

Cloning the Oracle E-Business Suite

Session ID: 10527

A Beginner's Guide

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#C16LV



Who Am I?



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Over 22 years experience with Oracle Database

Over 18 years experience with E-Business Suite

Chair, OAUG Database SIG

Co-Founder AppsPerf

Oracle ACE



OAUG Member of the Year 2013

Applications DBA, BlueStar



Assumptions

- One applications node
- Not RAC
- Unix commands



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Overview

- Prepare the Source
- Clone the Database
- Clone the Applications
- Finishing Tasks

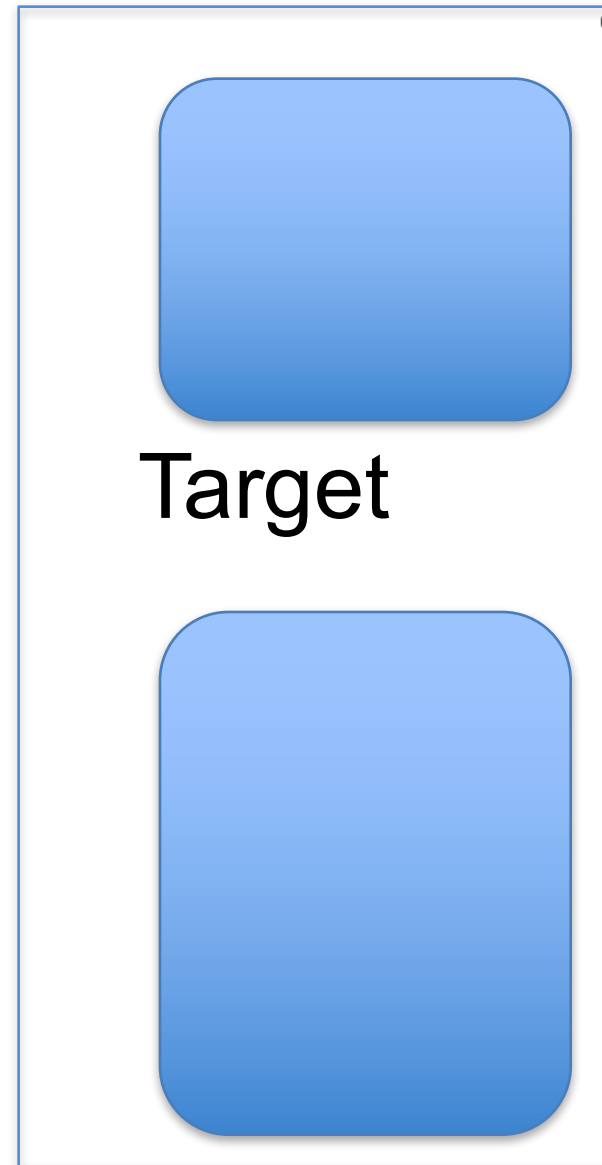
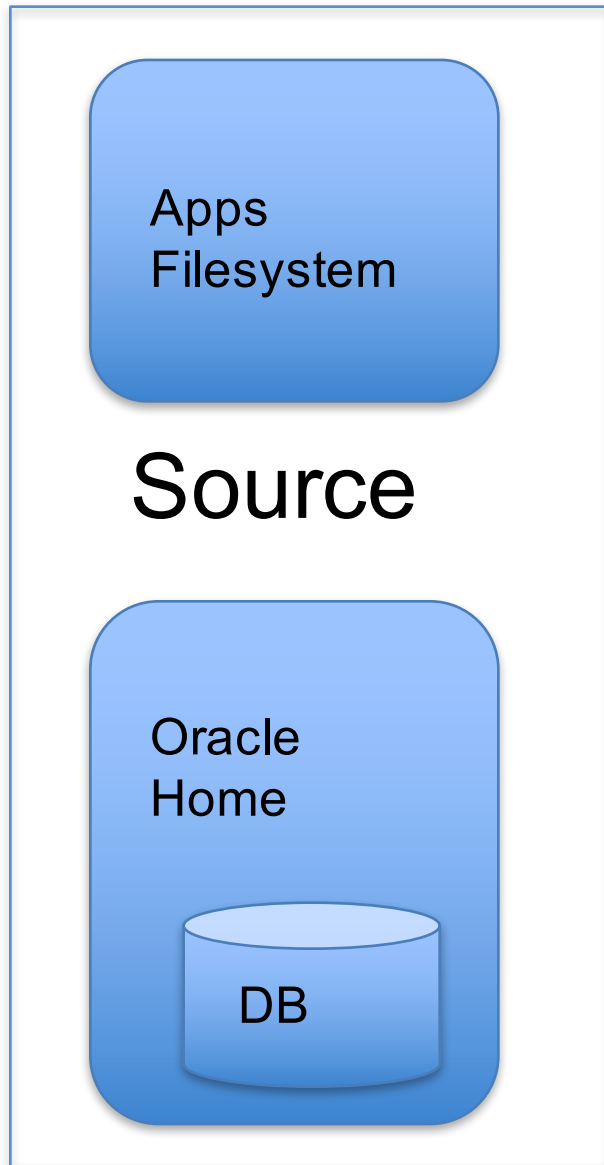


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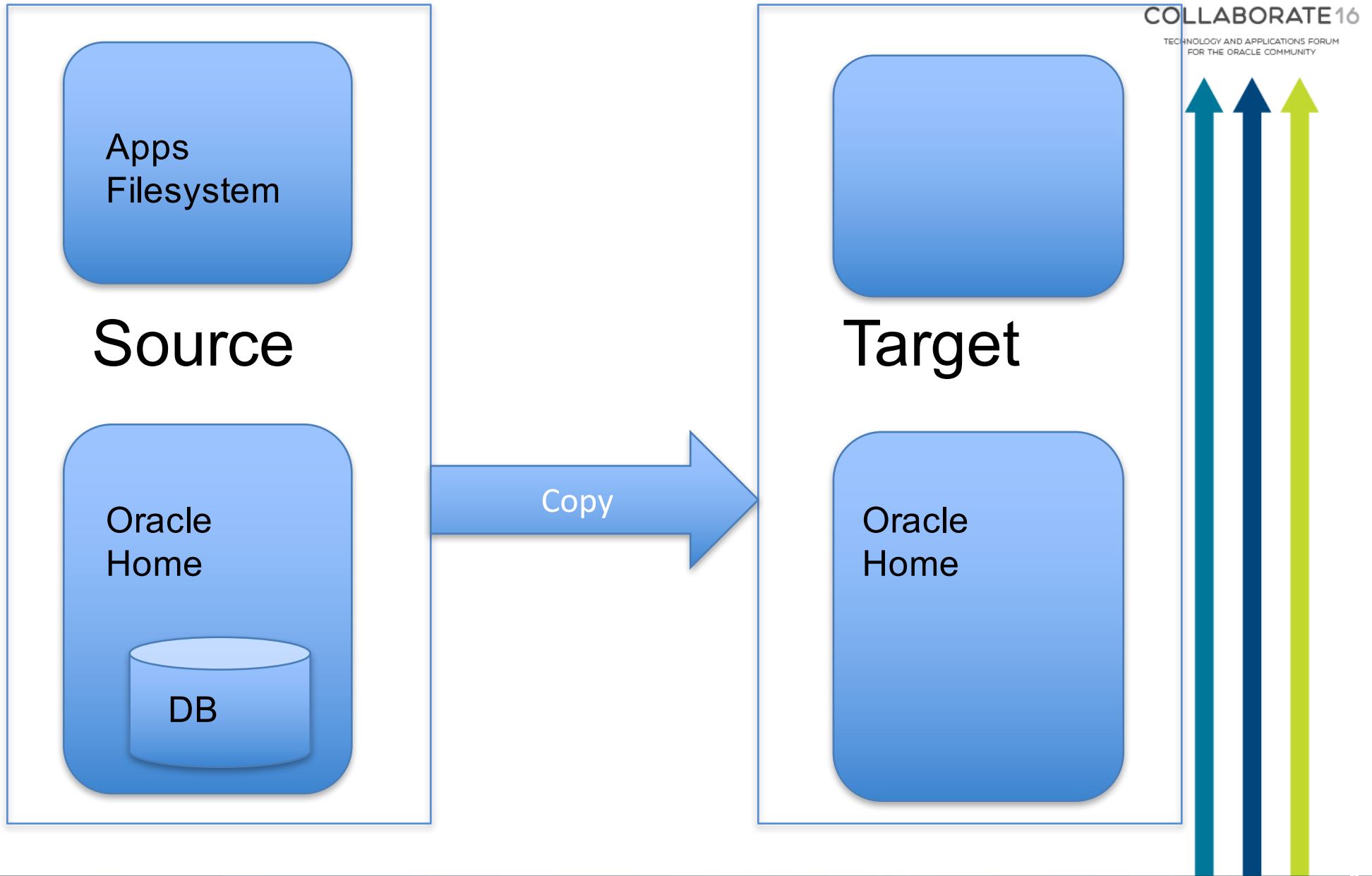


