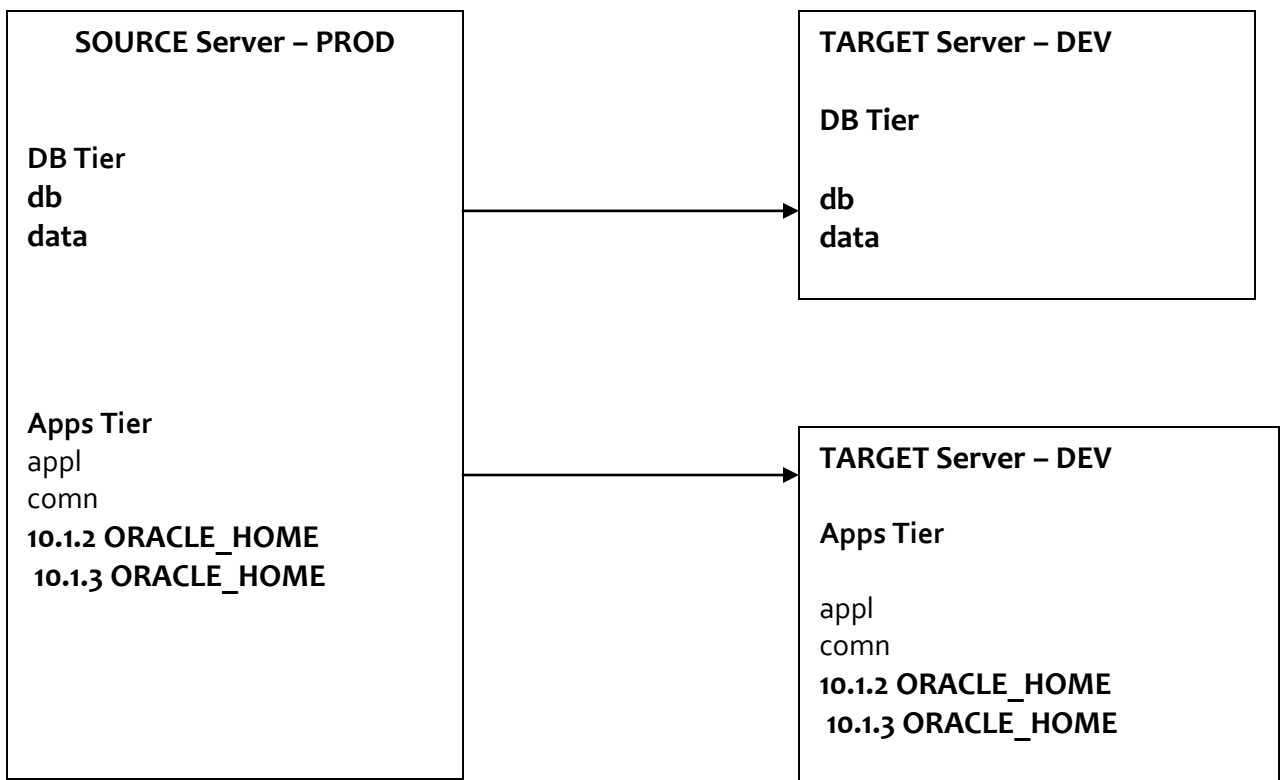


Author – *A.Kishore/Sachin*  
<http://appsdba.info>

## Introduction

This document describes a step-by-step approach to clone an Oracle Applications R12 (which is autoconfig enabled) using Rapid Clone from one to two nodes, it includes Port Selection, Forms Server, Reports Server, Apache Server and Concurrent Processing, also all the scripts or programs, which are used to startup up and shutdown all the services. The cloning word means to do a functional copy of an existing environment. Simply copying the application directories doesn't mean that our new environment will work properly, we need to do some additional steps or tasks to have a functional environment.

### CLONE – Single Server to Two-Node Server



**Author – A.Kishore/Sachin**  
<http://appsdba.info>

Some of the reasons to do a cloning are:

- To create a test environment from an existing production environment to test some patches or to reproduce any production issues.
- To keep a test environment with the most current information of a production environment.
- To move any existing environment to other servers.

