Role WEB

Description of the role

The role **WEB** is provided by a Java application under a modified Wildfly. The server has read and write access to both the **STORE** role and the **DATA** role. Access to the jtel portal and the jtel SOAP interfaces is provided via HTTP on port 8080 and 8081 (for HTTPS access provided by the proxy). User sessions on the portal are bound to the respective web server. This also applies to the SOAP v1 interface. The new SOAP v3 interface, which is available as of version 3.06, allows the execution of SOAP queries of a session on any web server.

Linking the data area

Linking the Data area, as descripited on the site Linking STORE (All Linux except STORE).

Installing the software - Wildfly installations

To include the official MySQL software repositories and install the MySQL client, use the following commands:

Install the mysql client

yum -y install https://dev.mysql.com/get/mysql80-community-release-el7-3.noarch.rpm
yum -y install mysql-community-client

Since all access to the shared file share is via a Windows-compatible CIFS-UNC, a symbolic link must be created so that such accesses can also be made under UNIX. This is done with the following command which has to be adapted in practice according to the name of the computer for the role STORE:

Create a symbolic link

mkdir /acd-store
ln -s /home/jtel/shared /acd-store/shared

This allows access to the files in the share with the UNC specification:

Example: Access to the share via UNC

ls -la //acd-store/shared/JTELCarrierPortal

Next, the required Java Runtime Environment is installed with the following command:

Install Java runtime environment

yum -y install https://cdn.jtel.de/downloads/java/jdk-8u202-linux-x64.rpm

Next, the customized application server can now be downloaded and installed:

Install AS: CentOS 7.7 and higher

cd /home/jtel

wget http://cdn.jtel.de/downloads/jboss/wildfly-18.0.1.Final.03.tar.gz tar xzf wildfly-18.0.1.Final.03.tar.gz rm -f wildfly-18.0.1.Final.03.tar.gz mkdir -p wildfly-18.0.1.Final/standalone/deployments chown -R jtel: jtel wildfly-18.0.1. Final mkdir -p /home/jtel/upload chown -R jtel:jtel /home/jtel/upload ln -s /home/jtel/wildfly-18.0.1.Final wildfly-current ln -s /home/jtel/wildfly-current/init.d/wildfly /etc/init.d/wildfly ln -s /home/jtel/wildfly-current/default/wildfly /etc/default/wildfly cd /etc/cron.daily ln -s /home/jtel/wildfly-current/bin/jboss-logmaint.sh ln -s /home/jtel/wildfly-current/bin/jboss-restart.sh cd /usr/local/bin ln -s /home/jtel/wildfly-current/bin/updatejb.sh chkconfig wildfly on

Next, the port shares for the jboss AS service must be entered in the firewall and stored permanently:

Configure firewall

firewall-cmd --zone=public --add-port=5701-5801/tcp --permanent firewall-cmd --zone=public --add-port=5455/tcp --permanent firewall-cmd --zone=public --add-port=8080-8081/tcp --permanent firewall-cmd --zone=public --add-port=4447/tcp --permanent firewall-cmd --zone=public --add-port=5445/tcp --permanent firewall-cmd --zone=public --add-port=20640/udp --permanent firewall-cmd --zone=public --add-port=20642/udp --permanent firewall-cmd --zone=public --add-port=20642/udp --permanent firewall-cmd --zone=public --add-port=20644/udp --permanent firewall-cmd --zone=public --add-port=20644/udp --permanent

Necessary adjustments of the configuration

The configuration of the jboss AS server is done via one or in case of software version >= 3.06 two configuration files. If a version of the software >= 3.06 is used, a copy of the file hazelcast.xml is also stored in the configuration directory of the jboss AS. Since this was already created during the installation of the primary DATA server and stored in the file share of the STORE, it can simply be copied to the destination:

Copy hazelcast.xml

cp /home/jtel/shared/hazelcast.xml /home/jtel/wildfly-current/standalone/configuration chown jtel:jtel /home/jtel/wildfly-current/standalone/configuration/hazelcast.xml

Furthermore, adjustments to the configuration file standalone.xml are necessary. When installing several servers with the WEB role, it is a good idea to store this file in the file share after initial configuration to speed up the installation. If a customized version already exists there, it can be copied to the target location using the following command:

Copy the file standalone-full.xml

cp /home/jtel/shared/standalone.xml /home/jtel/wildfly-current/standalone/configuration chown jtel:jtel /home/jtel/wildfly-current/standalone/configuration/standalone.xml