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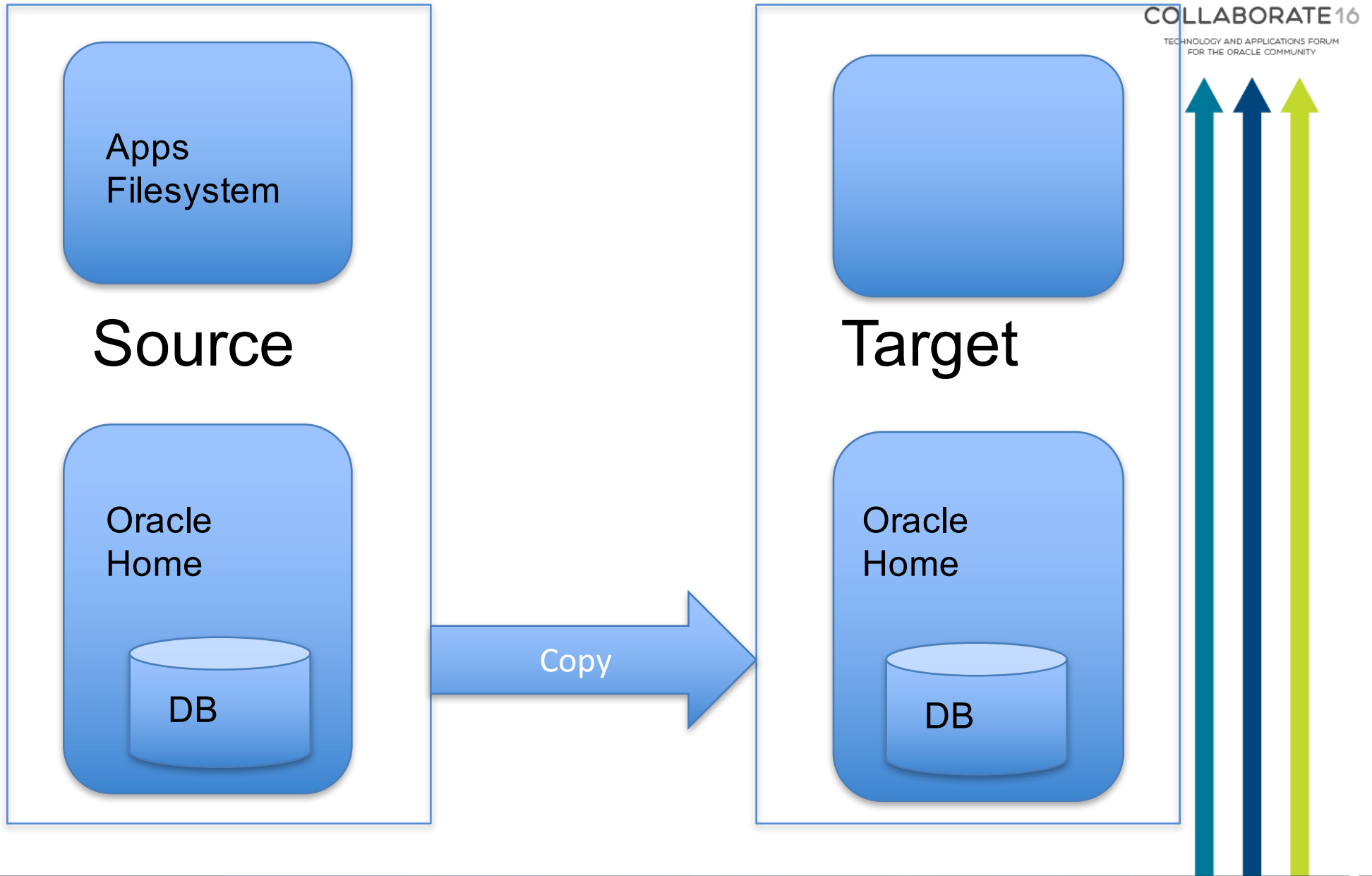
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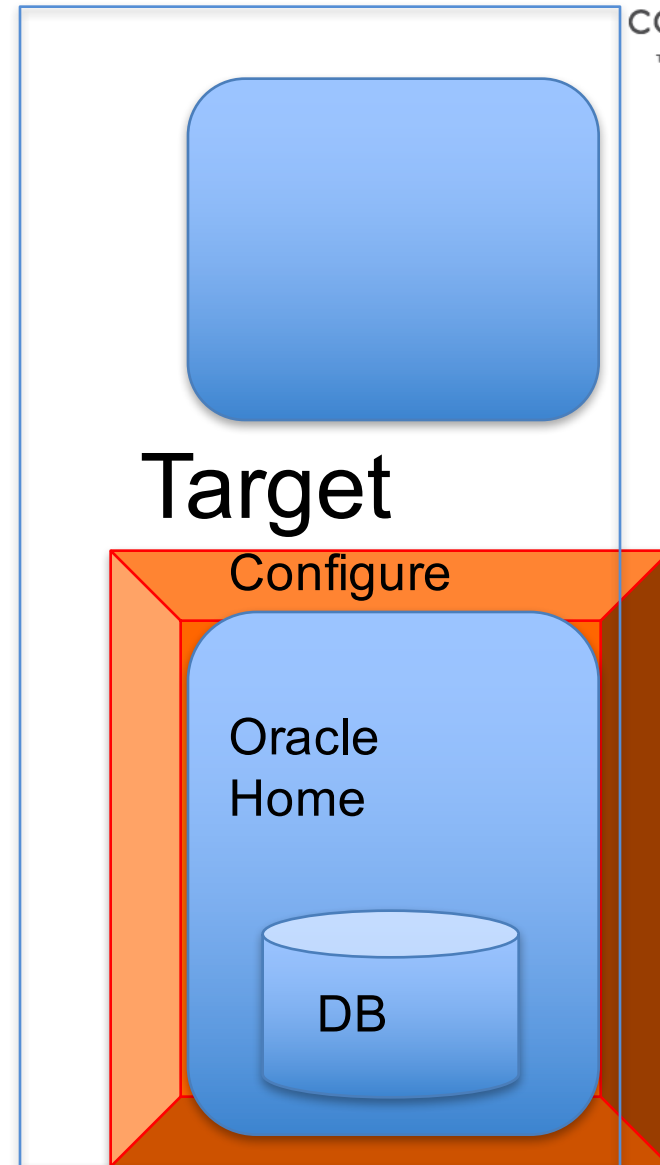
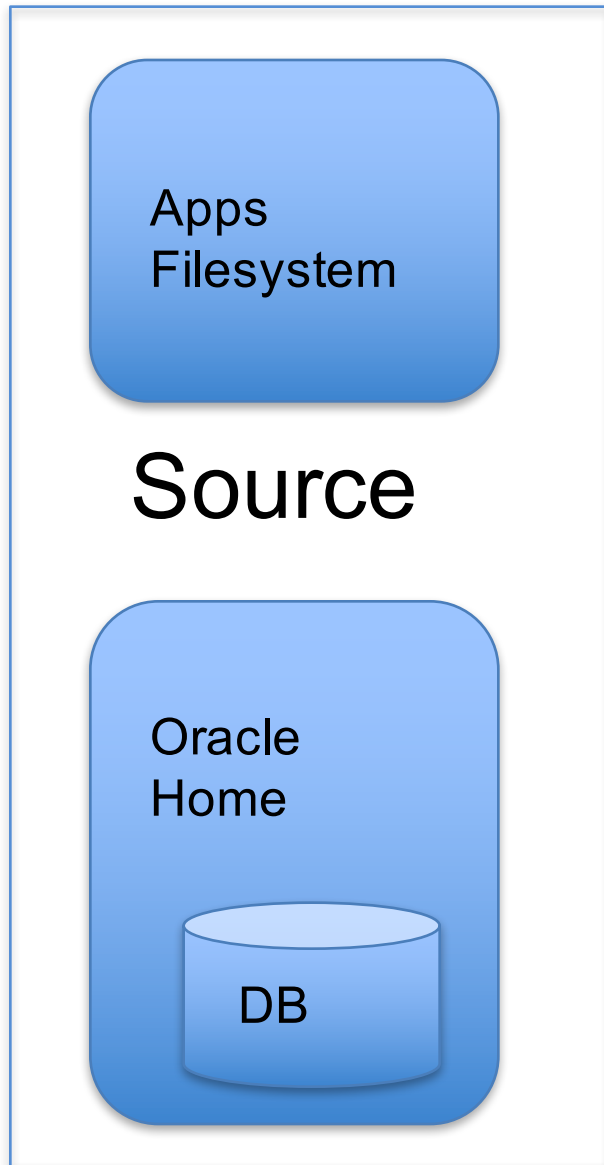
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Cloning



