Managing WIS2 Node

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The documentation *Managing WIS2 Node* details how to manage subscriptions to WIS2 Nodes on a WIS2 Global Broker.

1. Software components

On a WIS2 Global Broker, each WIS2 Node is harversted by at least 2 dedicated docker containers:

- all containers receive messages from the source WIS2 Node
- only the "primary" container will check for duplicate messages (antiloop) and feed the WIS2 Global Broker
- the "secondary" container(s) will monitor the "primary" container and will take over in case of "primary" outage

2. WIS2 Node subscription configuration

This step is used to create the primary and secondary containers configuration.

A configuration file is needed for the each source WIS2 Node:

Example:

```
gbb@wmanage:~$ cat /home/ansadm/data/env/ca-eccc-msc.env
MQTT_SUB_BROKER=mqtts://hpfx.collab.science.gc.ca
MQTT_SUB_USERNAME=******
MQTT_SUB_PASSWORD=******
MQTT_SUB_TOPIC=origin/a/wis2/ca-eccc-msc/#
MQTT_SUB_VERIFYCERT=false
CENTRE_ID=ca-eccc-msc
MQTT_MONIT_TOPIC=monitor
MSG_CHECK_OPTION=verify
TOPIC_CHECK_OPTION=verify
GDC_URL=https://api.weather.gc.ca/collections/wis2-discovery-
metadata/items?lang=en&f=json&q=
```

Allowed keys	**Descriptions**
MQTT_SUB_BROKER=Broker_URL	WIS2Node URL broker such as mqtts://broker.example.com:8883 or wss://broker.example.com:443
MQTT_SUB_USERNAME=	
MQTT_SUB_PASSWORD=	
MQTT_SUB_TOPIC=Topic_to_sub	e.g. origin/a/wis2/fra/#.
MQTT_SUB_VERIFYCERT= true	if using SSL should the certificate by checked (prevent slef-signed certificates to work. Or not)

MQTT_PUB_BROKER=GlobalBroker_URL	Global Broker URL such as mqtts://globalbroker.site.com:8883 or wss://globalbroker.site.com:443
MQTT_PUB_USERNAME=	
MQTT_PUB_PASSWORD=	
MQTT_MONIT_TOPIC=	Topic_to_publish_on_Global_Broker
MSG_CHECK_OPTION=verify	Should messages be "verify" (just add _comment in the notification message), "discard" (bin the message if not correct), "ignore" (don't check the messages)
TOPIC_CHECK_OPTION=verify	Should topic of publication be verified against the metadata published by centreid. The list is obtained by querying the Global Discovery Catalog. Query is made every 15 minutes.
GDC_URL=	How to query the GDC ? centre-id is added at the end of the URL.
CENTRE_ID=	Name_of_Center used as label and as a key when 2 (or more) containers are running
REDIS_URL=[{"host":@IP1,"port":port1},{"host":@IP2,"port":port2},.....]	A JSON Array with all host:port instances of the redis cluster

Source doc: https://github.com/golfvert/WIS2-GlobalBroker-Redundancy

3. Add WIS2 Node subscription

The config file needs to be parsed in order to create all needed docker resources in order to be able to start WIS2 Node containers on the waloop0x nodes.

Login as ansadm:

```
ansadm@wmanage:~$ pwd
/home/ansadm
```

Create config files for the container:

```
ansadm@wmanage:~$ ./add_wis2node.sh zm-zmd
```

add_wis2node.sh has no output, but it will generate files needed to create the containers.

Here is an example of a content generated by **add_wis2node.sh**:

```
/home/ansadm/data/wis2node/zm-zmd/compose
```

```
/home/ansadm/data/wis2node/zm-zmd/zm-zmd_waloop.yml
/home/ansadm/data/wis2node/zm-zmd/zm-zmd_wmanage.yml
/home/ansadm/data/wis2node/zm-zmd/compose/docker-compose.yml
/home/ansadm/data/wis2node/zm-zmd/compose/globalbroker.env
/home/ansadm/data/wis2node/zm-zmd/compose/redis.env
/home/ansadm/data/wis2node/zm-zmd/compose/zm-zmd.env
```

It is then possible to deploy the WIS2 Node containers with **deploy-wis2node.yml** which will:

- randomnly find 2 suitable wloop0x nodes to run the containers (one for primary, the other for secondary)
- perform cleanup to make sure old containers for the same WIS2 Node do not run on the other nodes

