# JBoss Server setup instruction using Vault

## Servers:

host1, host2

## Prerequisite

1. 2 Unix machines (or virtual machine) running Linux or Solaris
2. Create the unix user “jboss”
3. Mount /opt/jboss/ on shared NAS from both host1, host2
4. Set $HOME directory to /opt/jboss for jboss user
5. host1, host2 should have at least 1 IP addresses each
6. Determine the name of the domain, refer as ${DOMAIN} in this doc

## Unix & OVM Setup

1. Run “hostname –a” to verify it returns the value of host1, host2 respectively
2. Run “uname –n” to verify it returns the value of host1, host2 respectively. The JBoss management startup/shutdown unix shell scripts depend on it.
3. Increase ulimit for jboss user (for Linux)
4. Increase nproc for jboss user (for Linux)

## JBoss Installation

1. Ssh into host1
2. Install JDK 1.7.0-51 as the default JDK in /usr/jdk/jdk1.7.0\_51
3. Modify jboss user ~/.profile to set JAVA\_HOME as below
   1. export JAVA\_HOME=/usr/jdk/jdk1.7.0\_51
4. Install JBoss EAP 6.3 or AS 7:
   1. Get JBoss EAP 6.3 zip from <http://www.jboss.org/download-manager/file/jboss-eap-6.3.0.GA.zip>

Or get from <http://download.jboss.org/jbossas/7.1/jboss-as-7.1.1.Final/jboss-as-7.1.1.Final.zip>

Unzip to $HOME directory

* 1. The directory /opt/jboss/jboss-eap-6.3 is referred to as $JBOSS\_HOME

1. Install any JDBC driver into JBoss (Ex: Sybase JDBC):
   1. Create directory structure $JBOSS\_HOME/modules/com/sybase/main
   2. Create the file module.xml in the above directory with the following:

|  |
| --- |
| <?xml version="1.0" encoding="UTF-8"?>  <module xmlns="urn:jboss:module:1.1" name="com.sybase">  <resources>  <resource-root path="jconn4.jar"/>  </resources>  <dependencies>  <module name="javax.api"/>  <module name="javax.transaction.api"/>  </dependencies>  </module> |

* 1. Copy the jconn4.jar

$JBOSS\_HOME/modules/com/sybase/main/

1. Create the directory structure for the JBoss applications under

$HOME/domains/$DOMAIN/

configuration

logs

releases

1. Setup JBoss Management user with the following users (See Appendix)
   1. admin
   2. jms
   3. Record the secret key for each user.
2. Setup JBoss Application user with username: your app user (Optional step - See Appendix for instruction)
3. Copy the file mgmt-users.properties, mgmt-groups.properties, application-users.properties, application-roles.properties from $JBOSS\_HOME/domain/configuration to $HOME/domains/${DOMAIN}/configuration
4. Continue to the next section

## Setup Encrypted Password and keystore for JBoss user “jms”

1. Setup the Java keystore
   1. Ssh into host1 as jboss user
   2. Setup the environment variables for the shell session

|  |
| --- |
| DOMAIN\_DIR=/opt/jboss/domains/${DOMAIN}  JBOSS\_HOME=/opt/jboss/jboss-eap-6.3 |

* 1. Create the vault directory

|  |
| --- |
| cd ${DOMAIN\_DIR}  mkdir vault |

* 1. Run keytool to create the vault.keystore file in the vault directory as follow (all in one line). Replace [store-password], [key-password] with a new password. Store-password and key-password could be same or different.

|  |
| --- |
| ${JAVA\_HOME}/bin/keytool -genseckey -alias vault -storetype jceks -keyalg AES -keysize 128 -storepass [store-password] -keypass [key-password] -keystore ${DOMAIN\_DIR}/vault/vault.keystore |

* 1. Record the [store-password] and [key-password] entered
  2. Run the JBoss vault utility by:

