# [Clustering API Manager 2.0.0](https://docs.wso2.com/display/CLUSTER44x/Clustering+API+Manager+2.0.0)

Tham khảo:

# https://docs.wso2.com/display/CLUSTER44x/Clustering+API+Manager+2.0.0

**I. Installing and configuring the databases**

1. Install MYSQL 5.7

2. Create Mysql Databases (Service use many database.Each Component use DB for it)

WSO2\_CARBON\_DB\_1

WSO2\_CARBON\_DB\_2

WSO2AM\_DB

WSO2AM\_STATS\_DB

WSO2REG\_DB

WSO2UM\_DB

WSO2\_MB\_STORE\_DB

WSO2\_METRICS\_DB

* Tạo user “**wso2**” trên 2 server 10.0.0.1 – 10.0.0.2 và phân quyền ALL cho user này trên các Database vừa tạo  grant all on [DB\_Name].\* to 'wso2'@'10.0.0.2' identified by "P@ssWSo2API"

3. Download source từ (Version 2.0.0 Binary)

- download source về Local rồi FTP lên server : <http://wso2.com/more-downloads/api-manager/>

- http://wso2.com/products/previous-products?a=aHR0cCUzQSUyRiUyRnByb2R1Y3QtZGlzdC53c28yLmNvbSUyRnByb2R1Y3RzJTJGYXBpLW1hbmFnZXIlMkYyLjAuMCUyRndzbzJhbS0yLjAuMC56aXA=&p=YXBpbV8yLjAuMF9iaW5hcnk=

- Giải nén và move source vào /opt/

4. Tạo user “wso2” trên 2 server 10.0.0.1-2 để process service bằng user này.

5. Import source

-EX: mysql --verbose -uroot -p WSO2AM\_DB <APIM\_HOME>/dbscripts apimgt/mysql5.7.sql

use WSO2AM\_DB

source <APIM\_HOME>/dbscripts/apimgt/mysql5.7.sql;

use WSO2UM\_DB

source <APIM\_HOME>/dbscripts/mysql5.7.sql;

use WSO2REG\_DB

source <APIM\_HOME>/dbscripts/mysql5.7.sql;

use WSO2\_MB\_STORE\_DB

source <APIM\_HOME>/dbscripts/mb-store/mysql-mb.sql;

6. **Config datasource**

<APIM\_HOME>/repository/conf/datasources/master-datasources.xml <File dinh kem>

**Notes:** Trên 2 server chạy WSO2 load balancing nên sẽ chạy đồng thời cùng lúc.Khi đó config trỏ tới 2 DB cùng 1 server.Database WSO2AM\_CARBON\_1\_DB và WSO2AM\_CARBON\_2\_DB được config phân bổ trên lần lượt 2 server.Những config khác giống nhau.

======================

<datasource>

<name>WSO2\_CARBON\_DB</name>

<description>The datasource used for registry and user manager</description>

<jndiConfig>

<name>jdbc/WSO2CarbonDB</name>

</jndiConfig>

<definition type="RDBMS">

<configuration>

<url>jdbc:mysql://192.168.0.1:3306/WSO2AM\_CARBON\_1\_DB?autoReconnect=true</url>