Cloning

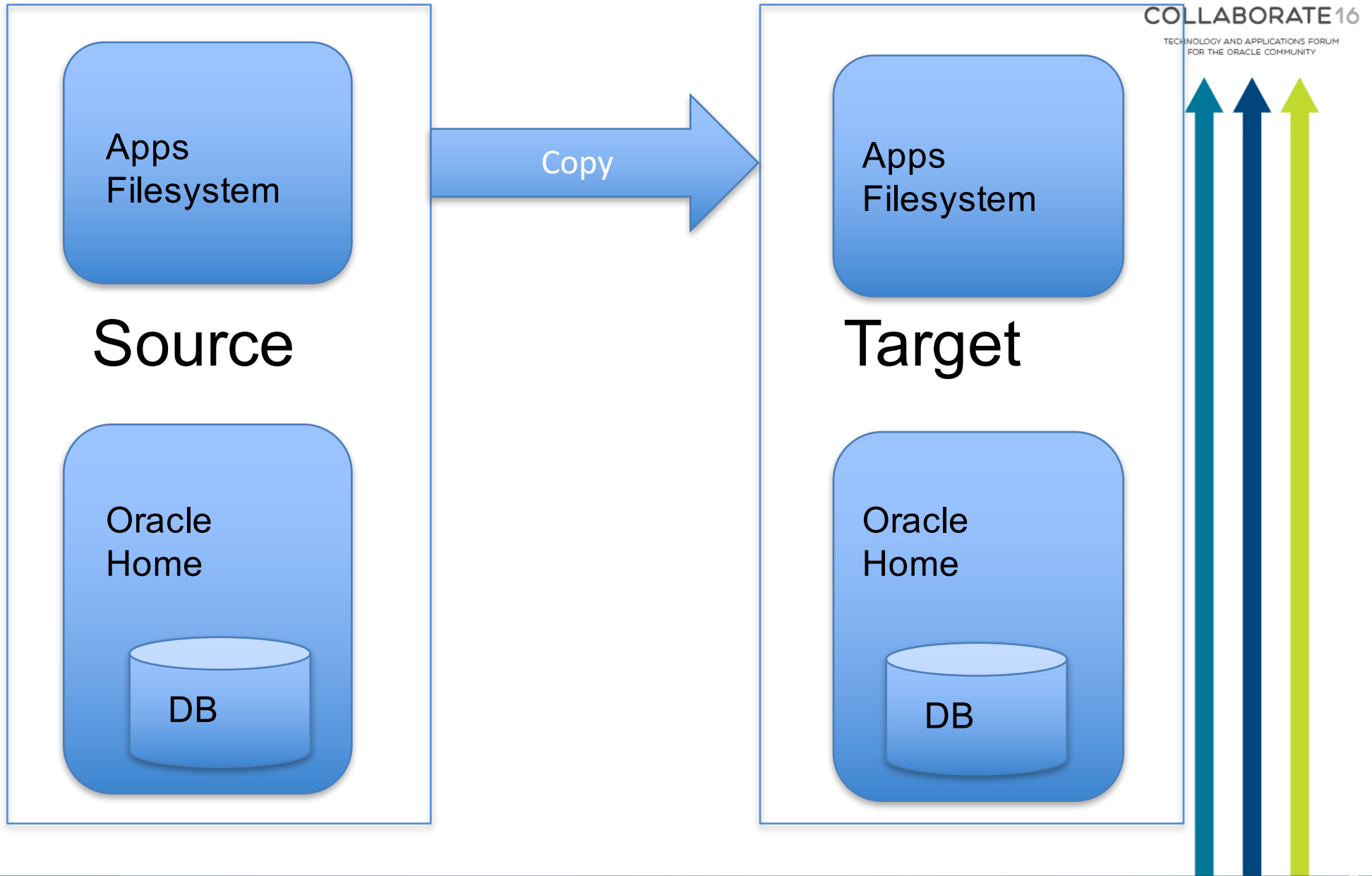


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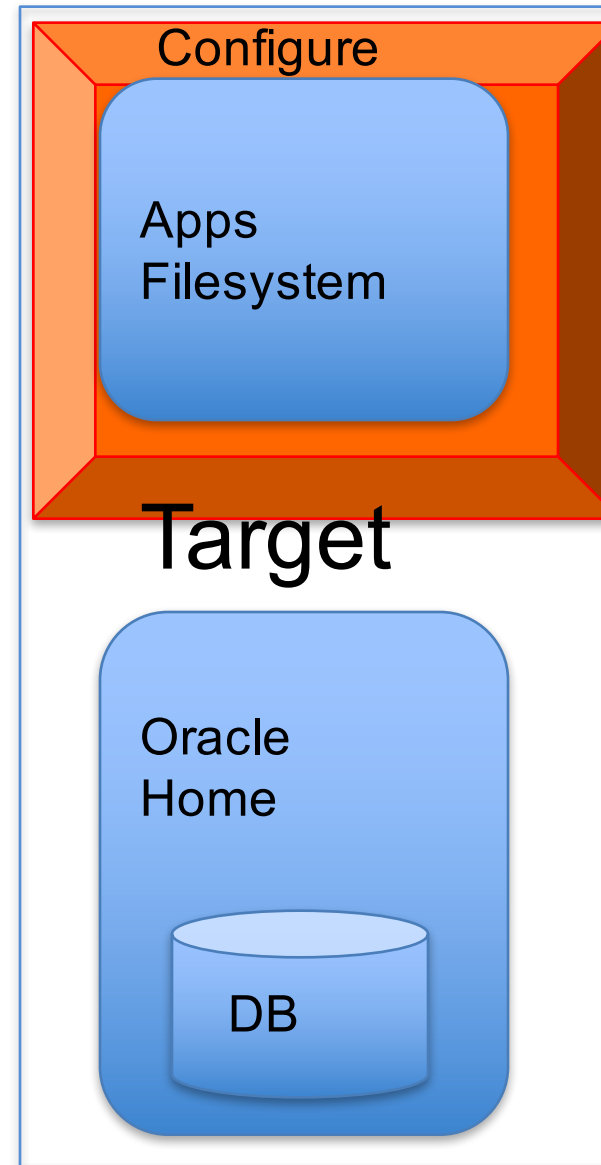
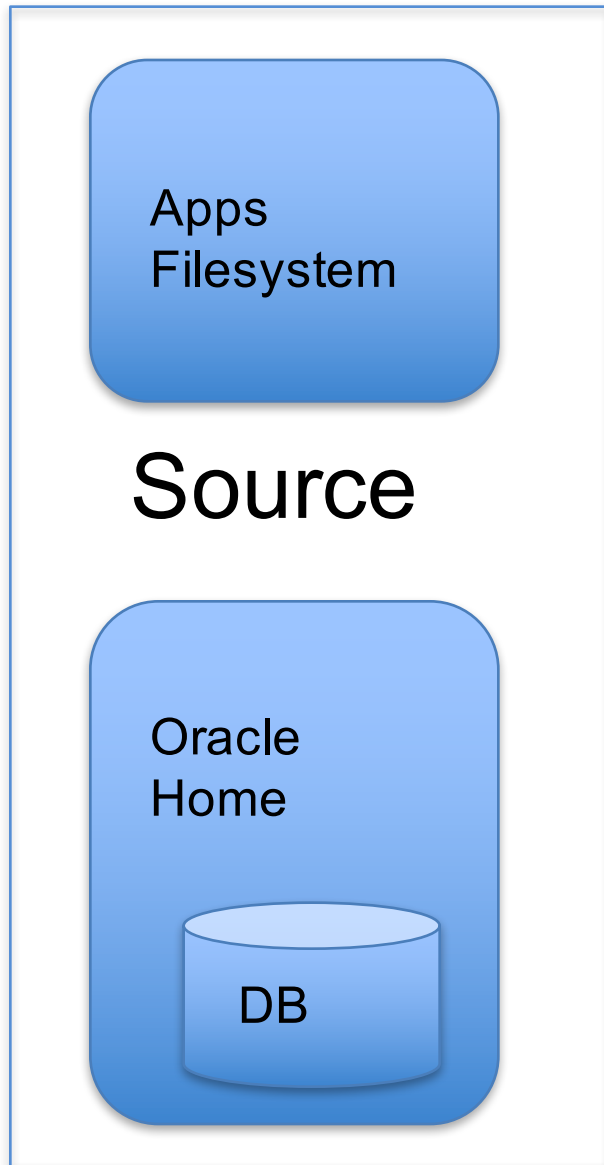