In this Cloning demonstration, we will clone our single node R12 instance “PROD” to two-node as one node for database server and second node is for Application. That means all application services will reside on one node and database on a separate node. Our source node is ERP and target node is also ERP. And our source database node is PROD and Target database node is DEV. The TARGET directory structure of both the node is same as Source that is /d01/oracle.

## Cloning Steps:

We should remember that the clone application system and existing Production application system must have same component versions & operating system type. And also we can not clone from windows to linux.

We need to perform certain prerequisites steps before cloning the source system:

**STEP 1** - Login as Applications file user & run the environment file.

```
su applmgr
```

```
cd /d01/oracle/PROD/apps/apps_st/appl
```

```
./APPSPROD_erp.env
```

**Author – A.Kishore/Sachin**  
<http://appsdba.info>

```
[root@erp ~]# su applmgr
[applmgr@erp root]$ cd /d01/oracle/PROD/apps/apps_st/appl
[applmgr@erp appl]$ ls
ad          asp  cln  cus  fnd  gms  ieu  jl   oks  pos          vea
admin       ast  cn   cz   fpa  gr   iex  jmf  okx  pqh          wip
ahl         au   crp  ddd  frm  hri  igc  jtf  ont  pqp          wms
ak          ax   cs   dna  fte  hxc  igf  jtm  opi  PROD_erp.env wps
alr         az   csc  dom  ftp  hxt  igi  lns  ota  prp          wsh
ame         ben  csd  dt   fun  ia   igs  mfg  ozf  psa          wsm
ams         bic  cse  eam  fv   ibc  igw  mrg  pa   psb          xdo
amv         bil  csf  ec   gcs  ibe  imc  msc  pay  psp          xdp
amw         bim  csi  ecx  ghr  ibp  inv  msd  per  pv           xla
ap          bis  csl edr  gl   ibu  ipa  mso  pft  qa           xle
APPSPROD_erp.env biv  csm  ego  gma  ibw  ipm  msr  pji  qot          xnb
ar          bix  csp  eng  gmd  iby  irc  mst  pjn  qp           xnp
as          bne  csr  eni  gme  icx  isc  mwa  pmi  qrm          xtr
asf         bom  cua  fa   gmf  ieb  ita  oe   pn   rg           zpb
asg         bsc  cuf  fem  gmi  iec  itg  okc  po   rlm          zx
asl         cct  cug  ff   gml  iem  ja   oke  poa  sht
asn         ce   cui  fii  gmo  ieo  je   oki  pom  sqlnet.log
aso         chv  cup  flm  gmp  ies  jg   okl  pon  ssp
[applmgr@erp appl]$ . ./APPSPROD_erp.env
```

**STEP 2** - We need to check following software component versions:

(a) Check the version of perl, it should be atleast 5.005 or above.  
To check perl version, Type the following command-

```
$ perl -v
```

We must check that perl is included in the PATH ,by running the following command: echo \$PATH

(b) Check the version of JRE & JDK that should be atleast 1.1.8 & 1.3.1 or above respectively , by running the following command :

```
$ java -version
```

(c) Check the version of zip which should be atleast 2.3 or above.for this type :

```
$ zip
```

**STEP 3:** It is **recommended**to apply the latest AD Minipack & the latest AutoConfig Template patch as mentioned in the metalink note **230672.1** but **not necessary**.

**Author – A.Kishore/Sachin**  
<http://appsdba.info>

**STEP 4 :** we must check whether latest Rapid Clone patch is there or not, for this we query the database whether latest Rapid Clone patch and other prerequisite patches as mentioned in the metalink document **230672.1** as follows:

```
$ select * from AD_BUGS where bug_number='&patch number';
```

If it shows " no rows selected " that means you need to apply the patch. Do ensure that you apply all the patches as per the requirement.

**STEP 5:** If the system is autoconfig enabled configure the application tier by running the `adautocfg.sh` script as follows:

```
$ cd $ADMIN_SCRIPTS_HOME
```

```
$adautocfg.sh
```

If your system is not autoconfig enable then set up the autoconfig on application tier with the help of metalink document **165195.1** ( Migrating to AutoConfig on the Applications Tier).