<username>wso2am2</username>

<password>xxx</password>

<defaultAutoCommit>false</defaultAutoCommit>

<driverClassName>com.mysql.jdbc.Driver</driverClassName>

<maxActive>50</maxActive>

<maxWait>60000</maxWait>

<testOnBorrow>true</testOnBorrow>

<validationQuery>SELECT 1</validationQuery>

<validationInterval>30000</validationInterval>

</configuration>

</definition>

</datasource>

<datasource>

<name>WSO2AM\_DB</name>

<description>The datasource used for the API Manager database</description>

<jndiConfig>

<name>jdbc/WSO2AM\_DB</name>

</jndiConfig>

<definition type="RDBMS">

<configuration>

<url>jdbc:mysql://192.168.0.1:3306/WSO2AM2\_AM\_DB?autoReconnect=true</url>

<username>wso2am2</username>

<password>xxx</password>

<defaultAutoCommit>false</defaultAutoCommit>

<driverClassName>com.mysql.jdbc.Driver</driverClassName>

<maxActive>50</maxActive>

<maxWait>60000</maxWait>

<testOnBorrow>true</testOnBorrow>

<validationQuery>SELECT 1</validationQuery>

<validationInterval>30000</validationInterval>

</configuration>

</definition>

</datasource>

<datasource>

<name>WSO2UM\_DB</name>

<description>The datasource used by user manager</description>

<jndiConfig>

<name>jdbc/WSO2UM\_DB</name>

</jndiConfig>

<definition type="RDBMS">

<configuration>

<url>jdbc:mysql://192.168.0.1:3306/WSO2AM2\_USER\_DB?autoReconnect=true</url>

<username>wso2am2</username>

<password>xxx</password>

<driverClassName>com.mysql.jdbc.Driver</driverClassName>

<maxActive>50</maxActive>

<maxWait>60000</maxWait>

<testOnBorrow>true</testOnBorrow>

<validationQuery>SELECT 1</validationQuery>

<validationInterval>30000</validationInterval>

</configuration>

</definition>

</datasource>

<datasource>

<name>WSO2REG\_DB</name>

<description>The datasource used by the registry</description>

<jndiConfig>

<name>jdbc/WSO2REG\_DB</name>

</jndiConfig>

<definition type="RDBMS">

<configuration>

<url>jdbc:mysql://192.168.0.1:3306/WSO2AM2\_REGISTRY\_DB?autoReconnect=true</url>

<username>wso2am2</username>

<password>xxx</password>

<driverClassName>com.mysql.jdbc.Driver</driverClassName>

<maxActive>50</maxActive>

<maxWait>60000</maxWait>

<testOnBorrow>true</testOnBorrow>

<validationQuery>SELECT 1</validationQuery>

<validationInterval>30000</validationInterval>

</configuration>

</definition>

</datasource>

<datasource>

<name>WSO2AM\_STATS\_DB</name>

<description>The datasource used for getting statistics to API Manager</description>

<jndiConfig>

<name>jdbc/WSO2AM\_STATS\_DB</name>

</jndiConfig>

<definition type="RDBMS">

<configuration>

<url>jdbc:mysql://192.168.0.1:3306/WSO2AM2\_STATS\_DB?autoReconnect=true</url>

<username>wso2am2</username>

<password>xxx</password>

<defaultAutoCommit>false</defaultAutoCommit>

<driverClassName>com.mysql.jdbc.Driver</driverClassName>

<maxActive>50</maxActive>

<maxWait>60000</maxWait>

<testOnBorrow>true</testOnBorrow>

<validationQuery>SELECT 1</validationQuery>

<validationInterval>30000</validationInterval>

</configuration>

</definition>

</datasource>

<datasource>

<name>WSO2\_MB\_STORE\_DB</name>

<description>The datasource used for message broker database</description>

<jndiConfig>

<name>WSO2MBStoreDB</name>

</jndiConfig>

<definition type="RDBMS">

<configuration>

<url>jdbc:mysql://192.168.0.1:3306/WSO2AM2\_MB\_STORE\_DB?autoReconnect=true</url>

<username>wso2am2</username>

<password>xxx</password>

<defaultAutoCommit>false</defaultAutoCommit>

<driverClassName>com.mysql.jdbc.Driver</driverClassName>

<maxActive>50</maxActive>

<maxWait>60000</maxWait>

<testOnBorrow>true</testOnBorrow>

<validationQuery>SELECT 1</validationQuery>

<validationInterval>30000</validationInterval>

</configuration>

</definition>

</datasource>

 Remove từ đoạn <!-- For an explanation of the properties, see: http://people.apache.org/~fhanik/jdbc-pool/jdbc-pool.html --> …… </datasource-->