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Cloning



Cloning

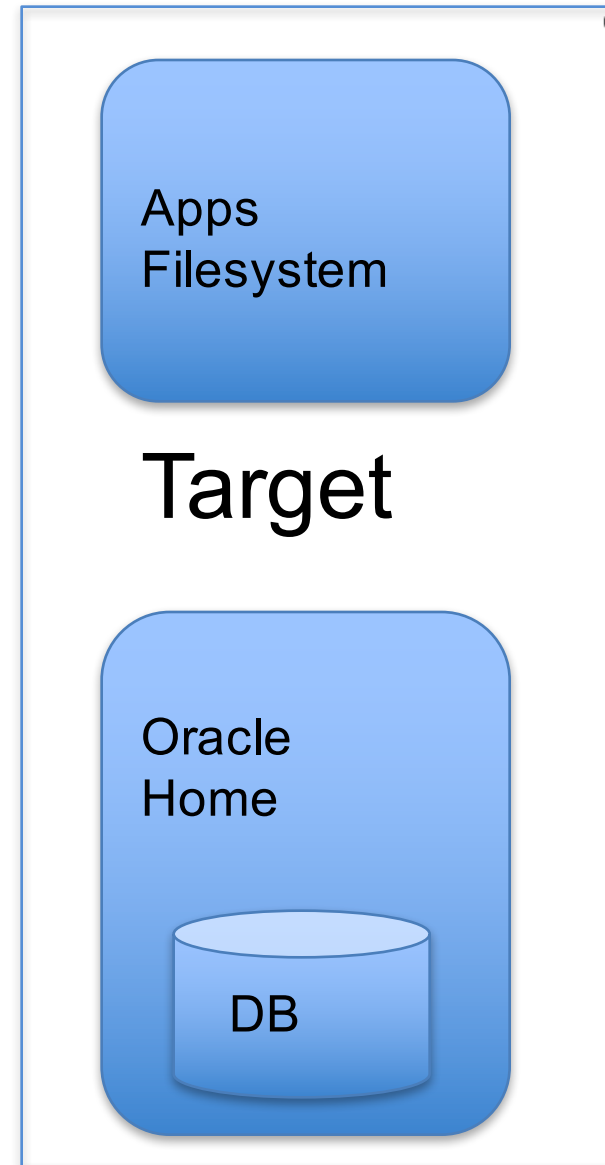
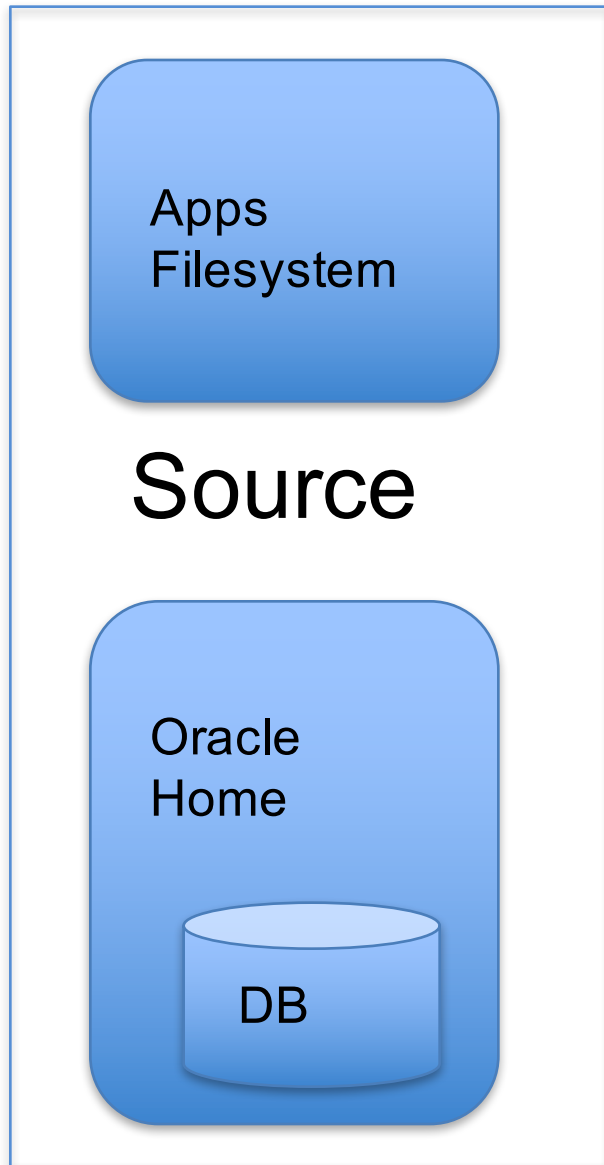


