



MURAL Software Upgrade Guide

Version 3.8

Published: 2016-04-18

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Table of Contents

| | |
|---|-----------|
| Upgrade Overview | 7 |
| Before You Begin | 7 |
| Upgrade Package | 7 |
| Pre-Upgrade Tasks | 8 |
| Taking Backups | 8 |
| Stopping Processes | 10 |
| Upgrade Tasks | 12 |
| Upgrade Image on the Nodes | 12 |
| Downloading and Copying Patches | 14 |
| Install Patch on the Nodes | 14 |
| Upgrade Bulkstats Database on Insta Cluster | 15 |
| Post-Upgrade Tasks | 18 |
| Activate the New XML from the Master GMS Node | 18 |
| Apply Configurations to Nodes | 22 |
| Restart Processes | 28 |
| Enable the Collector in the Live Mode | 30 |

Upgrade Overview

MURAL provides Web-based reporting and analytics for deep packet inspection (DPI) data emerging from your network.

This document describes how to upgrade the MURAL application from release 3.6 to release 3.8.

Before You Begin

This document assumes that you have a working knowledge of Linux operating system. Before you begin the upgrade, we recommend that you review the Release Notes for 3.8.

Upgrade Package

The MURAL software upgrade package contains the following components:

- An ISO image file. For the image name and associated MD5 checksum, refer to the Release Notes.
- The XML file which is used by the master GMS node. This configuration file provides configuration settings for your setup based on the network topology.
- Any software patches that apply to the release. A complete list appears in the Release Notes.
- Management information bases (MIBs).

Pre-Upgrade Tasks

Before you begin the upgrade, perform the following tasks:

- "Taking Backups" below
- "Stopping Processes" on page 10

Taking Backups

It is recommended to take all backups before proceeding with the upgrade.

Take a Backup of all IBs

1. Create a folder where all the backed up files will be saved:

```
> en
# _shell
# mkdir -p <path-of-backup-folder>
```

For example,

```
# mkdir -p /data/Backup_files
```

2. Take a backup of all the IBs:

```
# cp -r <path-of-ib> <path-of-backup-folder>
```

For example,

```
# cp -r /data/ib/inbox /data/Backup_files
# cp -r /data/ib/work /data/Backup_files
```

3. Execute the following command:

```
# hdfs dfs -get /IB <path-of-backup-folder>
```

Take a Backup of Active Configurations

- Execute the following commands from the `_shell` prompt on all the nodes in your setup to take a backup of configurations:


```
> en
# config terminal
(config)# write memory
(config)# configuration write to <config-file-name>
(config)# configuration copy <config-file-name> <config-
backup-text-file-name>
```

- Execute the following commands to take a backup of cli configuration in the text format:

```
> en
# _shell
# echo show running-config full | cli -m config > <path-of-
the-backup-cli-text-file>
```

Take a Backup of Gateway Configurations

- Execute the following command to take a backup of gateway configurations for bulkstats:

```
echo show running-config full |cli -m config | grep
bulkStatsFile | grep collector > <path-of-the-backup-file>
```

For example, value in <path-of-the-backup-file> can be /data/coll_bsgateway_backup.txt. This file contains all the backed up configurations.

Take a Backup of Manually Modified Files

Perform the following procedure on all the nodes in your setup.

1. Execute the following commands to create folders to keep backup files:

```
> en
# _shell
# mkdir -p <full-path-of-patch-backup-file>
```

For example, value in <full-path-of-patch-backup-file> can be /data/Backup_files/Patch_backup.

2. Execute the following command on master Name node and master DPI

node:

```
# cp -r <full-path-of-the-file> <full-path-of-backup-folder>
```

For example, execute the following commands on the master Name node:

```
# cp /data/CoreJob/config/solutionConfig.json /data/Backup_
files/
# cp /opt/catalogue/atlas/dynamicWhiteListConfig.json
/data/Backup_files/image_dynamicWhiteListConfig.json
# cp /data/ib/inbox/dynamicWhiteListConfig.json /data/Backup_
files/
# cp -r /data/patchspace/patch/3.7.1 /data/Backup_files/Patch_
backup/
# cp /opt/samples/yarn_conf/capacity-scheduler.xml.template
/data/Backup_files/
```

For example, execute the following command on the master DPI node:

```
# cp /opt/tms/apache-tomcat/apache-tomcat-
7.0.27/conf/server.xml /data/Backup_files/
```

Stopping Processes

You must stop processes as explained in the following sections before proceeding with the upgrade.