**7. Registry mounting config (Thêm vào cuối file và edit thông tin cacheID)**

<APIM\_HOME>/repository/conf/registry.xml

<dbConfig name="govregistry">

<dataSource>jdbc/WSO2REG\_DB</dataSource>

</dbConfig>

<remoteInstance url="https://publisher.apim-wso2.com">

<id>gov</id>

<cacheId>user@jdbc:mysql://regdb.mysql-wso2.com:3306/regdb</cacheId>

<dbConfig>govregistry</dbConfig>

<readOnly>false</readOnly>

<enableCache>true</enableCache>

<registryRoot>/</registryRoot>

</remoteInstance>

<mount path="/\_system/governance" overwrite="true">

<instanceId>gov</instanceId>

<targetPath>/\_system/governance</targetPath>

</mount>

<mount path="/\_system/config" overwrite="true">

<instanceId>gov</instanceId>

<targetPath>/\_system/config</targetPath>

</mount>

**II. Configuring the connections among the components**

1. Change SSL Cert - wso2carbon.jks (file chứa Key SSL)

* Copy file “wso2carbon.jks” trên server 172.16.0.1  /opt/wso2am-2.0.0/repository/resources/security/wso2carbon.jks (Key store)
* **<APIM\_HOME>/repository/conf/carbon.xml**

<KeyStore>

<!-- Keystore file location-->

<Location>${carbon.home}/repository/resources/security/wso2carbon.jks</Location>

<!-- Keystore type (JKS/PKCS12 etc.)-->

<Type>JKS</Type>

<!-- Keystore password-->

<Password>xxx</Password>

<!-- Private Key alias-->

<KeyAlias>api-domainv2.vng.com.vn</KeyAlias>

<!-- Private Key password-->

<KeyPassword>xxx</KeyPassword>

</KeyStore>

**Note: Nếu trên cùng 1 server có 2 service WSO2 cùng chạy thì edit thông tin bên dưới lại để cho ko đụng port.Offset =14 thì các port lệch nhau 14 đơn vị**

<Offset>14</Offset>

* **<APIM\_HOME>/repository/conf/axis2/axis2.xml**
  + <parameter name="SynapseConfig.ServerName" locked="false"> api-domainv2-s1.vng.com.vn</parameter>
  + Update thông tin General Key Token:

<transportSender name="https" class="org.apache.synapse.transport.passthru.PassThroughHttpSSLSender">

<parameter name="non-blocking" locked="false">true</parameter>

<parameter name="keystore" locked="false">

<KeyStore>

<Location>repository/resources/security/wso2carbon.jks</Location>

<Type>JKS</Type>

<Password>xxx</Password>

<KeyPassword>xxx</KeyPassword>

</KeyStore>

</parameter>

<parameter name="truststore" locked="false">

<TrustStore>

<Location>repository/resources/security/client-truststore.jks</Location>

<Type>JKS</Type>

<Password>xxx</Password>

</TrustStore>

</parameter>

<parameter name="HostnameVerifier">AllowAll</parameter>

<!--<parameter name="HostnameVerifier">DefaultAndLocalhost</parameter>-->

<!--supports Strict|AllowAll|DefaultAndLocalhost or the default if none specified -->

</transportSender>

1. **Change IP -> domain in** <APIM\_HOME>/repository/conf/api-manager.xml to pass SSL  Sửa những option có keyword bên dưới có chứa “localhost” thì thay bằng “api-domainv2-s1.vng.com.vn”
   * <AuthManager>
   * <APIGateway>
   * <APIKeyValidator>
   * <ThriftServerHost>api-domainv2-s1.vng.com.vn</ThriftServerHost>
   * <RevokeAPIURL>[https://api-domainv2-s1.vng.com.vn:${https.nio.port}/revoke</RevokeAPIURL](https://api-icloudv2-s1.vng.com.vn:$%7bhttps.nio.port%7d/revoke%3c/RevokeAPIURL)>
   * <APIStore>
   * **APIPublisher dùng domain chính của GUI để user có thể truy cập GUI và link giữa các page**