Execution example:

```
ansadm@wmanage:~$ ansible-playbook deploy-wis2node.yml -e "wis2node=zm-zmd"

PLAY [localhost]
*********************************************************************************************
*****************************************************

TASK [Select which antiloop hosts]
*********************************************************************************************
***********************************
changed: [localhost] => (item=waloop03)
changed: [localhost] => (item=waloop02)

PLAY [antiloop]
*********************************************************************************************
*********************************************************

TASK [Gathering Facts]
*********************************************************************************************
***********************************************
ok: [waloop03]
ok: [waloop02]
ok: [waloop01]

TASK [Check directory exists]
*********************************************************************************************
*****************************************
ok: [waloop01]
ok: [waloop02]
ok: [waloop03]

TASK [Remove old container]
*********************************************************************************************
*****************************************
```

```
skipping: [waloop01]
changed: [waloop03]
changed: [waloop02]

TASK [Purge if exists]
*********************************************************************************************
*********************************************
skipping: [waloop01]
changed: [waloop02]
changed: [waloop03]

PLAY [select]
*********************************************************************************************
*****************************************************

TASK [Add traefik config]
*********************************************************************************************
*********************************************
ok: [waloop02]
ok: [waloop03]

TASK [Create directory]
*********************************************************************************************
*********************************************
changed: [waloop03]
changed: [waloop02]

TASK [Copy host env file]
*********************************************************************************************
*********************************************
changed: [waloop02]
changed: [waloop03]

TASK [Copy required files]
*********************************************************************************************
*********************************************
changed: [waloop02]
changed: [waloop03]

TASK [Deploy new container]
*********************************************************************************************
*********************************************
changed: [waloop03]
changed: [waloop02]

PLAY [manage]
*********************************************************************************************
*****************************************************

TASK [Gathering Facts]
*********************************************************************************************
```

```
*********************************************
ok: [localhost]

TASK [Update prometheus config]
*****************************************************************************************
************************************
ok: [localhost]

TASK [Update traefik config]
*****************************************************************************************
****************************************
ok: [localhost]

PLAY RECAP
*****************************************************************************************
************************************************************
localhost                  : ok=4    changed=1    unreachable=0    failed=0
skipped=0    rescued=0    ignored=0
waloop01                   : ok=2    changed=0    unreachable=0    failed=0
skipped=2    rescued=0    ignored=0
waloop02                   : ok=9    changed=6    unreachable=0    failed=0
skipped=0    rescued=0    ignored=0
waloop03                   : ok=9    changed=6    unreachable=0    failed=0
skipped=0    rescued=0    ignored=0

ansadm@wmanage:~$
```

4. Delete a WIS2 Node

In order to remove the containers from the waloop0x nodes:

```
ansadm@wmanage:~$ ansible-playbook delete-wis2node.yml -e "wis2node=zm-zmd"



PLAY [antiloop]
*****************************************************************************************
*****************************************************

TASK [Gathering Facts]
*****************************************************************************************
************************************************
ok: [waloop03]
ok: [waloop02]
ok: [waloop01]

TASK [Check directory exists]
*****************************************************************************************
****************************************
```

```
ok: [waloop02]
ok: [waloop01]
ok: [waloop03]

TASK [Remove old container]
*********************************************************************************************
*****************************************
skipping: [waloop01]
skipping: [waloop02]
skipping: [waloop03]

TASK [Purge if exists]
*********************************************************************************************
***********************************************
skipping: [waloop01]
skipping: [waloop02]
skipping: [waloop03]

PLAY [manage]
*********************************************************************************************
*****************************************************

TASK [Gathering Facts]
*********************************************************************************************
***********************************************
ok: [localhost]

TASK [Update prometheus config]
*********************************************************************************************
***************************************
ok: [localhost]

TASK [Check if dynamic traefik file exists]
*********************************************************************************************
****************************
ok: [localhost]

TASK [Purge if exists]
*********************************************************************************************
***********************************************
changed: [localhost]

PLAY RECAP
*********************************************************************************************
*************************************************************
localhost                  : ok=4    changed=1    unreachable=0    failed=0
skipped=0    rescued=0    ignored=0
waloop01                   : ok=2    changed=0    unreachable=0    failed=0
skipped=2    rescued=0    ignored=0
waloop02                   : ok=2    changed=0    unreachable=0    failed=0
skipped=2    rescued=0    ignored=0
```

```
waloop03                   : ok=2    changed=0    unreachable=0    failed=0
skipped=2    rescued=0    ignored=0
```

5. Upgrade a WIS2 Node

Using **update-wis2node.yml**

Be careful when upgrading from container 1.x to 2.x.