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Prepare the Source



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Autoconfig



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- Both the Applications Tier and Database Tier must be setup for Autoconfig
- You should have the latest Autoconfig, AD, and TXK patches installed (AD/TXK versions are linked in 12.2)
- Enable Autoconfig
 - Install applications tier patches
 - Run autoconfig on the applications tier
 - Run admkappsutil.pl on the applications tier
 - Unzip the resulting appsutil.zip on database tier in the Oracle Home
 - Run autoconfig on the database tier



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12.2 Patching

- The support note states that before cloning, complete any patching cycle through the final (cleanup) phase.
 - This includes running fs_clone
- Implications
 - Nightly clones for reporting/support
 - On-Demand clones
 - fs_clone is not normally required (unless stated in the patch note)

Preclone



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- Oracle builds staging information to use after the clone.
- Apps Tier
 - \$ADMIN_SCRIPTS_HOME
 - (\$COMMON_TOP/admin/scripts/\$CONTEXT_NAME for 11i)
 - adpreclone.pl appsTier
- Database Tier
 - \$ORACLE_HOME/appsutil/scripts/\$CONTEXT_NAME
 - adpreclone.pl dbTier
- 12.2
 - Staging area is much larger than in prior releases because it includes the tech stack.
 - Make sure you are in the RUN filesystem when running adpreclone.pl



Database Tier



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Cold or Hot?



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- The default method in the support notes is cold.
 - Easiest method
 - Shutdown the source
 - Copy the Oracle Home and Database
 - Source does not need to be in archive log mode
 - Depending on the copy is made, could be an extended outage
 - Source buffers are all cleared, so there may be performance impacts
 - Run `adcfgclone.pl dbTier`



Cold or Hot?

- Better method is to leave the source database up.
 - No outage
 - No clearing of caches
- Configuring the database tier is really a multi step process
 - Fortunately, Oracle documents and supports splitting the steps up.