<APIPublisher>

<DisplayURL>false</DisplayURL>

<URL>[https://api-domainv2.vng.com.vn:${mgt.transport.https.port}/publisher</URL](https://api-icloudv2.vng.com.vn:$%7bmgt.transport.https.port%7d/publisher%3c/URL)>

* + <ThrottlingConfigurations>

<PolicyDeployer>

**Notes**: Update domain từ “api-domainv2-s1.vng.com.vn” thành “api-domainv2-s2.vng.com.vn” trên server 2

**III. Configuring member cluster domain**

Open the <AM\_HOME>/repository/conf/axis2/axis2.xml

1. Set the 'enable' attribute of the <clustering> element to true.

**<clustering class="org.wso2.carbon.core.clustering.hazelcast.HazelcastClusteringAgent" enable="true">**

2. Change the 'membershipScheme' parameter to 'wka'. mode discovery

<parameter name="membershipScheme">wka</parameter>

3. Provide a domain for the cluster.

<parameter name="domain">wso2.domain</parameter>

4. 'localMemberHost' and 'localMemberPort' parameters.

<parameter name="localMemberHost">10.0.0.1</parameter> (server 2 : 10.0.0.2)

<parameter name="localMemberPort">4000</parameter>

5. Specify well known Member port and host.

<members>

<member>

<hostName>10.0.0.2</hostName> (server1: 10.0.0.1)

<port>4000</port>

</member>

</members>

5. Tiến hành Add host

10.0.0.1 api-domainv2-s1.vng.com.vn

**IV. Init WSO2 AM**

* **<AM\_HOME>/bin/wso2server.sh –Dsetup**

**(Option “-Dsetup” chỉ chạy 1 lần trên 1 server để khởi tạo table thêm cho wso2  DB đã replicate nên ko cần chạy trên server2)**

(<https://docs.wso2.com/display/CLUSTER44x/Clustering+API+Manager+2.0.0>)

- Set config JAVA\_HOME cho script “<AM\_HOME>/bin/wso2server.sh”

+ Edit file “**<AM\_HOME>/bin/wso2server.sh** “ thêm

\* export JAVA\_HOME=/usr/lib/jvm/jre-1.8.0-openjdk.x86\_64

\* export JVM\_MEM\_OPTS="-Xms2048m -Xmx4096m"

- **Download thư viện Java**: cd /opt/wso2am-2.0.0/repository/components/lib/ && wget central.maven.org/maven2/mysql/mysql-connector-java/5.1.40/mysql-connector-java-5.1.40.jar

- Chown –R wso2.wso2 /opt/wso2am-2.0.0

- **Start WSO2: cd /opt/wso2am-2.0.0/bin && ./wso2server.sh –Dsetup**

- Issue ko tạo được Time global  access vào DB  excute command:

+ Mỗi lần chay start wso2server thì cần phài Drop Index do duplicate : (WSO2\_CARBON\_DB\_1)

\* SHOW INDEX FROM REG\_LOG;

\* DROP INDEX REG\_PATH\_IND\_BY\_PATH\_PARENT\_ID ON REG\_PATH;

\* DROP INDEX REG\_LOG\_IND\_BY\_REG\_LOGTIME ON REG\_LOG;

+ SET @@global.sql\_mode = 'ONLY\_FULL\_GROUP\_BY,STRICT\_TRANS\_TABLES,NO\_ZERO\_IN\_DATE,ERROR\_FOR\_DIVISION\_BY\_ZERO,NO\_AUTO\_CREATE\_USER,NO\_ENGINE\_SUBSTITUTION';

+ Sau khi SET xong thì trả lại DATE :

SET @@global.sql\_mode = 'ONLY\_FULL\_GROUP\_BY,STRICT\_TRANS\_TABLES,NO\_ZERO\_IN\_DATE, NO\_ZERO\_DATE,ERROR\_FOR\_DIVISION\_BY\_ZERO,NO\_AUTO\_CREATE\_USER,NO\_ENGINE\_SUBSTITUTION';