Stop Oozie Jobs

- Log into master Name node and execute the following commands:

```
> en
# _shell
# pmx subshell oozie stop jobname all
```

Note: Wait until all the jobs are stopped. To verify if all the jobs are stopped, execute the following command:

```
# pmx subshell oozie show coordinator RUNNING jobs
```

Stop Rubix Processes

- Execute the following commands on all the Rubix nodes including RGE nodes:

```
(config)# no pm process rubix launch auto
(config)# wr mem
(config)# pm process rubix terminate
```

Stop Insta Processes

- Execute the following command on both the Insta nodes:

```
(config)# pm process insta terminate
```

Stop GMS Processes

- Execute the following commands on both the GMS nodes:

```
(config)# no pm process gms_server launch auto
(config)# no pm process pgsql launch auto
(config)# wr mem
(config)# pm process gms_server terminate
(config)# pm process pgsql terminate
```

Stop the Collector

- Execute the following commands:

```
(config)# no pm process collector launch auto
(config)# pm process collector terminate
(config)# wr mem
```

Upgrade Tasks

Perform the following steps to upgrade MURAL from release 3.6 to release 3.8:

- "Upgrade Image on the Nodes" below
- "Install Patch on the Nodes" on page 14
- "Upgrade Bulkstats Database on Insta Cluster" on page 15

Upgrade Image on the Nodes

Upgrade the image on the following nodes:

- Standby Collector Node
- Standby NameNode
- Master and Standby node of the additional Collector
- Master and standby GMS nodes
- All the Rubix nodes including the RGE node
- Master and standby Insta nodes
- Master and standby Compute nodes

Note: Ensure to upgrade image on Compute nodes rack wise. After upgrading the compute nodes on the first rack, verify that the nodes have come up with new image and joined the YARN cluster. Only after this verification, proceed with the upgrade on the next rack.

Perform the following step on all the nodes:

1. To create a user in GMS, execute the following commands:

```
/opt/tms/bin/cli -t en 'conf t' 'username imguser password  
usr!1234'  
/opt/tms/bin/cli -t en 'conf t' 'write memory'
```

2. Log into a node and execute the following commands:

```
(config)# image fetch scp://imguser:img!1234@gms-
2:/data/MURAL3.8/image-atlas3.8.rc1.img
(config)# image install image-atlas3.8.rc1.img
(config)# image boot next
(config)# write memory
(config)# reload
```

When you upgrade the image on a node, wait until the image is successfully upgraded on that node before proceeding to the other node. For example, wait until the standby GMS nodes come up with the new image before running these commands on the master GMS node.

To verify if the new image is available on a node, execute the following commands:

```
host [master: standby] > en
host [master: standby] # conf t
host [master: standby] (config) # sho ver
```

The output may resemble to the following:

```
Product name:      Content Analytics
Product release:   3.8.rc1
Build ID:          atlas3.8.rc1
Build date:        2016-02-19 16:53:56
```

Note: When upgrading the image on nodes in a cluster, execute the following command on the master node. This is required so that role of the master node is the same as it was before the upgrade.

```
host [master: standby] (config) # cluster master self
```

- Execute the following command to make the disk writable:

```
> en
# _shell
# mount -o remount,rw /
```

- Execute the following command to update patch on the nodes:

```
> en
# _shell
# sed -i "s/3.8.d3/3.8.rc1/g" /etc/solution_version
```

Downloading and Copying Patches

1. Log into the master GMS node and download all the patches, which are released for 3.8.rc1, available in the /data directory.
2. Secure copy (SCP) all the patches downloaded from the master GMS node to the /data directory on all the Collector nodes.

Install Patch on the Nodes

1. Execute the following commands on both the GMS nodes:

```
(config)# pm process gms_server launch auto
(config)# pm process pgsqld launch auto
(config)# wr mem
(config)# pm process pgsqld restart
(config)# pm process gms_server restart
```

2. Log into the master GMS node and execute the following commands:

```
> en
# _shell
pmx subshell patch_management
pm extension (patch management)> set gms-file
/config/gms/active-configuration/active.xml
pm extension (patch management)> fetch
http://192.168.153.17/release/atlas/atlas3.8.rc1/patch_
1/3.8.rc1.p1.tgz
pm extension (patch management)> install patch 3.8.rc1.p1 at
all
```

Upgrade Bulkstats Database on Insta Cluster

After the patch is installed successfully, wait for 15 minutes before upgrading the bulkstats database on the Insta cluster.

