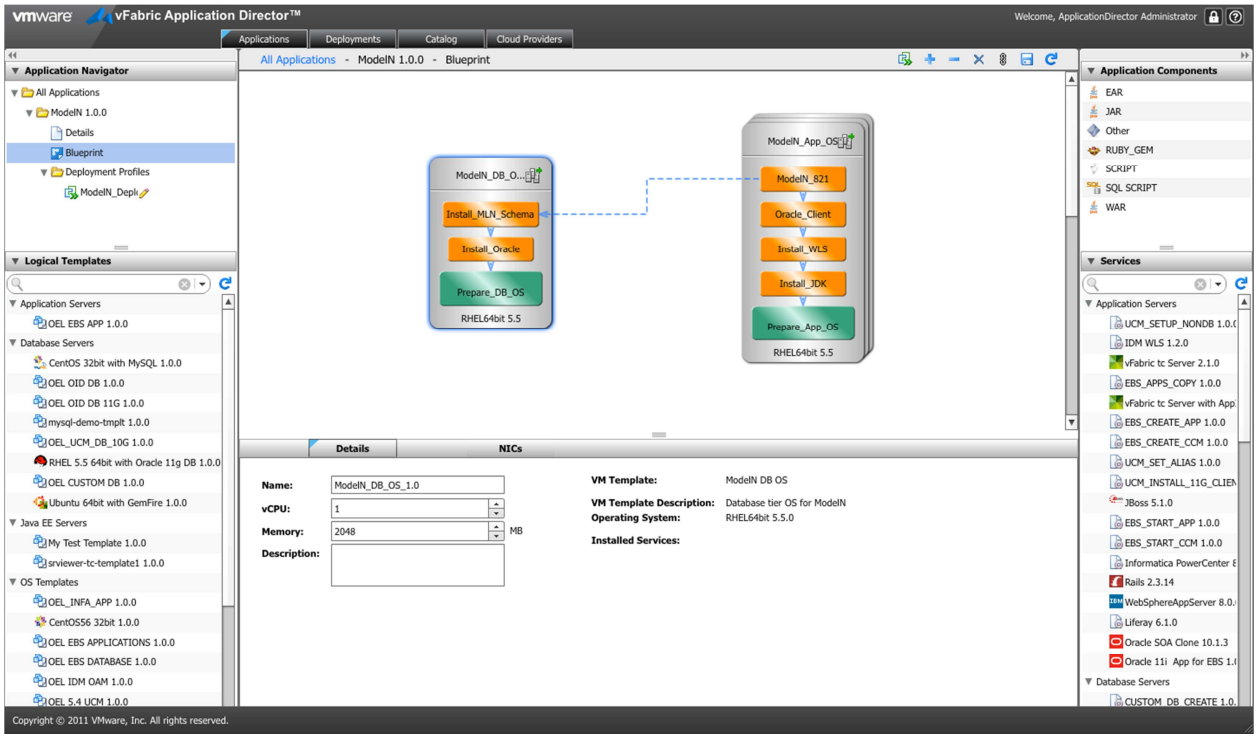
# ModelN - Blueprint Information

## 1. OVERVIEW

The purpose of this document is to describe the ModelN blueprint in detail. The goal of the blueprint is to allow for provisioning and configuration of a ModelN instance in an automated and repeatable fashion.

The following components and versions are installed as part of the ModelN instance:

(1) ModelN for High Tech 8.2.1
(2) Oracle WebLogic Server 10.3.5
(3) Oracle Database 11.2 (both client and server)
(4) JDK 1.6.0



# 2. HIGH LEVEL BLUEPRINT DESIGN

Conceptually, the blueprint design consists of the tasks described below. These tasks are listed in chronological order:

(1) Prepare OS (common to DB & App tier)
(2) Install JDK 1.6 (App tier)
(3) Install WLS 11g (App tier)
(4) Install Oracle 11g (server on DB tier & client on App tier)
(5) Install MLN Schema (DB tier)
(6) Install ModelN (App tier)

## 2.1 Files

You will need access to create the following file repository that contains the necessary installers and configuration files needed. We will refer to this repository as the Dropbox Home in this document.