To check whether your system is AutoConfig enable or not , open any configuration file, if you see the text "*This file is automatically generated by AutoConfig....*"at the top,this mean your system is autoconfig enabled.Also all the applications after 11.5.7 are autoconfig enabled.

**STEP 6:** Login to database tier and set the environment.

```
su oracle
```

```
cd /do1/oracle/PROD/db/tech_st/10.2.0
```

```
./PROD_erp.env
```

Author – *A.Kishore/Sachin*  
<http://appsdba.info>

```
[root@erp ~]# su oracle
[oracle@erp root]$ cd /d01/oracle/PROD/db/tech_st/10.2.0
[oracle@erp 10.2.0]$ ls
10gR2_appsutil.zip  css                jpub              opmn              root.sh
admin              ctx                jre              oracore           root.sh.old
appsmisc           dbs                ldap             oraInst.loc      root.sh.old.1
appsutil           demo              lib              oraInst.loc_back slax
appsutil.zip       diagnostics        log              ord               sqlj
assistants         has                md               oui               sqlplus
bin                hs                 msg              owm               srvn
ccr                install            mgw              perl              sysman
ccr_stage          install.platform  network          plsql             temp
cdata              inventory          nls              precomp           uix
cfgtoollogs       javavm            oc4j             PROD_erp.env     ultrasearch
clone              jdbc              odbc             racg              wf
config             jdk               olap             rdbms             wwg
crs                jlib              OPatch          relnotes          xdk
[oracle@erp 10.2.0]$ . ./PROD_erp.env
```

## Prepare the source system

### (a) Prepare the source system database tier for cloning

Log on to the source system as the ORACLE user and run the following commands:

```
$ cd $ORACLE_HOME/appsutil/scripts/PROD_erp
```

```
.perl /adpreclone.pl dbTier
```

```
[oracle@erp 10.2.0]$ cd appsutil/scripts/PROD_erp
[oracle@erp PROD_erp]$ ls
adautoCfg.sh  addbctl.sh  adexecsql.pl  adpreclone.pl  adstrtdb.sql
adchknlis.pl  addlnctl.sh  adlsnodes.sh  adstopdb.sql  sqlnet.log
[oracle@erp PROD_erp]$ Perl adpreclone.pl dbTier
```

### (b) Prepare the source system application tier for cloning

Log on to the source system as the APPLPROD user and run the following commands.

```
$ cd $/$ADMIN_SCRIPTS_HOME
```

```
$ perl adpreclone.pl appsTier
```

**Author – A.Kishore/Sachin**  
<http://appsdba.info>

```
[applmgr@erp /]$ cd /$ADMIN_SCRIPTS_HOME
[applmgr@erp scripts]$ pwd
//d01/oracle/PROD/inst/apps/PROD_erp/admin/scripts
[applmgr@erp scripts]$ ls
adalnctl.sh      adexecsql.pl      adoafmctl.sh      adstrtal.sh      jtffmctl.sh
adapcctl.sh      adformsctl.sh     adopmmctl.sh      gsmstart.sh      mwactl.sh
adautocfg.sh     adformsrvctl.sh   adpreclone.pl     ieo               mwactlwrpr.sh
adcmctl.sh       adoacorectl.sh    adstpall.sh       java.sh           sqlnet.log
[applmgr@erp scripts]$ perl adpreclone.pl appsTier
```

## Copy the Source Node File System

### Copy the application tier file system to target application tier node as shown below

Log on to the source system application tier nodes as the APPLMGR user.

- Shut down the application tier server processes as shown below

```
cd $ADMIN_SCRIPTS_HOME
```

```
./adstpall.sh apps/appspassword
```

- Copy the following application tier directories from the source node to the target application tier node:

```
cd /do1/oracle/PROD/apps/apps_st/
```

```
appl
```

```
comn
```

```
cd /do1/oracle/PROD/apps/tech_st
```

10.1.2 ORACLE\_HOME & 10.1.3 ORACLE\_HOME

```
scp -pr do1/oracle/PROD/apps/apps_st/appl
applmgr@target_server:/do1/oracle/DEV/apps/apps_st/appl
```

```
scp -pr do1/oracle/PROD/apps/apps_st/comn
applmgr@target_server:/do1/oracle/DEV/apps/apps_st/comn
```

```
scp -pr /do1/oracle/PROD/apps/tech_st applmgr@target_server:/do1/oracle/DEV/apps/tech_st
```

**Author – A.Kishore/Sachin**  
<http://appsdba.info>

Once copied –

- Check the ownership as required

### **Copy the database tier file system to target database tier node as shown below**

Log on to the source system database Tier as the ORACLE user.

