# Activity context

## RELATED TICKET

309192 - mise1-c3-pss-asb1 disk ID5 in fault

309849 - Broker 3 is not running

## Description

With broker 1 removed from the Kafka cluster, its OS reinstalled, and the partitions recreated (using MOP #49) we must now re-install the Kafka services on this broker.

The goal of this procedure is to install the Kafka services on the broker 1; then re-integrate brokers 1 and 3 simultaneously back into the cluster.

* **[HDP] Broker installation - MISE1-C3-PSS-ASB1**
  + Reintegration of the Broker in kafka Pool
  + Kafka restart from Ambari
  + Stop Consumers
  + Delete Kafka Topics
  + Recreate the topics so that it is deploy on new broker too
  + Reconfigure Kafka to support 3 brokers
  + Reconfigure consumers (topology and tsng) to support 4 brokers
  + Restart Ambari services on ASB1
  + Restart Consumers

Impact à No CDR generation during probe and Kafka Topic recreation (5hour downtime max)

**What to check after installation?**

Check that the node is back into the cluster and processing data.

* Check CP / UP consumers ingest the data into Elasticsearch

# ACTIVITY STEPS

## Prerequisite

* Access to the EOAM server
* Prepare Inventory
* Prepare Consumers configuration to include new broker
* Deploy the PSS scripts:
* <https://webhelp.astellia.loc/Doc/04_Indus/PP_IP/Nova/INFRASTRUCTURE/Topics/r_script_results_ansible.html>

## Activity

### Changes

1. Logon to the EOAM server as root and enable Ansible: exfo-ansible-on
2. Edit the host input file to only include the ASB1

A copy of the /opt/ansible/inventories/hdp/hosts file was created in the /home/oam\_astellia/309192 directory. This file must be edited to only include the ASB1 info.

The file must use hostname instead of IP address!!

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Comment every entry except the one for the ABS1 Admin LAN (172.30.166.6:22)

1. Execute ~~Host configuration script~~ PSS installation:

$ cd /opt/ansible/playbooks/

$ ansible-playbook -i /home/oam\_astellia/309192/hosts-309192 /opt/ansible/playbooks/system-security-policy.yml –-ask-vault-pass

1. Install Hortonworks cluster:

$ export CLOUD\_TO\_USE=static; cd ansible-hortonworks-master; bash install\_cluster.sh

At the end of the script, if no errors occur, you will be able to connect to Ambari UI and check that services are running.

If an error occurs, alternatively, you can run the following script:

$ cd /opt/ansible/playbooks/Appliance-Auto-Deploy-v3.14/ansible-hortonworks-master

$ ansible-playbook -i inventory/static playbooks/install\_cluster.yml --extra-vars=cloud\_name=static

If there are still errors, see the [Error on blueprint](https://webhelp.astellia.loc/Doc/04_Indus/PP_IP/BigData_AS2101/Topics/ts_blueprint_error_installing_appliance_hortonworks_bigdata.html) or [Certificate verification error on master-2](https://webhelp.astellia.loc/Doc/04_Indus/PP_IP/BigData_AS2101/Topics/ts_cert_verif_error_installing_appliance_hortonworks_bigdata.html) troubleshooting pages.

**Tip:** When Hive Server Interactive (also know as LLAP) must be installed on cluster, Hortonworks cluster installation fails (this is a known issue of the Hortonworks script). The message at the end of this step looks like:

TASK [ambari-blueprint : Fail if the cluster create task is in an error state] \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

fatal: [master2]: FAILED! => {"changed": false, "msg": "Failed to build the \*\*\*\*\*\*\*\*\* cluster. Task Status is FAILED."}

NO MORE HOSTS LEFT \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

to retry, use: --limit @/home/\*\*\*\*\*\*\*/ansible-hortonworks-master/playbooks/install\_cluster.retry