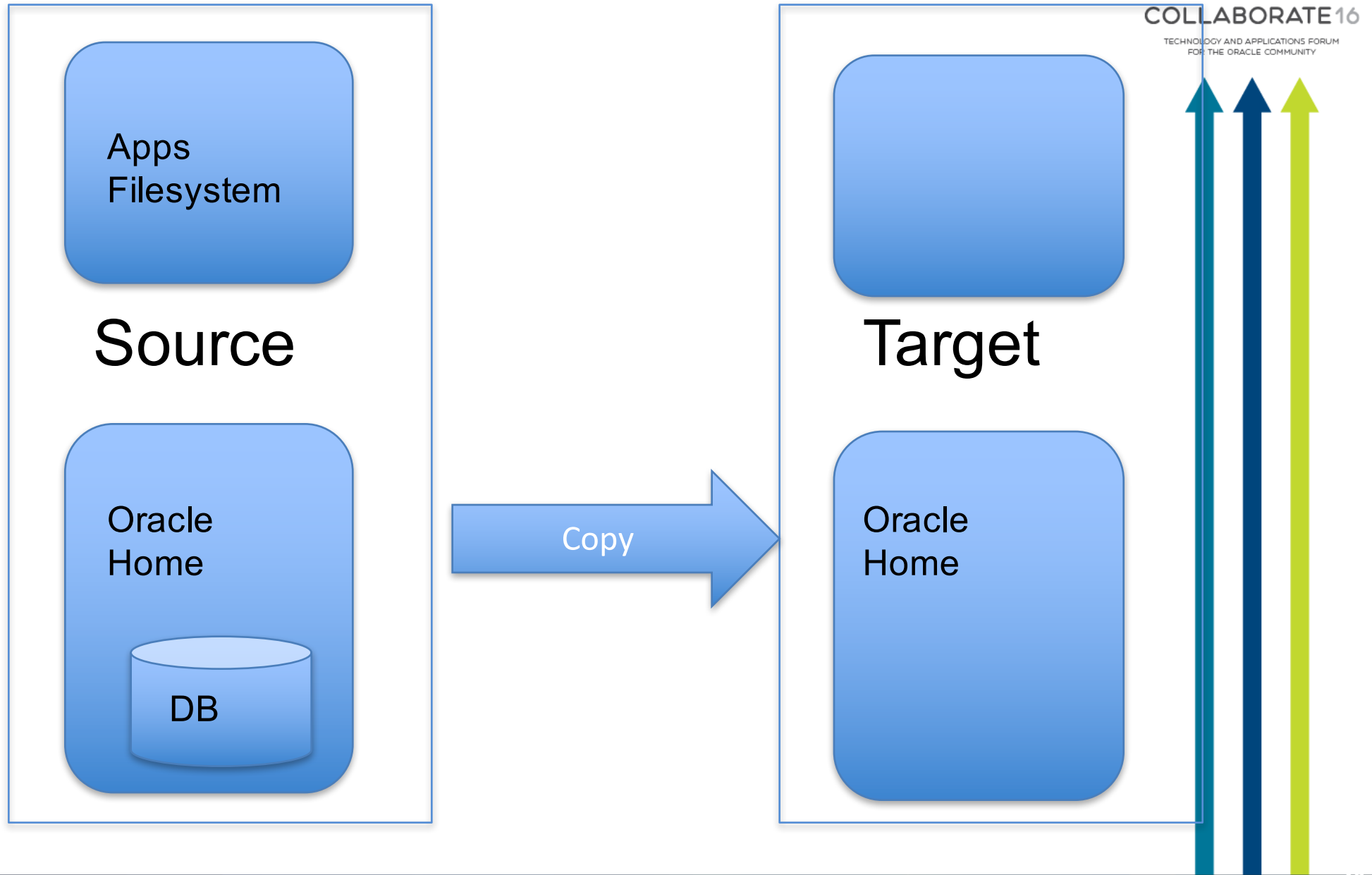


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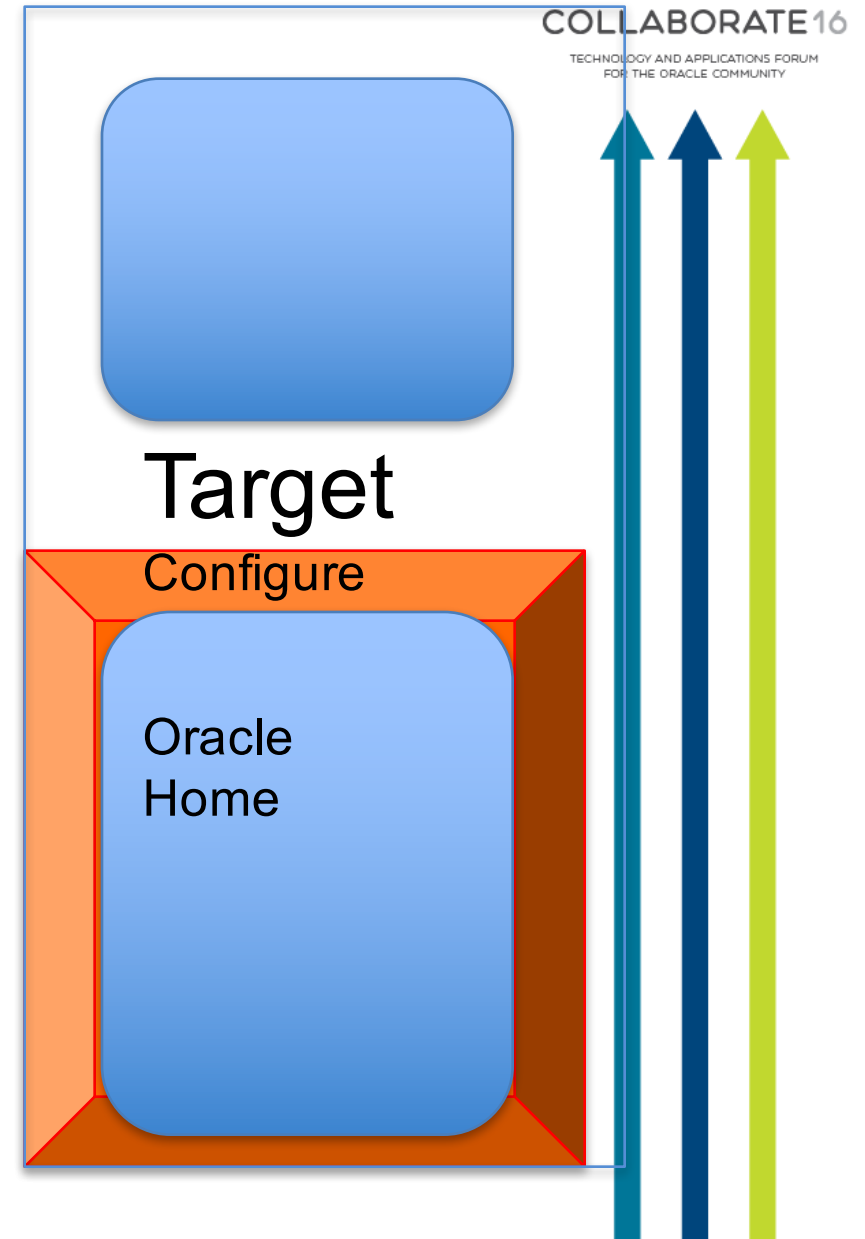
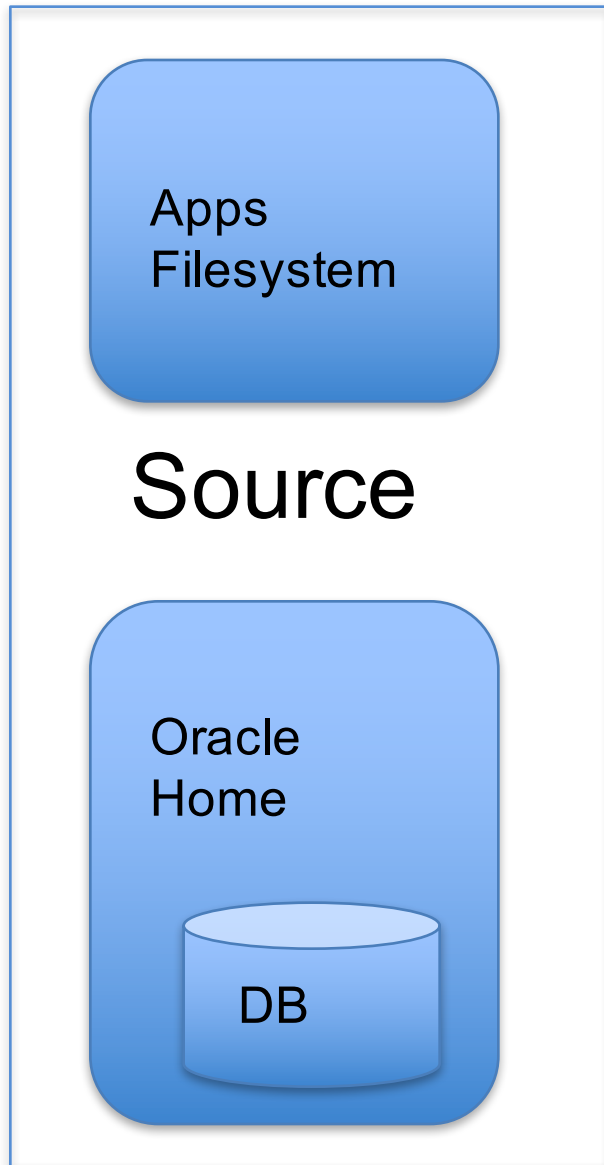
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Hot DB Clone



Hot DB Clone



Hot DB Clone

- `adcfgclone.pl dbTechStack`
 - Relink the `oracle_home`
 - Configure the `init.ora`, listener, etc.
 - Register the home with the central inventory
 - Start the listener