- Perform a normal shutdown of the source system database

```
cd $RDBMS_ORACLE_HOME/appsutil/scripts/PROD_erp
```

```
./addbctl.sh stop
```

- Copy the following application tier directories from the source node to the target application tier node:

```
scp -pr do1/oracle/PROD/db/tech_st/10.2.0 oracle@target_server:/do1/oracle/DEV/db/tech_st/10.2.0
```

```
scp -pr /do1/oracle/PROD/db/apps_st/data oracle@target_server:/do1/oracle/DEV/db/apps_st/data
```

Once copied –

- Check the ownership as required
- Start up the source Applications system database and application tier processes

### **Configure the Target System**

Operating System of Target should be same as Source. Operating system should have all prerequisite packages required for Oracle R12 before configuring the Target System. Execute the following commands to configure the target system. You will be prompted for the target system specific values (SID, Paths, Ports, etc)

#### **(a). Configure the target system database server**

Log on to the target system as the ORACLE user and type the following commands to configure and start the database:

```
cd <RDBMS_ORACLE_HOME>/appsutil/clone/bin  
perl adcfgclone.pl dbTier
```

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<http://appsdba.info>

```
[oracle@erp /]$ cd /d01/oracle/PROD/db/tech_st/10.2.0/appsutil/clone/bin
[oracle@erp bin]$ ls
adcfgclone.pl  adchkutl.sh  adclonectx.pl  adclone.pl
[oracle@erp bin]$ perl adcfgclone.pl dbTier
```

Enter the APPS password [APPS]:  
APPS

First Creating a new context file for the cloned system.  
The program is going to ask you for information about the new system:

Provide the values required for creation of the new Database Context file.

Do you want to use a virtual hostname for the target node (y/n) [n] ? :n

Target instance is a Real Application Cluster (RAC) instance (y/n) [n]:n

Target System database name [PROD]:DEV

---

## b. Configure the target system application tier server nodes

Log on to the target system as the APPLMGR user and type the following commands:

```
cd <COMMON_TOP>/clone/bin
```

```
perl adcfgclone.pl appsTier
```

```
[applmgr@erp /]$ cd /d01/oracle/PROD/apps/apps_st/comm/clone/bin
[applmgr@erp bin]$ ls
adaddnode.pl  adcfgclone.pl  adchkutl.sh  adclonectx.pl  adclone.pl
[applmgr@erp bin]$ perl adcfgclone.pl appsTier
```



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<http://appsdba.info>

Enter the APPS password [APPS]:  
APPS

First Creating a new context file for the cloned system.  
The program is going to ask you for information about the new system:

Provide the values required for creation of the new APPL\_TOP Context file.

Do you want to use a virtual hostname for the target node (y/n) [n] ? :N

Target system database SID [PROD]:DEV

Target system database server node [erp]:

Target system database domain name [con]:

Does the target system have more than one application tier server node (y/n) [n] ? :N

Is the target system APPL\_TOP divided into multiple mount points (y/n) [n] ? :N

.....  
.....

All enabled services for this node are started.  
Existing with status 0

**Please Note:** All services of the application tier should exit with zero (0), that means we have done cloning successfully.

## **Finishing Tasks**

Post clone steps vary from client to client, here is the basic change.

### **Profile Option Name Changes at Site Level after Cloning**

Site Name-> PROD, Change it to DEV  
DEV – Clone of PROD as of 15-Dec-10

**Author – A.Kishore/Sachin**  
<http://appsdba.info>

Profile Option Name	Site	Application	Responsibility	User
Site Name	DEV - Clone of PROD as of 1			