1. Perform the following steps to upgrade the schema for new XML for bulkstats cubes from the master Insta node:

- a. Execute the following commands:

```
> en
# _shell
# cli -m config
(config)# insta infinidb upgrade
```

- b. Wait for 10 to 15 minutes and check the output by executing the following command:

```
insta infinidb get-status-info
```

Note: Proceed to the next step only if the output displays <Infinidb Install status : INSTALLED>.

- c. Execute the following commands:

```
(config)# insta instance 1 cube-schema-upgrade apply
(config)# pm process insta restart
```

- d. Wait for a few minutes and check the output by executing the following command:

```
insta infinidb get-status-info
```

Note: Proceed to the next step only if the output displays <Infinidb Install status : INSTALLED>.

2. Perform the following steps to restart insta on the standby node:

- a. Execute the following commands:

```
> en
# _shell
```

```
# cli -m config
(config)# insta instance 1 cube-schema-upgrade apply
(config)# pm process insta restart
```

- b. Wait for a few minutes and check the status of infinidb by executing the following command:

```
insta infinidb get-status-info
```

The output may resemble as follows:

```
Infinidb Install status : INSTALLED
insta instance 0 service status : RUNNING
Insta instance 1 service status : RUNNING
Insta instance 2 service status : RUNNING
```

3. Execute the following commands to check the installation status:

```
[admin@host ~]# cli -t "en" "conf t" "insta infinidb get-
status-info" | grep "Insta instance 0 service status"
Insta instance 0 service status : RUNNING

[admin@host ~]# cli -t "en" "conf t" "insta infinidb get-
status-info" | grep "Infinidb Adaptor status"
Infinidb Adaptor status : Adaptor Running

[admin@host ~]# cli -t "en" "conf t" "insta infinidb get-
status-info" | grep "Active insta nodes"
Active insta nodes : <comma separated list of insta IPs>
```

Note the status as RUNNING and list of active insta nodes in the output.

4. Execute the following commands:

```
cd /opt/etc/scripts/bulkstats
./bulkstats_migrationDBTable.sh <bulkstats-db-name>
```

The output may resemble as follows:


```
Expected output:
ERROR 1146 (42S02) at line 1: Table 'bulkstats.stringid_snt_
dest_pt_code_bs_idmap' doesn't exist
ERROR 1146 (42S02) at line 1: Table 'bulkstats.stringid_snt_
startaddr_bs_idmap' doesn't exist
ERROR 1146 (42S02) at line 1: Table 'bulkstats.stringid_snt_
state_bs_idmap' doesn't exist
ERROR 1050 (42S01) at line 1: Table 'stringid_snt_servname_bs_
idmap' already exists
ERROR 1146 (42S02) at line 1: Table 'bulkstats.stringid_snt_
bindaddress_bs_idmap' doesn't exist
ERROR 1146 (42S02) at line 1: Table 'bulkstats.stringid_snt_
svctype_bs_idmap' doesn't exist
Creating table
Table created
Migrating data
```

Note: You can ignore the error messages in the output.

Post-Upgrade Tasks

After upgrading the image and applying required patches, perform the tasks described in this chapter:

- "Activate the New XML from the Master GMS Node" below
- "Apply Configurations to Nodes" on page 22
- "Restart Processes" on page 28

Activate the New XML from the Master GMS Node

1. (Mandatory for Service ID Report and Data Warehouse Integration (DWI) features) Execute the following command to add templates that are not available in ciscoConfig file:

For Service ID Report:

```
cd /config/gms/Profiles/Custom/  
ln -s /opt/deployment/GMS_  
Templates/oozie/App/serviceId/workflow_serviceId_apn_with_  
timeout.xml
```

For DWI:

```
cd /config/gms/Profiles/Custom/  
ln -s /opt/deployment/GMS_Templates/oozie/App/DWH/workflow_  
dwh_with_timeout_jobs.xml
```

2. Perform the following steps to run MMI for generating new XML:
 - a. Identify the manually updated values in cli. You will have to update these manually after the updating GMS. You must also update the collector related changes before the XML is activated.