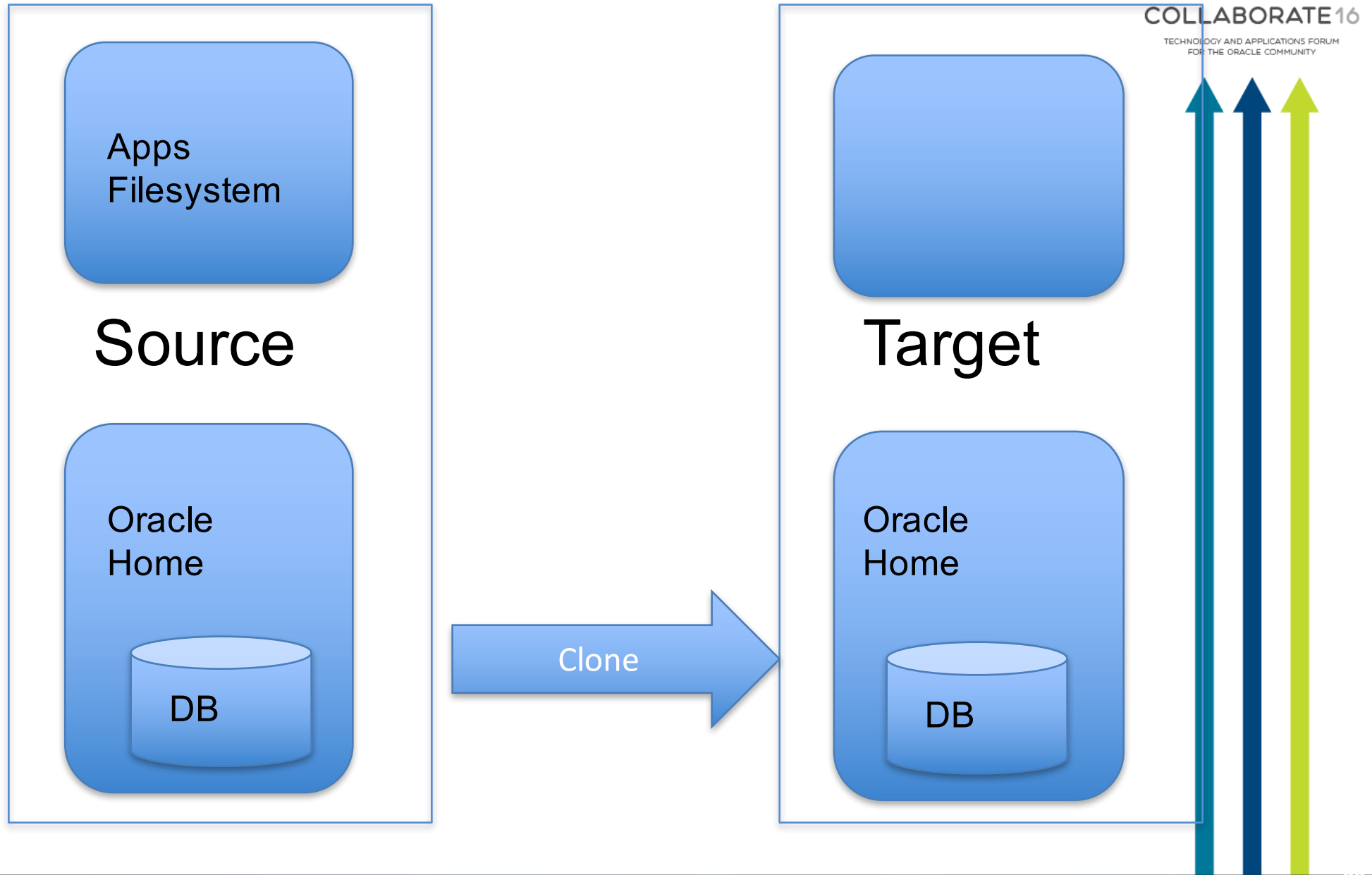


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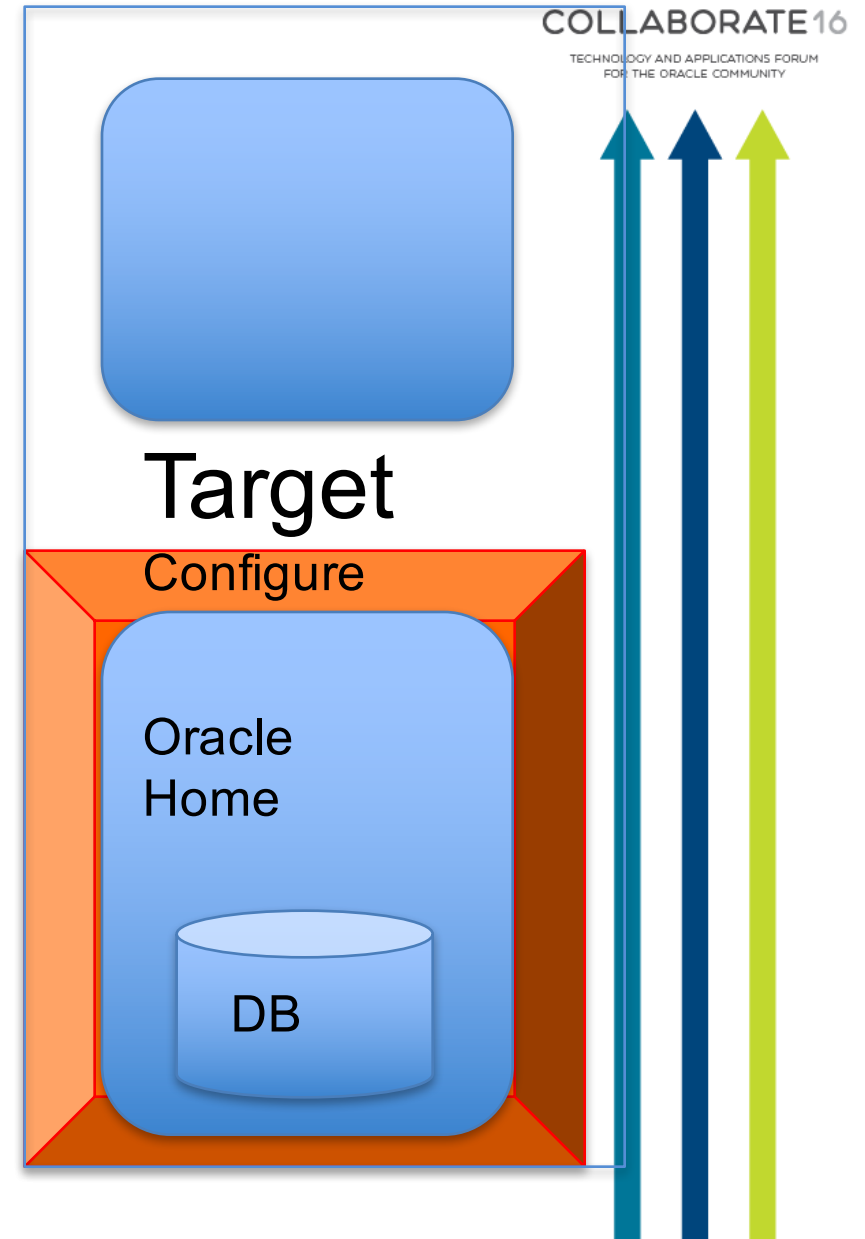
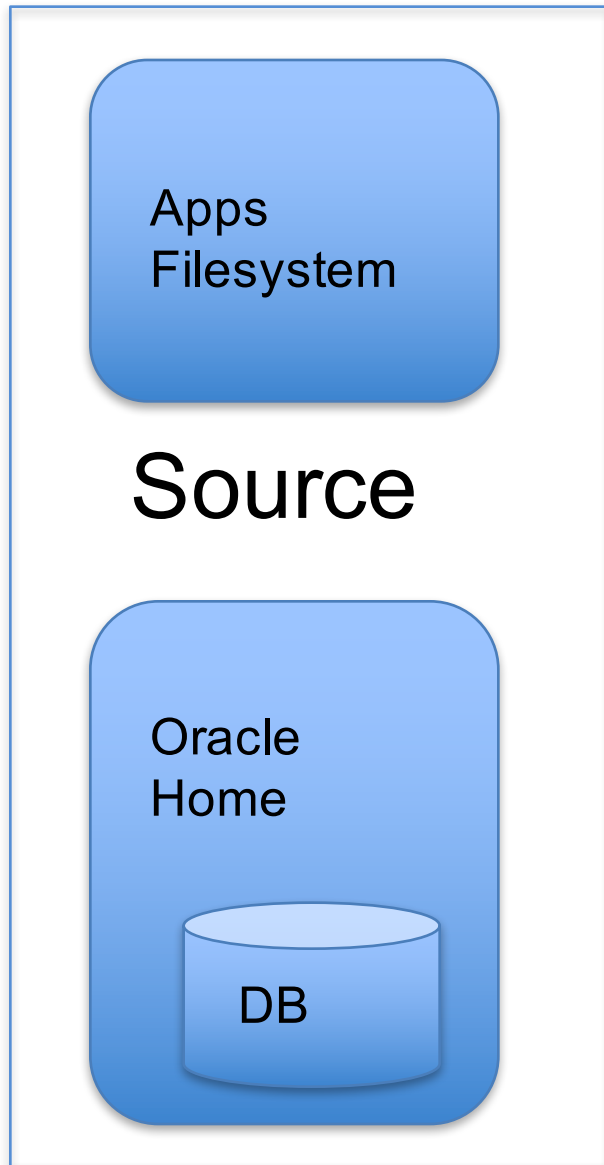
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Hot DB Clone