$DROPBOX_HOME/MLN:

| | |
|---|---|
| build.xml | Ant-based build file for installation |
| runner.sh | Main driver file |

$DROPBOX_HOME/MLN/config:

| | |
|---|---|
| db_install.rsp | Database install response file (full install of server) |
| db_install_swonly.rsp | Database install response file for software only (client) |
| install-mln-schemas.sh | Shell script to install ModelN schema |
| license.xml | Valid ModelN license file |
| silent.xml | WebLogic silent installation file |

$DROPBOX_HOME/MLN/installer:

| | |
|---|---|
| jdk-6u25-linux-x64.bin | JDK 1.6 installation file |
| wls1035_generic.jar | WebLogic 10.3.5 installer |

$DROPBOX_HOME/MLN/installer/clone:

| | |
|---|---|
| cust-dev.zip | Zip file containing cust information |
| mn821-dev.zip | Zip file containing cloned ModelN software |
| vmdata-dev.dmp | Oracle export file of ModelN schema data |

## 2.2 Prepare OS Properties

The Prepare OS task sets the hostname for the machine that’s provisioned. The following properties govern the execution of the blueprint:

Details | Properties | Actions

| Name | Description | Type |
|---|---|---|
| HOST_NAME_PATTERN | Pattern to use for the hostname, for e.g., ora-%e-osb-a%c, where %e will be expanded to the environment name and %c will be expanded to t... | String |
| ENV_NAME | | String |
| IP_ADDRESS | The IP_ADDRESS parameter must be set at the Blueprint level to the ip address of the node (self:ip) | String |
| DOMAIN_NAME | Domain name | String |
| HOST_NAME | | String |
| env_util | | Content |
| NODE_ARRAY | IF it's a multi-node cluster, then please set this value to the array of cluster nodes, i.e. all(node_array_index). Otherwise, leave it empty. | Array |
| NODE_ARRAY_INDEX | Please set this variable to the node array index if it's a multi-node cluster (self:node_array_index). If it's not a multi-node cluster, then leave it a... | String |
| MOUNT_OPTIONS1 | Options if any for the /etc/fstab entry, for e.g., noauto | String |
| MOUNT_DIR1 | Local directory to which to mount, for e.g., /oracle/shared | String |
| MOUNT_PATH1 | Path of remote filesystem to mount, for e.g. wdc-ns120-m1:/oracle/shared | String |

Actions:

Details | Properties | Actions

| Lifecycle Stage | Script Type | Script |
|---|---|---|
| INSTALL | Bash Script | #!/bin/bash |
| CONFIGURE | Bash Script | |
| START | Bash Script | |

Install Script:

