

Open Baton

1) L'installation d'open baton avec Docker

<http://openbaton.github.io/documentation/nfvo-installation-docker/>

OpenSCaaS: an open service chain as a service platform toward the integration of SDN and NFV: <https://ieeexplore.ieee.org/abstract/document/7113222>

Installer open baton en utilisant Docker. On doit avoir une version de Docker (≥ 18.03) et une de Docker Compose (≥ 1.20).

```
sudo systemctl start docker
sudo systemctl enable docker
```

Installer docker-compose.

```
sudo curl -L "https://github.com/docker/compose/releases/download/1.22.0/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compose
```

```
sudo chmod +x /usr/local/bin/docker-compose
docker-compose --version
```

```
sudo docker-compose up
```

```
sudo curl -o docker-compose.yml
https://raw.githubusercontent.com/openbaton/bootstrap/6.0.0/docker-compose.yml | env
HOST_IP=$YOUR_LOCAL_IP docker-compose up -d
```

```
sudo curl -o docker-compose.yml
https://raw.githubusercontent.com/openbaton/bootstrap/master/docker-compose.yml | env
HOST_IP=$YOUR_LOCAL_IP docker-compose up -d
```

Se connecter avec le navigateur:

<http://localhost:8080>

Utilisateur: admin

Mot de passe: openbaton

Installer pip.

```
sudo apt-get install python-pip
```

Installer le client Open baton.

```
sudo pip install openbaton-cli
```

2) La configuration d'open baton

On peut changer la configuration par défaut. Le fichier de configuration NFVO se trouve à l'adresse suivante: `/etc/openbaton/openbaton-nfvo.properties`

Changer les propriétés suivantes du fichier `/etc/openbaton/openbaton.properties`:

```
nfvo.rabbit.brokerIp = localhost
en
nfvo.rabbit.brokerIp = <the rabbitmq broker ip>
```

Ajouter des paramètres additionnels rabbitMQ exigés par le NFVO.

```
nfvo.rabbit.management.port=15672
# Set the queues to be autodeleted after the shut down
nfvo.rabbitmq.autodelete=true
nfvo.rabbitmq.durable=true
nfvo.rabbitmq.exclusive=false
```

Paramètres en relation avec le runtime avec NFVO behaviour.

```
# nfvo behaviour
nfvo.delete.all-status = true
# if true, after deleting a NSR, the nfvo will wait for "nfvo.delete.vnfr.wait.timeout" after that
# timeout the VMs and VNFR will be deleted anyway from the NFVO
nfvo.delete.vnfr.wait.timeout=20
nfvo.delete.vnfr.wait=true
```

```
nfvo.history.clear=false
nfvo.history.level=1
nfvo.history.max-entities=250
```

Changer le mot de passe.

```
nfvo.security.admin.password=openbaton
```

Paramètres en relation avec le système monitoring.

```
nfvo.monitoring.ip = the Zabbix server ip
```

Paramètres en relation avec le marketplace.

```
nfvo.marketplace.ip=marketplace.openbaton.org
nfvo.marketplace.port=8080
```

Paramètres en relation avec le plugins et drivers.

```
# Setting the number of plugin active consumers
nfvo.plugin.active.consumers=10
nfvo.plugin.install=true
# directory for the vim driver plugins
nfvo.plugin.installation-dir=./plugins
nfvo.plugin.log.path=./plugin-logs
nfvo.plugin.wait=true
# timeout for plugin operations
nfvo.plugin.timeout=300000
```

Paramètres en relation avec le quota management.

```
nfvo.quota.check=false
nfvo.quota.check.failOnException = true
```

Paramètres additionnels pour le NFVO et VNFM tuning

```
# Execute the start event sequentially and in order based on the VNFDependencies. This
implies the NSD not to have cycling dependencies
nfvo.start.ordered=false
# It can be used for enabling/disabling an active check to the VIM authentication URL
nfvo.vim.active.check=true
# Allow infinite quotas during the GRANT_OPERATION
nfvo.vim.drivers.allowInfiniteQuota=false
nfvo.vim.delete.check.vnfr=true
```

Ces Paramètres permettent de changer le pool de configuration.

```
# Thread pool executor configuration
# for info see http://docs.spring.io/spring/docs/current/javadoc-api/org/springframework/scheduling/concurrent/ThreadPoolTaskExecutor.html
nfvo.vmanager.executor.corepoolsize = 20
nfvo.vmanager.executor.maxpoolsize = 30
nfvo.vmanager.executor.queuecapacity = 500
nfvo.vmanager.executor.keepalive = 30
# if true, deleting the nsd will remove also its vnfd
nfvo.vnfd.cascade.delete=false
# if true, deleting the vnfd will remove also its vnfpkg
vnfd.vnfp.cascade.delete=true
```

Activer SSL. Par défaut SSL est désactivé. Commenter ces Paramètres si vous voulez les activer.

```
#server.port=8443
#server.ssl.enabled=true
#server.ssl.key-store=/etc/openbaton/keystore.p12
#server.ssl.key-store-password=password
#server.ssl.keyAlias=tomcat
#server.ssl.keyStoreType=PKCS12
#nfvo.https=false
```

Modifier les propriétés de logging.