The following attributes must be noted:

```
collector modify-instance 1 modify-adaptor edrflow  
modify-file-if flowFile filename-format  
collector modify-instance 1 modify-adaptor edrflow
```

```

modify-file-if flowFile input-directory
collector modify-instance 1 modify-adaptor edrflow
modify-file-if flowFile backup-file-expiry-period
collector modify-instance 1 modify-adaptor edrflow
modify-file-if flowFile backup-directory

```

The following properties, which are configured through mmi, can be updated during mmi:

- `adaptor.<>.numthreads`— can be obtained by searching for the string "num_threads" in the current running configuration.
 - `compute.dfs.datanode.data.dir`— can be obtained by searching for the string "dfs.datanode.data.dir" in the current running configuration.
 - `rubix sizing properties`— can be obtained by searching for the string "tomcatInstanceMaxSize, initialJavaHeapSize, rubixFQDN, mailSupport, mailNotificationSender, mailNotificationSender".
- b. Execute the following command:

```

# sh /opt/etc/scripts/mmi/cisco_mural_deployment_
wizard.sh

```

Use the existing active.xml as input XML to retain the hardware configuration. Note the name of the generated XML provided on the first page.

To use HIVE, perform the following steps:

- a. Edit the file, `/opt/deployment/GMS_Templates/hive/hive_mural.xml` and change the value of the "hive.metastore-ip" property to `${APPLICATION.PostgreSQL.|0|.Mgmt.VIP}` or `${APPLICATION.PostgreSQL.|1|.Mgmt.VIP}`. Specify `pgInstanceId` as 0 if the Starter or Medium pack is used. Specify `pgInstanceId` as 1 if the Standard pack is used.
- b. Create soft link for `/opt/deployment/GMS_Templates/hive/hive_`

mural.xml file at the location, /config/gms/Profiles/Custom/.

- c. Create soft link for /opt/deployment/GMS_Templates/oozie/Feed/edrhttp_edrflow/workflow_hive_edrhttp_edrflow_with_timeout.xml at the location /config/gms/Profiles/Custom/.
3. Launch the GMS UI using the URL, <https://<IP of GMS server>/configure>.
4. Open the new XML from the GMS UI and perform the following tasks:
 - a. On the **Application** tab, update the Application Name "workflow" instance "0".
 - b. (Mandatory for Service Id Report and DWI features) Add application profile from the list: "workflow_dwh_with_timeout_jobs.xml" and "workflow_serviceId_apn_with_timeout.xml".
 - c. Attach workflow_hive_edrhttp_edrflow_with_timeout.xml template on workflow application on the NN cluster.
 - d. Attach hive_mural.xml template on hive application on the NN cluster.
 - e. Save the XML after validation.
5. Manually disable auto bin sliding on Collector in the final XML. Change the Property_Type tag value to "disable".

```
<Property>
    <Property_Name>
adaptor.bulkStats.binning.autoBinSlide</Property_Name>
    <Property_Value>disable</Property_Value>
    <Property_Type>default</Property_Type>
    <Property_DataType>string</Property_DataType>
    <Property_OriginalName>adaptor.${adaptor-
name}.binning.autoBinSlide</Property_OriginalName>
    </Property>
</Property>
```

```

        <Property_Name>
adaptor.edrflow.binning.autoBinSlide</Property_Name>
        <Property_Value>disable</Property_Value>
        <Property_Type>default</Property_Type>
        <Property_DataType>string</Property_DataType>
        <Property_OriginalName>adaptor.${adaptor-
name}.binning.autoBinSlide</Property_OriginalName>
    </Property>
    <Property>
        <Property_Name>
adaptor.edrhttp.binning.autoBinSlide</Property_Name>
        <Property_Value>disable</Property_Value>
        <Property_Type>default</Property_Type>
        <Property_DataType>string</Property_DataType>
        <Property_OriginalName>adaptor.${adaptor-
name}.binning.autoBinSlide</Property_OriginalName>
    </Property>

```

- Execute the following commands to copy data from standby collector to master node:

```

> en
> _shell
> echo show running-config full | cli -m config | grep
"flowFile input-directory" | awk '{print $9}'
> echo show running-config full | cli -m config | grep
"httpFile input-directory" | awk '{print $9}'
> echo show running-config full | cli -m config | grep
"bulkStatsFile" |grep "input-directory" | awk '{print $9}'
> scp dir/* admin@<collector-vip>:/dir

```

Here, `dir` contains the output of these commands.