- **Setup Java version 1.8**

yum install java-1.8.0-openjdk.x86\_64 java-1.8.0-openjdk-devel.x86\_64 java-1.8.0-openjdk-headless.x86\_64 yum install java-1.8.0-openjdk.x86\_64 java-1.8.0-openjdk-devel.x86\_64 java-1.8.0-openjdk-headless.x86\_64

- **Note:** Khi start lần đầu thì dùng Root permission để start “**cd /opt/wso2am-2.0.0/bin && ./wso2server.sh” để cho java có quyền tạo thư mục chứ PID của JAVA trong “/etc/.java/.systemPrefs/” .Sau khi start thành công thì: stop process (/etc/init.d/wso2 stop )  chown –R wso2.wso2 /etc/.java/.systemPrefs/  chmod 775 /etc/.java/.systemPrefs/  su – wso2  /etc/init.d/wso2 start**

**V. Config SSH Key for 2 server để connect Master – MemberShip**

* Su – wso2
* Ssh-keygen (ko dùng passphase)
* Vim .ssh/authorized\_keys (paste Key public của server cần ssh tới)
* Chmod 644 .ssh/authorized\_keys
* Check ssh connection

**VI. Config nginx to load balancing**

- /etc/nginx/conf.d/ui\_api\_icloudv2.vng.com.vn.conf

- /etc/nginx/conf.d/gateway\_api\_NewFarm.vng.com.vn.conf

- /etc/nginx/conf.d/gateway\_api\_QTSC.vng.com.vn.conf

- Config Gateway

upstream gateway.cluster.wso2am {

server <host1>:8247;

server <host2>:8247;

}

server {

listen 8443;

server\_name gateway.wso2am.vng.com.vn;

ssl on;

ssl\_certificate /etc/nginx/ssl/api\_sdk.vng.com.vn/api\_sdk.vng.com.vn.pem;

ssl\_certificate\_key /etc/nginx/ssl/api\_sdk.vng.com.vn/api\_sdk.vng.com.vn.key;

location / {

proxy\_set\_header X-Forwarded-Host $host;

proxy\_set\_header X-Forwarded-Server $host;

proxy\_set\_header X-Forwarded-For $proxy\_add\_x\_forwarded\_for;

proxy\_set\_header Host $http\_host;

proxy\_set\_header referer $remote\_addr;

proxy\_read\_timeout 5m;

proxy\_send\_timeout 5m;

proxy\_pass https://gateway.cluster.wso2am/;

}

error\_log /var/log/nginx/gateway.wso2am.log ;

access\_log /var/log/nginx/gateway.wso2am.log;

}

- Config UI

upstream ui.cluster.wso2am {

server <host1>:9443;

server <host2>:9443;

ip\_hash;

}

server {

listen 9443;

server\_name ui.wso2am.vng.com.vn;

ssl on;

ssl\_certificate /etc/nginx/ssl/api\_sdk.vng.com.vn/api\_sdk.vng.com.vn.pem;

ssl\_certificate\_key /etc/nginx/ssl/api\_sdk.vng.com.vn/api\_sdk.vng.com.vn.key;

location / {

proxy\_set\_header X-Forwarded-Host $host;

proxy\_set\_header X-Forwarded-Server $host;

proxy\_set\_header X-Forwarded-For $proxy\_add\_x\_forwarded\_for;

proxy\_set\_header Host $http\_host;

proxy\_read\_timeout 5m;

proxy\_send\_timeout 5m;

proxy\_pass https://172.16.0.2:9457/;

}

error\_log /var/log/nginx/ui.wso2am.log ;

access\_log /var/log/nginx/ui.wso2am.log;

}

**VII. Turning server wso2**

* Touch /etc/security/limits.d/wso2.conf
* Vim /etc/security/limits.d/wso2.conf 

wso2 soft nproc 32000

wso2 hard nproc 32000

wso2 soft nofile 64000

wso2 hard nofile 64000

**VIII. Setup và config analysis**

* + - 1. **Download :** <https://docs.wso2.com/display/AM200/Configuring+APIM+Analytics>

Click download “**DOWNLOAD ANALYTICS”**

* + - 1. **Setup :**
* Edit file : /opt/wso2am-analytics-2.0.0/repository/conf/datasources/stats-datasources.xml
* Thêm config bên dưới vào cuối file config bên dưới.