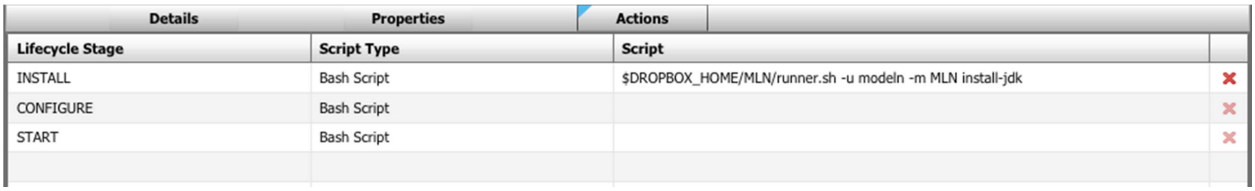
```
#!/bin/bash

# Set path variables

export PATH=$PATH:/opt/java/jdk1.6.0_19/bin:/usr/java/default/bin:/usr/java/jdk1.6.0_29/bin



# Get cluster number. If we are in a cluster, then get the cluster index value.

# Otherwise, use 1 for non-cluster environments

if [ ${#NODE_ARRAY[@]} -gt 1 ]; then

        CNUMBER=`expr $NODE_ARRAY_INDEX + 1`

else

        CNUMBER=1

fi;



# Set hostname variable

HOST_NAME=`echo $HOST_NAME_PATTERN | sed "s/%e/$ENV_NAME/g" | sed "s/%c/$CNUMBER/g"`
```

```
echo "Setting hostname to $HOST_NAME.$DOMAIN_NAME"


# Change VM hostname

hostname $HOST_NAME


# Replace hostname in /etc/hosts

sed -i.bak "s/$IP_ADDRESS.*/$IP_ADDRESS $HOST_NAME.$DOMAIN_NAME $HOST_NAME/g" /etc/hosts

sed -i.bak "s/HOSTNAME=.*/HOSTNAME=$HOST_NAME.$DOMAIN_NAME/g" /etc/sysconfig/network


# set HOST_NAME INCLUDING DOMAIN

HOST_NAME="$HOST_NAME"."$DOMAIN_NAME"


# Perform mount commands, if specified.

if [ -n "$MOUNT_PATH1" -a -n "$MOUNT_DIR1" ]; then

   echo "Mounting $MOUNT_PATH1 to $MOUNT_DIR1 with options $MOUNT_OPTIONS1"


   test -d "$MOUNT_DIR1"     || mkdir -p $MOUNT_DIR1

   test -z "$MOUNT_OPTIONS1" && MOUNT_OPTIONS1="defaults"


   mount -o $MOUNT_OPTIONS1 $MOUNT_PATH1 $MOUNT_DIR1


   if [ $? -eq 0 ]; then

      echo "$MOUNT_PATH1  $MOUNT_DIR1 nfs $MOUNT_OPTIONS1 1 2" >> /etc/fstab

   else

      exit $?

   fi;

fi;
```

## 2.3 Install JDK 1.6

The Install JDK task installs JDK 1.6.0 on the machine. It's governed by the following properties:


Actions:

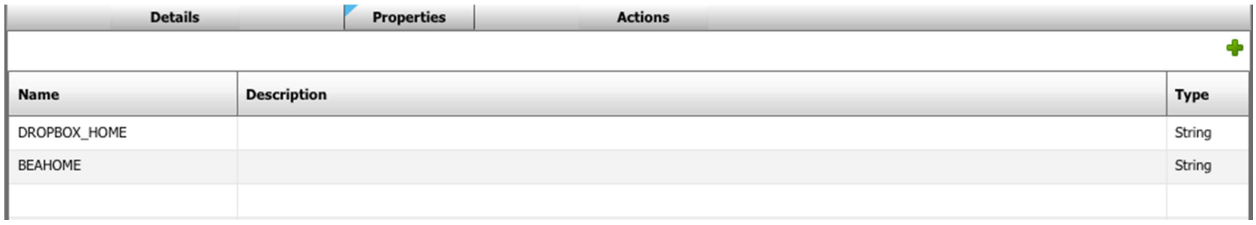



Install Script:

```
$DROPBOX_HOME/MLN/runner.sh -u modeln -m MLN install-jdk
```

## 2.4 Install WLS 11g

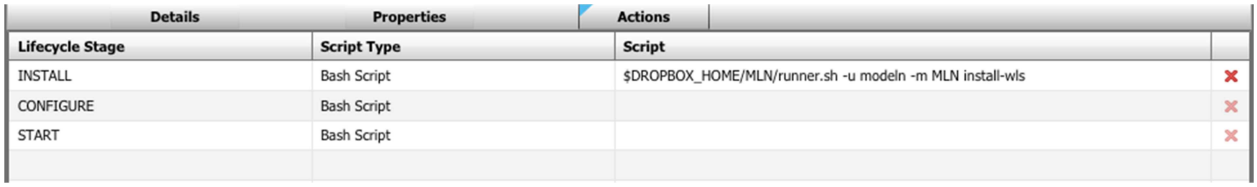
The Install WLS task installs WLS 11g on the machine. It uses the JDK that's installed in the previous step. It's governed by the following properties:



| Details | Properties | Actions |
|---|---|---|

| Name | Description | Type |
|---|---|---|
| DROPBOX_HOME | | String |
| BEAHOME | | String |