- From the master GMS node, activate the XML that has only Collector related changes in templates required for Phase3B:

```
> en
# _shell
cli -m config
(config)# gms config <New-XML> activate
```

Note: Allow the runtime activation to complete so that it applies the new template changes. This process may take 5 to 7 minutes as the activation process applies the new changes as per the new activated XML and will only stop and start Collector Process on all 4 Collector nodes including the NameNodes.

Apply Configurations to Nodes

- (Mandatory for Service ID Report) Log in to both NameNodes and execute the following commands:

```
> en
# _shell
# python /opt/etc/oozie/SolutionConfigs/EnableServiceId.py yes
(to enable service id in flow feed file)
```

- Perform the following steps on the name node server:
 - a. Execute the following commands to verify the difference between the current and earlier configuration:

```
> en
# _shell
# echo show running-config full | cli -m config >
/data/<name-of-the-text-file>
```

- b. To avoid any unexpected configuration difference between the setup, take a diff of the latest configuration file and the configuration file that was backed up before upgrading the image.
- c. Execute the commands that are found.

Note: Following are the expected commands to be executed on oozie subshell due to feature updates. Take a note of default values corresponding to the properties as these commands will overwrite the values.

```
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/MaxCount value string MaxCount
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/MaxCount/value value string 16000
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/droppingFalserateOSSignThreshold value
string droppingFalserateOSSignThreshold
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/droppingFalserateOSSignThreshold/value
value string 10
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/droppingFalserateUAThreshold value string
droppingFalserateUAThreshold
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/droppingFalserateUAThreshold/value value
string 10
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/minmumOSHitCount value string
minimumOSHitCount
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/minmumOSHitCount/value value string 500
```

```
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/minmumOSTonnage value string
minimumOSTonnage
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/minmumOSTonnage/value value string 10485760
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/minmumUAHitCount value string
minimumUAHitCount
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/minmumUAHitCount/value value string 500
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/minmumUATonnage value string
minimumUATonnage
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/minmumUATonnage/value value string 10485760
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/useLastSeenAsFilter value string
useLastSeenAsFilter
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TetheringIBCrea
tor/attribute/useLastSeenAsFilter/value value string true
```

Execute the following commands if you want to change the default values:

```
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TopSubscribersV
```



```

6/attribute/inputDatasets/values/TetheringIBAggregator28Days
value string TetheringIBAggregator28Days
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TopSubscribersV
6/attribute/timeout value string timeout
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TopSubscribersV
6/attribute/timeout/value value string 1380
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TopSubscribersV
6/attribute/topSubcrCount value string topSubcrCount
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TopSubscribersV
6/attribute/topSubcrCount/value value string 10000
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TopSubscribersV
6/attribute/ttllist value string ttllist
internal set modify -
/tps/process/oozie/jobs/Tethering/actions/TopSubscribersV
6/attribute/ttllist/valuevalue string 62,63,126,127

```

Execute the following commands to set dataset and job timing of the updated jobs or datasets:

```

internal set modify -
/tps/process/oozie/dataset/TopV6SubcrOS/attribute/startTime/value
value string 2016-02-15T00:00Z
internal set modify -
/tps/process/oozie/dataset/TetheringIBCreator/attribute/startTime/value
value string 2016-02-14T00:00Z
internal set modify -
/tps/process/oozie/dataset/TetheringMergeIB/attribute/startTime/value
value string 2016-02-15T00:00Z
internal set modify -

```

```
/tps/process/oozie/dataset/TetheringApnDcReport/attribute
/startTime/value value string 2016-02-15T00:00Z
internal set modify - /tps/process/oozie/dataset/atlas_
edrflow_1/attribute/startTime/value value string 2016-02-
15T00:00Z
internal set modify - /tps/process/oozie/dataset/atlas_
edrhttp_1/attribute/startTime/value value string 2016-02-
15T00:00Z
internal set modify -
/tps/process/oozie/dataset/Tethering/attribute/startTime/
value value string 2016-02-15T00:00Z
internal set modify - /tps/process/oozie/dataset/edr_
TetheringSubscribersReport/attribute/startTime/value
value string 2016-02-15T00:00Z
internal set modify -
/tps/process/oozie/jobs/TetheringApnDcReport/attribute/jo
bStart/value value string 2016-02-15T00:00Z
internal set modify -
/tps/process/oozie/jobs/Tethering/attribute/jobStart/valu
e value string 2016-02-15T00:00Z
internal set modify -
/tps/process/oozie/jobs/CoreJob/attribute/jobStart/value
value string 2016-02-15T00:00Z
internal set modify -
/tps/process/oozie/jobs/TetheringSubscribersReport/attrib
ute/jobStart/value value string 2016-02-15T00:00Z
```