If, on the other hand, the configuration of the first WEB server is adjusted, some values in the file must be adjusted according to the database server configuration. This can be done with the following commands - cpassword> replace with the appropriate password:

Customize the standalone-full.xml	
DBPRI=acd-dbm DBSTA=acd-dbs DBREP=acd-dbr DBPWD= <password> sed -i -e "s/DATA_PRIMARY/\${DBPRI}/g" -e "s/DATA_STATS/\${DBSTA}/g" -e "s/DATA_REPORTS/\${DBREP}/g" -e "s/DB_PASSWORD/\${DBPWD}/g" /home/jtel/wildfly-current /standalone/configuration/standalone.xml unset DBPWD unset DBREP unset DBSTA unset DBSTA</password>	

The values of the first 4 lines must be adjusted according to the database configuration:

- DBPRI: Name of the primary DATA server
- DBSTA: Name of the DATA server for real-time statistics Data
- DBREP: Name of the DATA server for report execution
- DBPWD: Password of the database connection

After adapting the configuration file standalone-full.xml, it can be saved to the central data share to speed up the configuration of the other WEB servers:

Provision of the file standalone-full.xml for the installation of additional WEB servers

cp -a /home/jtel/wildfly-current/standalone/configuration/standalone.xml /home/jtel/shared

Starting the WEB application server

At this point the Web Server can be started. Entering the following command updates the to be executed web application and starts the web server:

Start the web server - CentOS 7.6 and less

updatejb.sh

A correct start can be checked in the log file of the web server. There you should be able to find the following messages after about 45 seconds from the start:

Success media in /home/jtel/jboss-as-7.1.1.FINAL/standalone/log/server.log

08:07:38,249 INFO	[org.jboss.as.server]	(DeploymentScanner-threads -	- 2)	JBAS018559:	Deployed	"SMSReceiver.war"
08:07:38,250 INFO	[org.jboss.as.server]	(DeploymentScanner-threads -	- 2)	JBAS018559:	Deployed	"CarrierPortal.war"
08:07:38,250 INFO	[org.jboss.as.server]	(DeploymentScanner-threads -	- 2)	JBAS018559:	Deployed	"jasper-utils-0.0.1-SNAPSHOT.jar"

Furthermore, in case of software version >= 3.06 the status of the hazelcast-cluster can be recognized by messages like this

Status of the hazelcast cluster 08:07:24,705 INFO [com.hazelcast.cluster.ClusterService] (hz._hzInstance_1_jtel-cluster-test5.generic-operation.thread-1) [192.168.1.32]:5701 [jtel-cluster-example] [3.5] Members [3] { Member [192.168.1.21]:5701 Member [192.168.1.31]:5701 Member [192.168.1.32]:5701 this } 08:07:26,713 INFO [com.hazelcast.core.LifecycleService] (MSC service thread 1-1) [10.42.13.65]:5701 [jtel-cluster-example] [3.5] Address[192.168.1.32]:5701 is STARTED

These messages appear every time a node of the cluster is added or removed. In the portal, the parameter "ACD.UDP.Webserver.Use.Hazelcast" must be activated, i.e. set to the value 1, so that the web servers use Hazelcast/UDPListener.

The final test to show that the web server has started properly is of course the call directly from the browser. Assuming that the second WEB server has just been installed, the application can be reached in the browser by entering the following URL: http://acd-jb2.example.com:8080/CarrierPortal/sysadmin/login

If everything works, you will be welcomed by the login mask:

test1 Č	₫ ₽
jtel Portal - Login	+
JTEL PORTAL DE EN	
Please enter your login data:	
Reseller :	
 Client :	
 User :	
 Password :	
 Remember me	
 Login	
 Reset Password	
 Forgotten your password? Click here: Password Reset	
 jtel Portal v3.05.1 Build 160613 (J) - © 2009-2016 jtel GmbH	

Installing the software - JBOSS installations

To include the official MySQL software repositories and install the MySQL client, use the following commands:

MySQL 8.x

Install the mysql client

yum -y install https://dev.mysql.com/get/mysql80-community-release-el7-3.noarch.rpm
yum -y install mysql-community-client

MySQL 5.6

Install the mysql client

yum -y install http://dev.mysql.com/get/mysql-community-release-el6-5.noarch.rpm
yum -y install mysql-community-client