Ajouter ou supprimer des fonctionnalités spécifiques.

Par exemple, vous pouvez décider de changer les niveaux de logging (TRACE, DEBUG, INFO, WARN, and ERROR) and mechanisms:

```
#####
##### Logging properties #####
#####
```

```
logging.level.org.springframework=WARN
logging.level.org.hibernate=WARN
logging.level.org.apache=WARN
```

```
# Level for loggers on classes inside the root package "org.project.openbaton" (and its sub-packages)
```

```
logging.level.org.openbaton=INFO
```

```
# Direct log to a log file
logging.file=/var/log/openbaton.log
```

Modifier les propriétés de DB.

Selon le mode d'installation que vous avez sélectionné, il se peut que vous ayez une base de données in-memory. Afin de reconfigurer le NFVO pour utiliser une base de données persistante, comme MySQL, vous devez modifier les propriétés comme indiqué ci-dessous:

```
#####
##### DB properties #####
#####

spring.datasource.username=admin
spring.datasource.password=changeme

# JDBC configurations' values for HSQL:
#   jdbc:hsqldb:file:/tmp/openbaton/openbaton.hsqldb
#   org.hsqldb.jdbc.JDBC.Driver
#   org.hibernate.dialect.HSQLDialect
# JDBC configurations' values for MYSQL:
#   jdbc:mysql://localhost:3306/openbaton
#   org.mariadb.jdbc.Driver
#   org.hibernate.dialect.MySQLDialect
#
# Active configurations by default MySQL:
spring.datasource.url=jdbc:mysql://localhost:3306/openbaton
spring.datasource.driver-class-name=org.mariadb.jdbc.Driver
spring.jpa.database-platform=org.hibernate.dialect.MySQLDialect
spring.jpa.show-sql=false
# ddl-auto available values: create-drop, update
spring.jpa.hibernate.ddl-auto=update

# MYSQL configuration (enable it in order to avoid timeout exceptions)
#spring.datasource.validationQuery=SELECT 1
#spring.datasource.testOnBorrow=true
```

Modifier les paramètres RabbitMQ. Ce sont des paramètres supplémentaires sur la configuration de Rabbit MQ:

```
#####
##### RabbitMQ #####
#####

# Comma-separated list of addresses to which the client should connect to.
#spring.rabbitmq.addresses=${nfvo.rabbit.brokerIp}
# Create an AmqpAdmin bean.
spring.rabbitmq.dynamic=true
# RabbitMQ host.
```

```
spring.rabbitmq.host=${nfvo.rabbit.brokerIp}
# Acknowledge mode of container.
#spring.rabbitmq.listener.acknowledge-mode=
# Start the container automatically on startup.
#spring.rabbitmq.listener.auto-startup=true
# Minimum number of consumers.
spring.rabbitmq.listener.concurrency=5
# Maximum number of consumers.
spring.rabbitmq.listener.max-concurrency=30
# Number of messages to be handled in a single request. It should be greater than or equal to
the transaction size (if used).
#spring.rabbitmq.listener.prefetch=
# Number of messages to be processed in a transaction. For best results it should be less than
or equal to the prefetch count.
#spring.rabbitmq.listener.transaction-size=
# Login user to authenticate to the broker.
spring.rabbitmq.username=admin
# Login to authenticate against the broker.
spring.rabbitmq.password=openbaton
# RabbitMQ managementPort.
spring.rabbitmq.port=5672
# Requested heartbeat timeout, in seconds; zero for none.
spring.rabbitmq.requested-heartbeat=60
# Enable SSL support.
#spring.rabbitmq.ssl.enabled=false
# Path to the key store that holds the SSL certificate.
#spring.rabbitmq.ssl.key-store=
# Password used to access the key store.
#spring.rabbitmq.ssl.key-store-password=
# Trust store that holds SSL certificates.
#spring.rabbitmq.ssl.trust-store=
# Password used to access the trust store.
#spring.rabbitmq.ssl.trust-store-password=
# Virtual host to use when connecting to the broker.
#spring.rabbitmq.virtual-host=
```

3) Les cas d'utilisation

<https://github.com/mah88/sfc-orchestrator>

<https://github.com/mah88/sfc-orchestrator/blob/master/README.md>

<https://github.com/openbaton/dummy-vnfm-amqp>