<datasource>

<name>WSO2AM\_STATS\_DB</name>

<description>The datasource used for getting statistics to API Manager</description>

<jndiConfig>

<name>jdbc/WSO2AM\_STATS\_DB</name>

</jndiConfig>

<definition type="RDBMS">

<configuration>

<url>jdbc:mysql://10.0.0.5:3306/WSO2AM\_STATS\_DB?autoReconnect=true</url>

<username>wso2</username>

<password>xxx</password>

<defaultAutoCommit>false</defaultAutoCommit>

<driverClassName>com.mysql.jdbc.Driver</driverClassName>

<maxActive>50</maxActive>

<maxWait>60000</maxWait>

<testOnBorrow>true</testOnBorrow>

<validationQuery>SELECT 1</validationQuery>

<validationInterval>30000</validationInterval>

</configuration>

</definition>

</datasource>

1. **Config send log về report WSO2\_Analytics**

* **Thực hiện config trên source “/opt/wso2am-2.0.0/” của WSO2**
* **Edit file** “/opt/wso2am-2.0.0/repository/conf/api-manager.xml”
  + <Analytics>

<!-- Enable Analytics for API Manager -->

<Enabled>true</Enabled>

* + <DASServerURL>{tcp://10.0.0.2:7612}</DASServerURL>
  + <DASRestApiURL>[https://10.0.0.2:9444</DASRestApiURL](https://10.10.16.4:9444%3c/DASRestApiURL)>
* **Edit file** “/opt/wso2am-2.0.0/repository/conf/ log4j.properties”
  + # LOG\_APPENDER and the CONSOLE\_APPENDER

log4j.rootLogger=ERROR, CARBON\_CONSOLE, CARBON\_LOGFILE, CARBON\_MEMORY, CARBON\_SYS\_LOG, ERROR\_LOGFILE, DAS\_AGENT

* + # DAS\_AGENT is set to be a Custom Log Appender.

log4j.appender.DAS\_AGENT=org.wso2.carbon.analytics.shared.data.agents.log4j.appender.LogEventAppender

# DAS\_AGENT uses PatternLayout.

log4j.appender.DAS\_AGENT.layout=org.wso2.carbon.analytics.shared.data.agents.log4j.util.TenantAwarePatternLayout

log4j.appender.DAS\_AGENT.columnList=%D,%S,%A,%d,%c,%p,%m,%H,%I,%Stacktrace

log4j.appender.DAS\_AGENT.userName=admin

log4j.appender.DAS\_AGENT.password=xxx

log4j.appender.DAS\_AGENT.url=tcp://10.0.0.2:7612

log4j.appender.DAS\_AGENT.maxTolerableConsecutiveFailure=5

log4j.appender.DAS\_AGENT.streamDef=loganalyzer:1.0.0

log4j.logger.trace.messages=TRACE,CARBON\_TRACE\_LOGFILE

* **Edit file**: “/opt/wso2am-2.0.0/repository/conf/datasources/master-datasources.xml”

Datasource này đã được thêm vào trong bước config Datasource trên.(Nếu chưa có thì thêm vào)

<datasource>

<name>WSO2AM\_STATS\_DB</name>

<description>The datasource used for getting statistics to API Manager</description>

<jndiConfig>

<name>jdbc/WSO2AM\_STATS\_DB</name>

</jndiConfig>

<definition type="RDBMS">

<configuration>

<url>jdbc:mysql://10.0.0.5:3306/WSO2AM\_STATS\_DB?autoReconnect=true</url>

<username>wso2</username>

<password>xxx</password>

<defaultAutoCommit>false</defaultAutoCommit>

<driverClassName>com.mysql.jdbc.Driver</driverClassName>

<maxActive>50</maxActive>

<maxWait>60000</maxWait>

<testOnBorrow>true</testOnBorrow>

<validationQuery>SELECT 1</validationQuery>

<validationInterval>30000</validationInterval>

</configuration>

</definition>

</datasource>

1. **Start WSO2\_analytics**
   1. **Config analytics**
   * **Edit file** “/opt/wso2am-analytics-2.0.0/repository/conf/datasources/stats-datasources.xml**”**