Actions:



| Details | Properties | Actions |
|---|---|---|

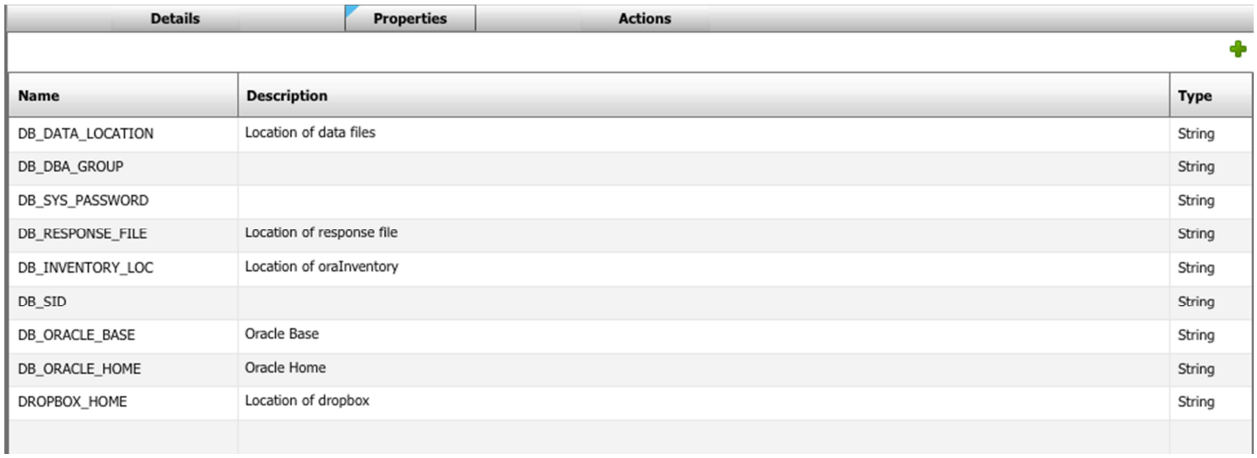
| Lifecycle Stage | Script Type | Script |
|---|---|---|
| INSTALL | Bash Script | $DROPBOX_HOME/MLN/runner.sh -u modeln -m MLN install-wls |
| CONFIGURE | Bash Script | |
| START | Bash Script | |

Install Script:

```
$DROPBOX_HOME/OSB/runner.sh –u modeln –m MLN install-wls
```

## 2.5 Install Oracle 11g (client on App tier and server on DB tier)

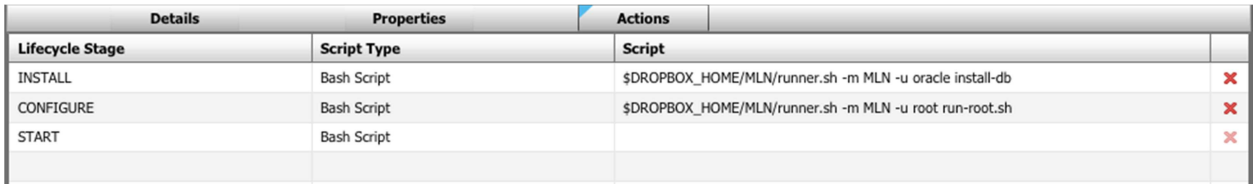
This task installs Oracle database 11g client or server. It's called twice in the blueprint, once to install the server on the DB tier and again to install the client on the App tier.