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Since all access to the common file share takes place via a Windows-compatible CIFS-UNC, a symbolic link must be created so that such accesses can also take place under UNIX. This is done with the following command which has to be adapted in practice according to the name of the computer for the role STORE:

Create a symbolic link

mkdir /acd-store
ln -s /home/jtel/shared /acd-store/shared

This allows access to the files in the share with the UNC specification:

Example: Access to the share via UNC

ls -la //acd-store/shared/JTELCarrierPortal

Next, the required Java Runtime Environment is installed with the following command:

Install Java runtime environment

yum -y install http://cdn.jtel.de/downloads/java/jdk-7u79-linux-x64.rpm

Next, the customized application server can now be downloaded and installed:

Install AS: CentOS 7.7 and higher

cd /home/jtel wget http://cdn.jtel.de/downloads/jboss/jboss-as-7.1.1.FINAL.15.tar.gz tar xzf jboss-as-7.1.1.FINAL.15.tar.gz rm -f jboss-as-7.1.1.FINAL.15.tar.gz mkdir -p jboss-as-7.1.1.FINAL/standalone/deployments cp jboss-as-7.1.1.FINAL/jboss /etc/init.d chown -R jtel:jtel jboss-as-7.1.1.FINAL chkconfig jboss on

Install AS: CentOS 7.6 and less

cd /home/jtel

wget http://cdn.jtel.de/downloads/jboss/jboss-as-7.1.1.FINAL.14.tar.gz tar xzf jboss-as-7.1.1.FINAL.14.tar.gz rm -f jboss-as-7.1.1.FINAL.14.tar.gz mkdir -p jboss-as-7.1.1.FINAL/standalone/deployments cp jboss-as-7.1.1.FINAL/jboss /etc/init.d chown -R jtel:jtel jboss-as-7.1.1.FINAL chkconfig jboss on mkdir /home/jtel/upload chown -R jtel:jtel /home/jtel/upload

Next, the port shares for the jboss AS service must be entered in the firewall and stored permanently:

Configure firewall
firewall-cmdzone=publicadd-port=5701-5801/tcppermanent
firewall-cmdzone=publicadd-port=5455/tcppermanent
firewall-cmdzone=publicadd-port=8080-8081/tcppermanent
firewall-cmdzone=publicadd-port=4447/tcppermanent
firewall-cmdzone=publicadd-port=5445/tcppermanent
firewall-cmdzone=publicadd-port=20640/udppermanent
firewall-cmdzone=publicadd-port=20642/udppermanent
firewall-cmdzone=publicadd-port=20644/udppermanent
firewall-cmdreload

Next, the daily maintenance scripts are now registered in the cron service:

Enable daily maintenance scripts

cd /etc/cron.daily

- ln -s /home/jtel/jboss-as-7.1.1.FINAL/bin/jboss-logmaint.sh
- ln -s /home/jtel/jboss-as-7.1.1.FINAL/bin/jboss-restart.sh

To simplify the update of the portal software in the jboss AS service, a corresponding script is now created:

Create the update script

cat <<EOFF>/usr/local/bin/updatejb.sh
#!/bin/bash
systemctl stop jboss.service
rm -rf /home/jtel/jboss-as-7.1.1.FINAL/standalone/deployments/*
rm -rf /home/jtel/jboss-as-7.1.1.FINAL/standalone/lib/*
rm -rf /home/jtel/jboss-as-7.1.1.FINAL/standalone/data/*
rm -rf /home/jtel/jboss-as-7.1.1.FINAL/standalone/data/*
cp /home/jtel/shared/JTELCarrierPortal/deploy/*ar /home/jtel/jboss-as-7.1.1.FINAL/standalone/deployments/*
systemctl start jboss.service
EOFF
chmod +x /usr/local/bin/updatejb.sh

Necessary adjustments of the configuration

The configuration of the jboss AS server is done via one or in case of software version >= 3.06 two configuration files. If a version of the software >= 3.06 is used, a copy of the file hazelcast.xml is also stored in the configuration directory of the jboss AS. Since this was already created during the installation of the primary DATA server and stored in the file share of the STORE, it can simply be copied to the destination:

Copy hazelcast.xml

cp /home/jtel/shared/hazelcast.xml /home/jtel/jboss-as-7.1.1.FINAL/standalone/configuration chown jtel:jtel /home/jtel/jboss-as-7.1.1.FINAL/standalone/configuration/hazelcast.xml