${JBOSS\_HOME}/bin/vault.sh

* 1. You should see the following:

|  |
| --- |
| =========================================================================  JBoss Vault  JBOSS\_HOME: /opt/jboss/jboss-eap-6.3  JAVA: /usr/jdk/jdk1.7.0\_51/bin/java  =========================================================================  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  \*\*\*\* JBoss Vault \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Please enter a Digit:: 0: Start Interactive Session 1: Remove Interactive Session 2: Exit |

* 1. Start Interactive Session by entering **0**
  2. Enter the information on screen as follow (user input value is highlighted yellow):

|  |
| --- |
| Starting an interactive session  Enter directory to store encrypted files:/opt/jboss/domains/${DOMAIN}/vault/  Enter Keystore URL:/opt/jboss/domains/${DOMAIN}/vault/vault.keystore  Enter Keystore password:[key-password]  Enter Keystore password again:[key-password]  Values match  Enter 8 character salt:[8 characters alpha numeric string]  Enter iteration count as a number (Eg: 44):11  Enter Keystore Alias:vault |

* 1. Record what you enter in “salt”
  2. You should see the following:

|  |
| --- |
| Initializing Vault  Apr 14, 2014 1:55:37 PM org.picketbox.plugins.vault.PicketBoxSecurityVault init  INFO: PBOX000361: Default Security Vault Implementation Initialized and Ready  Vault Configuration in AS7 config file:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  ...  </extensions>  <vault>  <vault-option name="KEYSTORE\_URL" value="/opt/jboss/domains/$DOMAIN/vault/vault.keystore"/>  <vault-option name="KEYSTORE\_PASSWORD" value="[MASK keystore password]"/>  <vault-option name="KEYSTORE\_ALIAS" value="vault"/>  <vault-option name="SALT" value="[based on input]"/>  <vault-option name="ITERATION\_COUNT" value="99"/>  <vault-option name="ENC\_FILE\_DIR" value="/opt/jboss/domains/$DOMAIN/vault/"/>  </vault><management> ...  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Vault is initialized and ready for use  Handshake with Vault complete  Please enter a Digit:: 0: Store a secured attribute 1: Check whether a secured attribute exists 2: Exit |

* 1. Record the [MASK keystore password] above
  2. Enter **0** to store an attribute in the keystore
  3. Follow the on screen instruction as follow (user input value is highlighted yellow):

|  |
| --- |
| Task: Store a secured attribute  Please enter secured attribute value (such as password):[JBoss jms user password]  Please enter secured attribute value (such as password) again:[JBoss jms user password]  Values match  Enter Vault Block:JmsUser  Enter Attribute Name:password  Secured attribute value has been stored in vault.  Please make note of the following:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Vault Block: JmsUser  Attribute Name:password  Configuration should be done as follows:  VAULT::JmsUser::password::1  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  Please enter a Digit:: 0: Store a secured attribute 1: Check whether a secured attribute exists 2: Exit |

1. Repeat the previous step to store a secured attribute to encrypt any Datasource user password, but replace the JmsUser, database user password with your data source name and the appropriate password
2. Modify the ${DOMAIN\_DIR}/configuration/domain.xml to include the encrypted password
   1. Replace the database password with ${VAULT::JmsUser::password::1}
3. Note: You can use this to encrypt string value in domain.xml

## Setup JBoss Startup/Shutdown scripts

1. Create the directory for startup/shutdown scripts

|  |
| --- |
| cd $HOME  mkdir ~/scripts  mkdir ~/scripts/etc  mkdir ~/scripts/bin |