PLAY RECAP \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

broker1 : ok=52 changed=22 unreachable=0 failed=0

broker2 : ok=52 changed=22 unreachable=0 failed=0

localhost : ok=17 changed=5 unreachable=0 failed=0

master1 : ok=52 changed=22 unreachable=0 failed=0

master2 : ok=180 changed=52 unreachable=0 failed=1

worker1 : ok=52 changed=22 unreachable=0 failed=0

worker2 : ok=52 changed=22 unreachable=0 failed=0

worker3 : ok=52 changed=22 unreachable=0 failed=0

workerzoo : ok=52 changed=22 unreachable=0 failed=0

No troubleshooting is required, skip to the Hortonworks cluster configuration and your cluster should be functional.

1. Configure Hortonworks cluster:

$ cd .. && ansible-playbook -i ansible-hortonworks-master/inventory/static post\_config.yml

At the end of the script, if no errors occur, you will be able to connect to Ambari UI and [install Big Data Framework components](https://webhelp.astellia.loc/Doc/04_Indus/PP_IP/BigData_AS2101/Topics/c_install_config_bdf.html).

1. Check Ambari services and enable the host:
   1. SSH to the ASB1 and check the AmbariAgent server process is running:

$ ps -ef | grep Ambari

* 1. Enable ALL components on this host from the Ambari UI  
     à Certify that they’re all running.

**NOTE:** The next steps can be done for broker 1 and 3 simultaneously, if we wish to re-integrate both back into the cluster at the same time!

1. Check in Zookeeper that all brokers are visible

From the Kafka master node 1 (ASM1 - 172.30.166.9)

$ cd /usr/hdp/3.1.5.6048-1/kafka/bin  
$ sh zkCli.sh  
[zk: localhost:2181(CONNECTED) 0] ls /brokers/ids

All 4 brokers are listed. Note down the ID visible by the Zookeeper  
Then list their names, using:

[zk: localhost:2181(CONNECTED) 0] get /brokers/<ids>

1. Ensure that all consumers are stopped

Login to the Big Data master 2 node (ASM2 - 172.30.166.9) and stop ALL the consumers:

**Topology** Consumers:

$ cd /opt/astellia/**topology**/consumer-ingestor/bin  
$ ./real-time-consumer.sh stop --all  
Ensure they’re stopped using:  
$ ./real-time-consumer.sh status --all

**Tsng\_cp** and **Availability**

$ cd /opt/astellia/**tsng**/consumer-ingestor/bin  
$ ./real-time-consumer.sh stop –all  
Ensure they’re stopped using:  
$ ./real-time-consumer.sh status --all

1. **From Ambari UI, turn off maintenance mode for ASB1.**
2. From the ASM1 (Master 1) node, login to the Zookeeper client and delete and recreate the ast\_xdr\_common topic, with a new replication factor of 2 and adjust the retention.ms parameter accordingly:

à If this is the fourth broker to be added, set retention.ms=64800000; otherwise, make no changes to it:

Remove the topic from Zookeeper:

[zk: localhost:2181(CONNECTED) 0] ls /config/topics  
[ms\_export\_map\_wing, ast\_xdr\_common, ast\_topology\_imsi\_msisdn, lz\_referentials, test, ast\_xdr\_cp, ms\_export\_diameter\_wing, ast\_topology, ast\_xdr\_common, ast\_xdr\_common\_up, ambari\_kafka\_service\_check, correlated\_srvcc\_xdr, test-topic, ast\_xdr\_up, ast\_availability, \_\_consumer\_offsets]

rmr /config/topics/ast\_xdr\_common  
rmr /brokers/topics/ast\_xdr\_common  
rmr /admin/delete\_topics/ast\_xdr\_common

Node does not exist: /admin/delete\_topics/ast\_xdr\_common

Run the list command again to confirm that the partition is present

Recreate the topic:

./kafka-topics.sh --zookeeper mise1-c1-pss-asm1.wind3.exfo.loc:2181 --create --topic ast\_xdr\_common --partitions 224 **--replication-factor 2 --config retention.ms=18000000**

à If this is the fourth broker to be added, use retention.ms=64800000.

