)
- Could we also print node_label here.
- "priority skipped" ⇒ "Skipped allocation at priority level 0"

8. Allocation for an application gives below REST o/p some times. Sometimes I am getting clear o/p as above while app is running.

Command: scheduler/app-activities?appld=application_1469806352302_0001

REST o/p:

```

{
  "applicationId": "application_1469806352302_0001"
  "diagnostic": "waiting for display"
  "timeStamp": "1469806795262"
}

```

9. Allocation for an application gives below REST o/p some times. Duplicate o/p

Command: scheduler/app-activities?appld=application_1469806352302_0003

REST o/p:

```

{

```

```
"applicationId": "application_1469806352302_0003"
"allocations": [3]
  0: {
    "nodeId": "localhost:25006"
    "queueName": "default"
    "priority": "0"
    "allocationState": "SKIPPED"
    "timeStamp": "1469807330384"
    "allocationAttempt": {
      "priority": "0"
      "allocationState": "SKIPPED"
      "diagnostic": "do not need more resource"
    }-
  }-
  1: {
    "nodeId": "localhost:25006"
    "queueName": "default"
    "priority": "0"
    "allocationState": "SKIPPED"
    "timeStamp": "1469807331392"
    "allocationAttempt": {
      "priority": "0"
      "allocationState": "SKIPPED"
      "diagnostic": "do not need more resource"
    }-
  }-
  2: {
    "nodeId": "localhost:25006"
    "queueName": "default"
    "priority": "0"
    "allocationState": "SKIPPED"
    "timeStamp": "1469807332394"
    "allocationAttempt": {
      "priority": "0"
      "allocationState": "SKIPPED"
      "diagnostic": "do not need more resource"
    }-
  }-
}
```

10. Allocation for an application done for 50% of resources as user-limit is 0.5.

Command: scheduler/app-activities?appld=application_1469806352302_0003

REST o/p:

```
{
  "applicationId": "application_1469806352302_0006"
  "allocations": [3]
    0: {
      "nodeId": "localhost:25006"
      "queueName": "default"
      "priority": "0"
      "allocatedContainerId": "container_1469806352302_0006_01_000003"
      "allocationState": "ACCEPTED"
      "timeStamp": "1469807945662"
      "allocationAttempt": [2]
        0: {
          "priority": "0"
          "allocationState": "SKIPPED"
          "diagnostic": "priority skipped"
        }-
        1: {
          "name": "container_1469806352302_0006_01_000003"
          "priority": "20"
          "allocationState": "ALLOCATED"
        }-
      }-
    1: {
      "nodeId": "localhost:25006"
      "queueName": "default"
      "priority": "0"
      "allocationState": "REJECTED"
      "timeStamp": "1469807946683"
    }-
    2: {
      "nodeId": "localhost:25006"
      "queueName": "default"
      "priority": "0"
      "allocationState": "REJECTED"
      "timeStamp": "1469807947677"
    }-
  }
}
```

Comments:

Rejected need to have diag associated with it.

Negative Test cases:

1. Query is done for invalid node.

Command: cluster/scheduler/activities?nodeId=localhost:25009

REST o/p:

```
{
  "nodeId": "localhost:25009"
  "diagnostic": "Cannot find node manager with given node id"
}
```

2. App query is done for invalid app

Command: cluster/scheduler/app-activities?appId=applicatmb076

REST o/p:

```
{
  "RemoteException": {
    "exception": "IllegalArgumentException"
    "message": "Invalid ApplicationId prefix: applicatmb076. The valid ApplicationId should start with prefix application"
    "javaClassName": "java.lang.IllegalArgumentException"
  }-
}
```

3. App query is done like below

Command: cluster/scheduler/app-activities

REST o/p:

```
{
  "RemoteException": {
    "exception": "NullPointerException"
    "javaClassName": "java.lang.NullPointerException"
  }
}
```


Comments:

I think we should not get NPE here.