1. The ~/scripts directory is refer to as ${SCRIPTS}
2. Copy all the start/stop/restart scripts to host1:${SCRIPTS}/bin
3. This includes the following: restarthost.sh, restartserverall.sh, starthost.sh, startserver.sh, stopsererall.sh, restartserverall.sh, startserverall.sh, stophost.sh, stopserver.sh
4. Change directory to ${SCRIPTS}/etc
5. Create a new file called setenv.sh with the following content

|  |
| --- |
| # Set and check environments  export JAVA\_HOME=/usr/jdk/jdk1.7.0\_51  export JBOSS\_HOME=${HOME}/jboss-eap-6.3  export LAUNCH\_JBOSS\_IN\_BACKGROUND=1  export SERVER\_GROUP=server-group  export SERVER\_NAME=server |

1. Create a new file called setenv\_${DOMAIN}.sh with the following content:

|  |
| --- |
| node=`uname -n`  export JBOSS\_MGMT=${node}:9001  export DOMAIN=your\_domain  export DOMAIN\_DIR=${HOME}/domains/${DOMAIN} |

# Appendix

## JBoss cluster information

1. There are 2 virtual machines for the JBoss cluster
2. Each virtual machines is referred as a JBoss host or machine
3. The machines are host1, host2
4. There is one domain controller per JBoss cluster
5. Domain controller runs on host1
6. The domain controller must be started first.

## Procedure for Starting/Stopping JBoss servers

1. Refer to JBoss cluster information for cluster setup
2. Domain controller must be started first.
3. To START JBoss on host1:
   1. ssh into the machine
   2. Run the following command

starthost.sh ${DOMAIN} host1

1. To START JBoss on host2:
   1. ssh into the machine
   2. Run the following command

starthost.sh ${DOMAIN} host2

1. To STOP JBoss on host1:
   1. ssh into the machine
   2. Run the following command

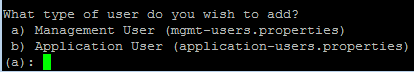
stophost.sh ${DOMAIN} host1

1. To STOP JBoss on host2:
   1. ssh into the machine
   2. Run the following command

stophost.sh ${DOMAIN} host2

## Create JBoss Management user

1. Change directory to $JBOSS\_HOME/bin
2. Run add-user.sh
3. Press Enter to use default (a. Management)



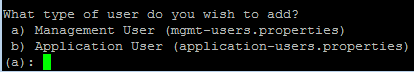
1. Enter username
2. Enter password. Password must meet minimum requirement (At least 1 cap letter, 1 number, 1 symbol)
3. Re-enter password
4. Specify the Group if applicable
5. Confirm if information is correct



1. Enter YES for the question if the new user going to be used for one AS process to connect to another AS process.
2. Record the Secret value.
3. Copy the file mgmt-users.properties, mgmt.-groups.properties from $JBOSS\_HOME/domain/configuration to $HOME/domains/${DOMAIN}/configuration

## Change JBoss Management user password

1. Change directory to $JBOSS\_HOME/bin
2. Run add-user.sh
3. Press Enter to use default (a. Management)



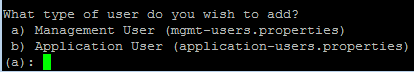
1. Enter username (use existing username to change password)
2. Enter yes to update
3. Enter password. Password must meet minimum requirement (At least 1 cap letter, 1 number, 1 symbol)
4. Re-enter password
5. Leave blank for Group



1. Enter no for connect to another AS process.
2. Copy the file mgmt-users.properties, mgmt-groups.properties from $JBOSS\_HOME/domain/configuration to $HOME/domains/${DOMAIN}/configuration

## Create JBoss Application user

1. Change directory to $JBOSS\_HOME/bin
2. Run add-user.sh
3. Enter b to create Application User



1. Enter username
2. Enter password. Password must meet minimum requirement (At least 1 cap letter, 1 number, 1 symbol)
3. Re-enter password
4. Enter “guest” for Group
5. Enter Y if everything is correct



1. Enter YES for the question if the new user going to be used for one AS process to connect to another AS process.
2. Record the Secret value to be used later.
3. Copy the file application-users.properties, application-roles.properties from $JBOSS\_HOME/domain/configuration to $HOME/domains/${DOMAIN}/configuration