Execute the following commands for the HIVE jobs:

```
internal set modify -
/tps/process/oozie/jobs/edrFlowHiveJob/attribute/jobStart
/value value string 2016-02-15T00:00Z
internal set modify -
/tps/process/oozie/jobs/edrHttpHiveJob/attribute/jobStart
/value value string 2016-02-15T00:00Z
```

```
internal set modify -
/tps/process/oozie/jobs/edrflowCleanupHive/attribute/jobS
tart/value value string 2016-02-15T00:00Z
internal set modify -
/tps/process/oozie/jobs/edrhttpCleanupHive/attribute/jobS
tart/value value string 2016-02-15T00:00Z
```

Execute the following commands to apply changes in HIVE:

```
> en
# _shell
# hive
hive> drop table edrflow;
hive> drop table edrhttp;
hive> quit;
# cli -m config
(config) # tps hive restart
```

Retain Manual Changes in IBs

Any changes that are done manually in an IB are lost during the upgrade.

Perform the following steps to retain the changes made in IBs:

1. Compare the diff between backup IB of inbox and
/opt/catalogue/atlas/IB of image.
2. If an IB is found to be overwritten or modified after the update all ib is performed, execute the following commands:

```
> en
> conf t
> _shell
sm service-info modify ps-server-1 host <<PS host>>
configuration write
write memory
```

Note: The IBs, apnGroup.map, ratidtype.map, ipSgsn.map, ipGgsn.map, and dcRegionArea.map are non-empty and contain all required entries.

3. Execute the following commands:

```
> en
# _shell
# pmx subshell aggregation_center
(aggregation_center) # update all ibs from image
(aggregation_center) # generate urlcat ib from image
(aggregation_center) # show urlcat version
(aggregation_center) # generate all ibs
(aggregation_center) # push all ibs
(aggregation_center) # push ib serializedUrlCatObj
(aggregation_center) # quit

# pmx subshell bulkstats
(bulkstats) # update all ibs from image
(bulkstats) # generate all ibs
(bulkstats) # push all ibs
(bulkstats) # quit

# pmx subshell anomaly
(anomaly) # update all ibs
```

Restart Processes

1. The gateways information is lost due to new GMS update. To retain the Gateway information, execute the following commands:

```
> en
# _shell
# cli -m config
(config)# <copy and paste the content of the file containing
backedup gateway configuration>
```

For more information about gateway configurations, see "Take a Backup of Gateway Configurations" on page 9

2. Log into Collector nodes and restart collector:

```
> en
# conf t
# pm process collector restart
```

3. Log into each Rubix node including RGE node and restart rubix process:

```
(config)# pm process rubix launch auto
(config)# wr mem
```

Execute the following commands to enable all the rubix apps on both the nodes and DPI nodes:

```
(config) # rubix modify-app atlas enable
(config) # rubix modify-app atlas modify-instance 1 enable
```

Execute the following commands on RGE nodes:

```
(config) # rubix modify-app bulkstats modify-instance 1 enable
(config) # rubix modify-app bulkstats enable
(config) # rubix modify-app reportAtlas modify-instance 1
enable
(config) # rubix modify-app reportAtlas enable
(config) # rubix modify-app rge modify-instance 1 enable
(config) # rubix modify-app rge enable
(config) # rubix modify-app ruleEngine modify-instance 1
enable
(config) # rubix modify-app ruleEngine enable
(config) # pm process rubix restart
```

4. Log into master NameNode and run all jobs:

```
> en
# _shell
# pmx subshell oozie run job all
```

Enable the Collector in the Live Mode

- Execute the following commands to enable the collector again in the live mode:

```
> en
> _shell
> cli -m config
(config)# collector modify-instance 1 modify-adaptor bulkStats
auto-bin-slide enable
(config)# collector modify-instance 1 modify-adaptor edrflow
auto-bin-slide enable
(config)# collector modify-instance 1 modify-adaptor edrhttp
auto-bin-slide enable
(config)# wr me
(config)# pm process collector restart
```