Details | Properties | Actions

| Name | Description | Type |
|---|---|---|
| DB_DATA_LOCATION | Location of data files | String |
| DB_DBA_GROUP | | String |
| DB_SYS_PASSWORD | | String |
| DB_RESPONSE_FILE | Location of response file | String |
| DB_INVENTORY_LOC | Location of oraInventory | String |
| DB_SID | | String |
| DB_ORACLE_BASE | Oracle Base | String |
| DB_ORACLE_HOME | Oracle Home | String |
| DROPBOX_HOME | Location of dropbox | String |

Actions:



Details | Properties | Actions

| Lifecycle Stage | Script Type | Script |
|---|---|---|
| INSTALL | Bash Script | $DROPBOX_HOME/MLN/runner.sh -m MLN -u oracle install-db |
| CONFIGURE | Bash Script | $DROPBOX_HOME/MLN/runner.sh -m MLN -u root run-root.sh |
| START | Bash Script | |

Install Script:

```
$DROPBOX_HOME/MLN/runner.sh –m MLN –u oracle install-db
```

Configure Script:

```
$DROPBOX_HOME/MLN/runner.sh –m MLN –u root run-root.sh
```

## 2.6 Install ModelN schema

This task installs the ModelN schema (also called VMDATA in this blueprint) on the Oracle database 11g installation.

Details | Properties | Actions

| Name | Description | Type |
|---|---|---|
| VMDATA_PASS | | String |
| VMDATA_USER | | String |
| DROPBOX_HOME | Location of dropbox | String |
| ORACLE_HOME | | String |
| ORACLE_SID | | String |
| VMDATA_DMP | Dump file containing export of VMDATA schema | String |

Actions:

Details | Properties | Actions

| Lifecycle Stage | Script Type | Script |
|---|---|---|
| INSTALL | Bash Script | su oracle -c "$DROPBOX_HOME/MLN/config/install-mln-schemas.sh" |
| CONFIGURE | Bash Script | |
| START | Bash Script | |

Install Script:

```
su oracle -c "$DROPBOX_HOME/MLN/config/install-mln-schemas.sh"
```

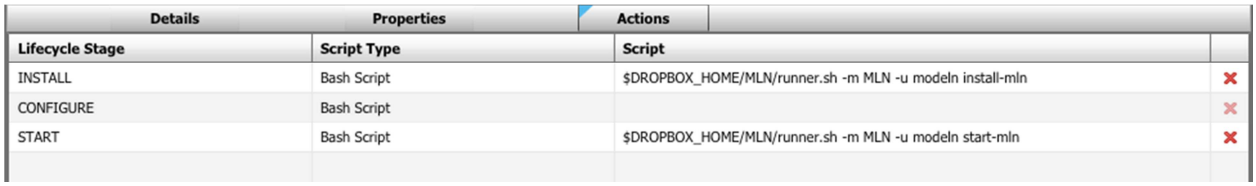
## 2.7 Install ModelN 8.2.1

This task installs ModelN v8.2.1 on the App tier. It takes software and data from an existing clone and reproduces the environment on the App tier.

Details | Properties | Actions

| Name | Description | Type |
|---|---|---|
| DROPBOX_HOME | Location of dropbox | String |
| LICENSE_XML | License file to install. If not specified, then no license will be installed. | String |
| SOFTWARE_ZIP | Zip file with the ModelN software (zipped up /app/modeln/mn821) | String |
| DB_SID | | String |
| DB_PORT | | String |
| DB_HOST | | String |
| VMDATA_PASS | | String |
| VMDATA_USER | | String |
| CUST_ZIP | Zip file with customer data | String |

Actions:



Details | Properties | Actions

| Lifecycle Stage | Script Type | Script |
|---|---|---|
| INSTALL | Bash Script | $DROPBOX_HOME/MLN/runner.sh -m MLN -u modeln install-mln |
| CONFIGURE | Bash Script | |
| START | Bash Script | $DROPBOX_HOME/MLN/runner.sh -m MLN -u modeln start-mln |

Install Script:

```
$DROPBOX_HOME/MLN/runner.sh –m MLN –u modeln install-mln
```

Start Script:

```
$DROPBOX_HOME/MLN/runner.sh –m MLN –u modeln start-mln
```