1. From the command line, check that we have the topic created with the required number of leaders and followers:

./kafka-topics.sh --zookeeper mise1-c1-pss-asm1.wind3.exfo.loc:2181 --describe --topic ast\_xdr\_common

* Monitor using the relevant Grafana dashboards, to confirm that all 3 brokers (or 4) are present in the cluster with replicas correctly assigned.

1. Update the bootstrap to add the newly added broker on the tsng\_cp consumer:
   1. Login into the ASM2 node (Master 2) and edit the file /opt/astellia/tsng/consumer-ingestor/etc/conf.d/**common-system\_custo.properties**

* The parameter must now include the asb1 and asb3:

kafka.bootstrap.servers=**mise1-c3-pss-asb1.wind3.exfo.loc:9092, mise1-c4-pss-asb2.wind3.exfo.loc**:9092, **mise1-c5-pss-asb3.wind3.exfo.loc:9092**, mise1-615-pss-asb5.wind3.exfo.loc:9092  
  


* 1. Clear the consumers offset by editing the file   
     /opt/astellia/tsng/consumer-ingestor/etc/conf.d/**real-time-consumer\_custo.properties**

The offset parameter must be increased by 1: consumer.offset.version.tsng\_cp

* 1. Push the configuration into HDFS:

$ /opt/astellia/tsng/consumer-ingestor/tools/push\_conf\_custo.sh  
(Answer Y to the first question and N to the second one)

* 1. Perform the steps 11.a to 11.c for the topology consumers:  
     (Path: /opt/astellia/topology/consumer-ingestor)
  2. Start ALL the consumers, one by one beginning with the tsng\_cp consumer.

Tsng\_cp and availability consumers:

$ cd /opt/astellia/**tsng**/consumer-ingestor/bin  
$ ./real-time-consumer.sh start –-all  
Ensure they’re running using:  
$ ./real-time-consumer.sh status --all

Topology consumers:

$ cd /opt/astellia/**topology**/consumer-ingestor/bin  
$ ./real-time-consumer.sh start –-all  
Ensure they’re running using:  
$ ./real-time-consumer.sh status --all

1. On SensAI, update the brokers’ list accordingly.
   1. Open SensAI -> Configuration -> Streaming Workflow. Then right click on the *Kafka Consumer/Kafka-consumer-cp* group and select edit.
   2. Navigate to *Kafka-conf* section and click on *Value*

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* 1. Delete the **boostrap.servers** key-value pair, and recreate it using the names of the brokers that are now active:

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* 1. Click on **Apply**, then **Save** the changes and **Deploy.**

### Verification

The results can be verified these ways:  
a) Host is on Ambari with Kafka services running

b) Kafka data partitions are correctly distributed (Grafana)

c) Grafana charts show data being processed on all 3 brokers (Kafka-Host)

d) Data is available in NEx

e) SensAI dashboards are displaying data

f) No publish errors present in the probes and TDRHub

### Rollback procedure

N/A. This is a forward only activity.

# mop summary

|  |  |
| --- | --- |
| **Date/Time:** | **02/10/2024 09:00 to 19:00 (Italy time)** |
| **EXFO Personnel:** | **Djamilo Jacinto / Eric Artus** |
| **Activity duration:** | **10 minutes** |
| **Outage:** | **No data during Kafka service restart & during probe restart. The data of the day the activity is done will be partial. Solution not fully reliable during the operations.** |
| **Impacted Packages:** | **None** |
| **Processes Restarted:** | **Restarts of Probes, TDR-Hub and Consumers** |
| **Impacted Servers:** | **Ambari & BigData Cluster** |
| **Impacted Host:** | **Hadoop Broker 1:**   |  |  |  | | --- | --- | --- | | Alias | IP or Hostname | ID | | MISE1-C3-PSS-ASB1 | 172.30.166.6 | N/A | |
| **Post Install verification duration:** | **5 hours** |