<datasource>

<name>WSO2AM\_STATS\_DB</name>

<description>The datasource used for getting statistics to API Manager</description>

<jndiConfig>

<name>jdbc/WSO2AM\_STATS\_DB</name>

</jndiConfig>

<definition type="RDBMS">

<configuration>

<url>jdbc:mysql://10.0.0.5:3306/WSO2AM\_STATS\_DB?autoReconnect=true</url>

<username>wso2</username>

<password>xxx</password>

<defaultAutoCommit>false</defaultAutoCommit>

<driverClassName>com.mysql.jdbc.Driver</driverClassName>

<maxActive>50</maxActive>

<maxWait>60000</maxWait>

<testOnBorrow>true</testOnBorrow>

<validationQuery>SELECT 1</validationQuery>

<validationInterval>30000</validationInterval>

</configuration>

</definition>

</datasource>

* 1. **Start wso2\_analytics**
  + cd /opt/wso2am-analytics-2.0.0 && ./bin/wso2server.sh –Dsetup
  + chown –R wso2.wso2 /opt/wso2am-analytics-2.0.0
  + su –wso2
  + cd /opt/wso2am-analytics-2.0.0 && ./bin/wso2server.sh start

1. **Firewall**
   1. **Server 10.0.0.1**

**### Allow access GUI WSO2**

-A INPUT -i eth0 -m state --state NEW -m tcp -p tcp --dport 9443 -j ACCEPT

-A INPUT -i eth0 -m state --state NEW -m tcp -p tcp --dport 9444 -j ACCEPT

**# WSO2AM2**

-A INPUT -m state --state NEW -m tcp -p tcp --dport 8243 -s 10.0.0.2 -j ACCEPT

-A INPUT -m state --state NEW -m tcp -p tcp --dport 443 -s 10.0.0.2 -j ACCEPT

-A INPUT -m state --state NEW -m tcp -p tcp --dport 8443 -s 10.0.0.2 -j ACCEPT

-A INPUT -m state --state NEW -m tcp -p tcp --dport 7612 -s 10.0.0.2 -j ACCEPT

**## Allow firwall WSO2 membership**

-A INPUT -m state --state NEW -m tcp -p tcp --dport 4000 -s 10.0.0.2 -j ACCEPT

* 1. **Server 10.0.0.2**

**### Allow access GUI WSO2**

-A INPUT -i eth0 -m state --state NEW -m tcp -p tcp --dport 9443 -j ACCEPT

-A INPUT -i eth0 -m state --state NEW -m tcp -p tcp --dport 9444 -j ACCEPT

**# WSO2AM2**

-A INPUT -m state --state NEW -m tcp -p tcp --dport 8243 -s 10.0.0.1 -j ACCEPT

-A INPUT -m state --state NEW -m tcp -p tcp --dport 443 -s 10.0.0.1 -j ACCEPT

-A INPUT -m state --state NEW -m tcp -p tcp --dport 8443 -s 10.0.0.1 -j ACCEPT

-A INPUT -m state --state NEW -m tcp -p tcp --dport 7612 -s 10.0.0.1 -j ACCEPT

-A INPUT -m state --state NEW -m tcp -p tcp --dport 7712 -s 10.0.0.1 -j ACCEPT

**## Allow firwall WSO2 membership**

-A INPUT -m state --state NEW -m tcp -p tcp --dport 4000 -s 10.0.0.1 -j ACCEPT

**6. ==== Turning Server**

$ /etc/security/limits.d/wso2.conf

+ wso2 soft nproc 32000

+ wso2 hard nproc 32000

+ wso2 soft nofile 64000

+ wso2 hard nofile 64000