Furthermore, adjustments to the configuration file standalone-full.xml are necessary. When installing several servers with the WEB role, it is a good idea to store this file in the file share after initial configuration to speed up the installation. If a customized version already exists there, it can be copied to the target location using the following command:

Copy the file standalone-full.xml

cp /home/jtel/shared/standalone-full.xml /home/jtel/jboss-as-7.1.1.FINAL/standalone/configuration chown jtel:jtel /home/jtel/jboss-as-7.1.1.FINAL/standalone/configuration/standalone-full.xml

However, if you adjust the configuration of the first WEB server, some values in the file must be adjusted according to the database server configuration. This can be done with the following commands - cpassword> replace with the appropriate password:

Customize the standalone-full.xml
DBPRI=acd-dbm
DBSTA=acd-dbs
DBREP=acd-dbr
DBPWD= <password></password>
sed -i -e "s/DATA_PRIMARY/\${DBPRI}/g" -e "s/DATA_STATS/\${DBSTA}/g" -e "s/DATA_REPORTS/\${DBREP}/g" -e "s/DB_PASSWORD/\${DBPWD}/g" /home/jtel/jboss-as-7.1.1.FINAL
/standalone/configuration/standalone-full.xml
unset DBPWD
unset DBREP
unset DBSTA
unset DBPRI

The values of the first 4 lines must be adjusted according to the database configuration:

- DBPRI: Name of the primary DATA server
- DBSTA: Name of the DATA server for real-time statistics Data
- DBREP: Name of the DATA server for report execution
- DBPWD: Password of the database connection

After adapting the configuration file standalone-full.xml, it can be saved to the central data share to speed up the configuration of the other WEB servers:

Provision of the file standalone-full.xml for the installation of additional WEB servers

cp -a /home/jtel/jboss-as-7.1.1.FINAL/standalone/configuration/standalone-full.xml /home/jtel/shared

Starting the WEB application server

If the Centos version is 7.7, you have to apply the following patch before you start jboss

Start the web server - CentOS 7.7 and higher

bash /home/jtel/shared/JTELCarrierPortal/Update/jboss-restart-patch.sh updatejb.sh

At this point the Web Server can be started. Entering the following command updates the to be executed web application and starts the web server:

Start the web server - CentOS 7.6 and less

updatejb.sh

A correct start can be checked in the log file of the web server. There you should be able to find the following messages after about 45 seconds from the start:

Success media in /home/jtel/jboss-as-7.1.1.FINAL/standalone/log/server.log

```
08:07:38,249 INFO [org. jboss.as.server] (DeploymentScanner-threads - 2) JBAS018559: Deployed "SMSReceiver.war"
08:07:38,250 INFO [org.jboss.as.server] (DeploymentScanner-threads - 2) JBAS018559: Deployed "CarrierPortal.war"
08:07:38,250 INFO [org.jboss.as.server] (DeploymentScanner-threads - 2) JBAS018559: Deployed "jasper-utils-0.0.1-SNAPSHOT.jar"
```

Furthermore, in case of software version >= 3.06 the status of the hazelcast-cluster can be recognized by messages like this

Status of the hazelcast cluster

}

```
08:07:24,705 INFO [com.hazelcast.cluster.ClusterService] (hz. hzInstance 1 jtel-cluster-test5.generic-operation.thread-1) [192.168.1.32]:5701 [jtel-cluster-
example] [3.5]
```

```
Members [3] {
       Member [192.168.1.21]:5701
       Member [192.168.1.31]:5701
       Member [192.168.1.32]:5701 this
```

08:07:26,713 INFO [com.hazelcast.core.LifecycleService] (MSC service thread 1-1) [10.42.13.65]:5701 [jtel-cluster-example] [3.5] Address[192.168.1.32]:5701 is STARTED

These messages appear every time a node of the cluster is added or removed. In the portal, the parameter "ACD.UDP.Webserver.Use.Hazelcast" must be activated, i.e. set to the value 1, so that the web servers use Hazelcast/UDPListener.

The final test to show that the web server has started properly is of course the call directly from the browser. Assuming that the second WEB server has just been installed, the application can be reached in the browser by entering the following URL: http://acd-jb2.example.com:8080/CarrierPortal/sysadmin/login

If everything works, you will be welcomed by the login mask:

test1	Ċ	Ů Ď
jtel Portal - Login		+
jtel PORTAL	DE EN	
Please enter your login data:		
Reseller :		
Client :		
User :		
Password :		
Remember me		
Login		
Reset Password		
Forgotten your password? Click here: Password Reset		
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