Hot DB Clone



Hot DB Clone



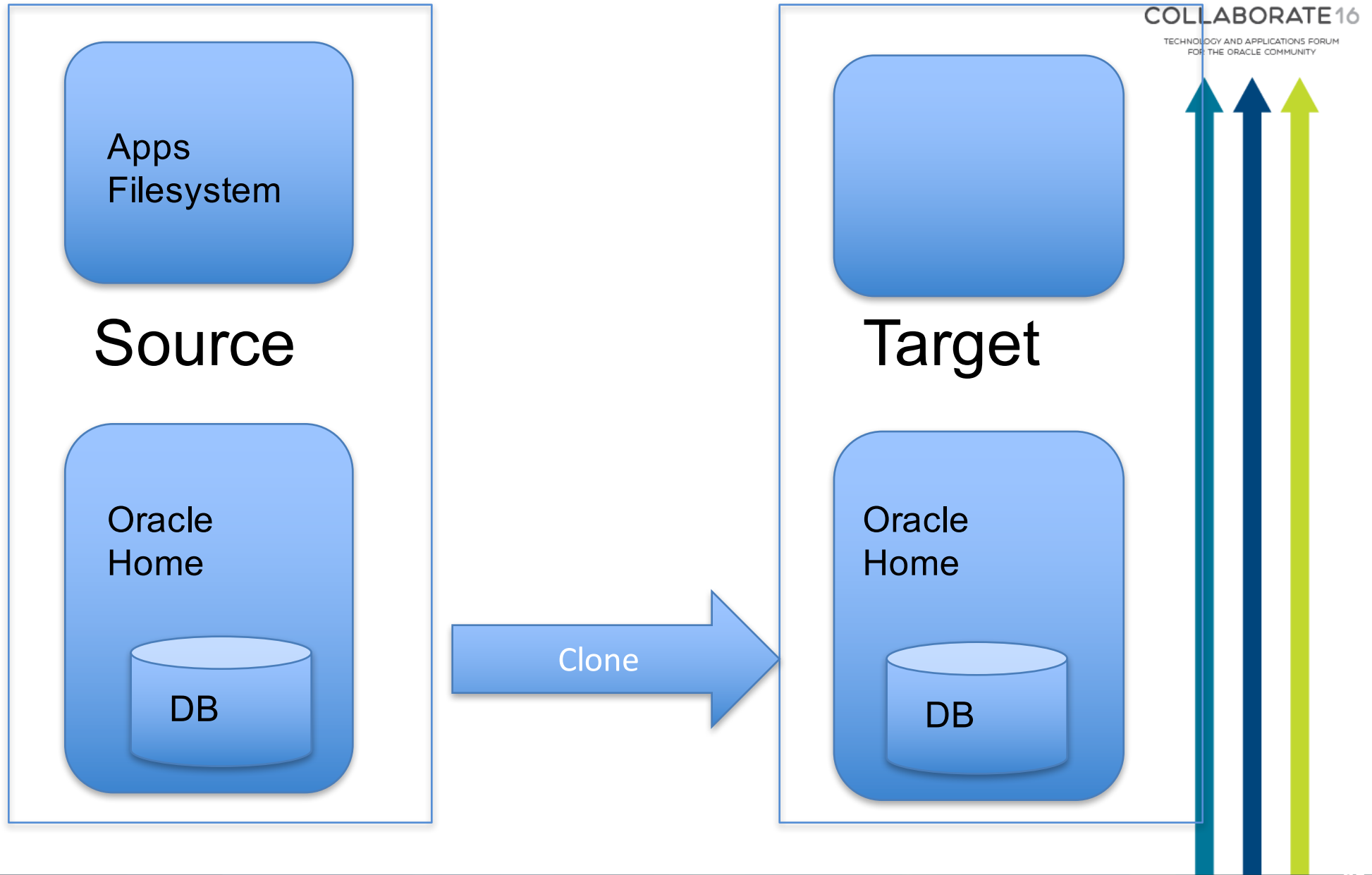
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- Set the dynamic library extension
 - cd
\$ORACLE_HOME/appstutil/install/\$CONTEXT_NAME
 - Sqlplus / as sysdba @adcfgclone so
- adcfgclone.pl dbconfig
\$ORACLE_HOME/appstutil/\$CONTEXT_NAME.xml
 - Configure the data for the target



Hot DB Clone





RMAN Duplicate

- Can be from backups or the active database
- **SUGGESTION:** At least one regular clone is from backup preferably with no connection to the source at all

```
set echo on;
```

```
connect auxiliary /
```

```
run {
```

```
  ALLOCATE AUXILIARY CHANNEL c1 device type disk;
```

```
  ALLOCATE AUXILIARY CHANNEL c2 device type disk;
```

```
  set until time "to_date('01-MAR-2015 13:00','DD-MON-YYYY  
HH24:MI')";
```

```
  duplicate database PROD DBID 3244314739 to "DEV"
```

```
  pfile="/u01/app/oracle/db/tech_st/11.2.0.3/dbs/initDEV.ora  
  a.dup" BACKUP LOCATION '/rman/prod';
```

```
}
```





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Other Hot Backup

- Common to all of these is the fact old school hot backup commands are used
 - ALTER DATABASE BEGIN BACKUP
 - ALTER DATABASE END BACKUPor
 - ALTER TABLESPACE XXX BEGIN BACKUP
 - ALTER TABLESPACE XXX END BACKUP
- Completely old school, copies
 - Switch to RMAN!!
 - MOS Note 224274.1 How to Make a Copy of an Open Database for Duplication to a Different Machine

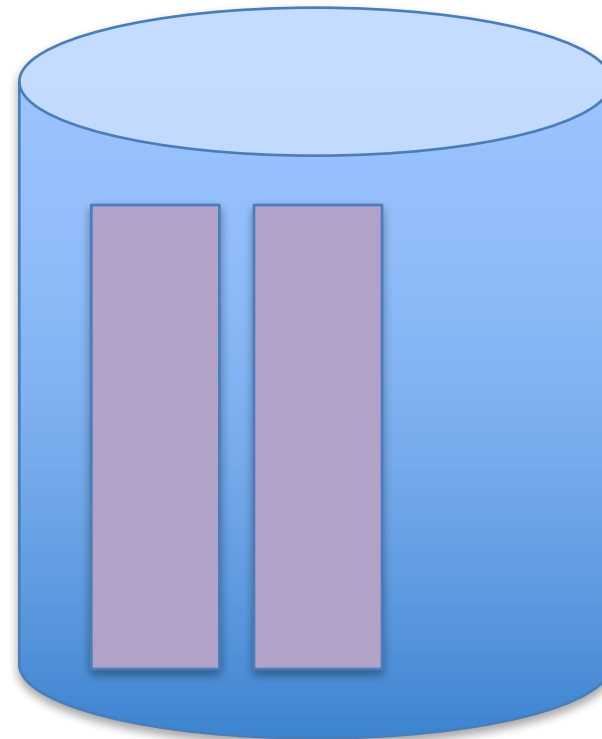
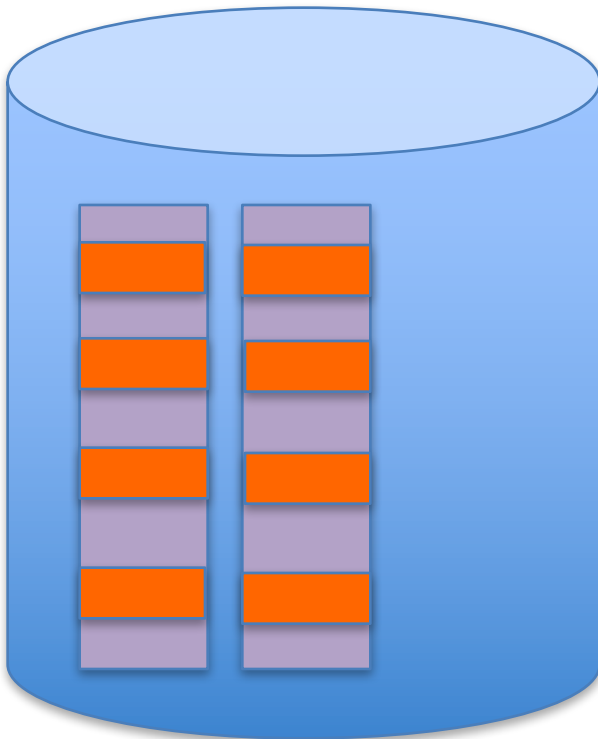
Disk Based Technologies



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- Beware Production Impacts!
- Split Mirrors
 - Best if your vendor supports differential resync (if you clone frequently)



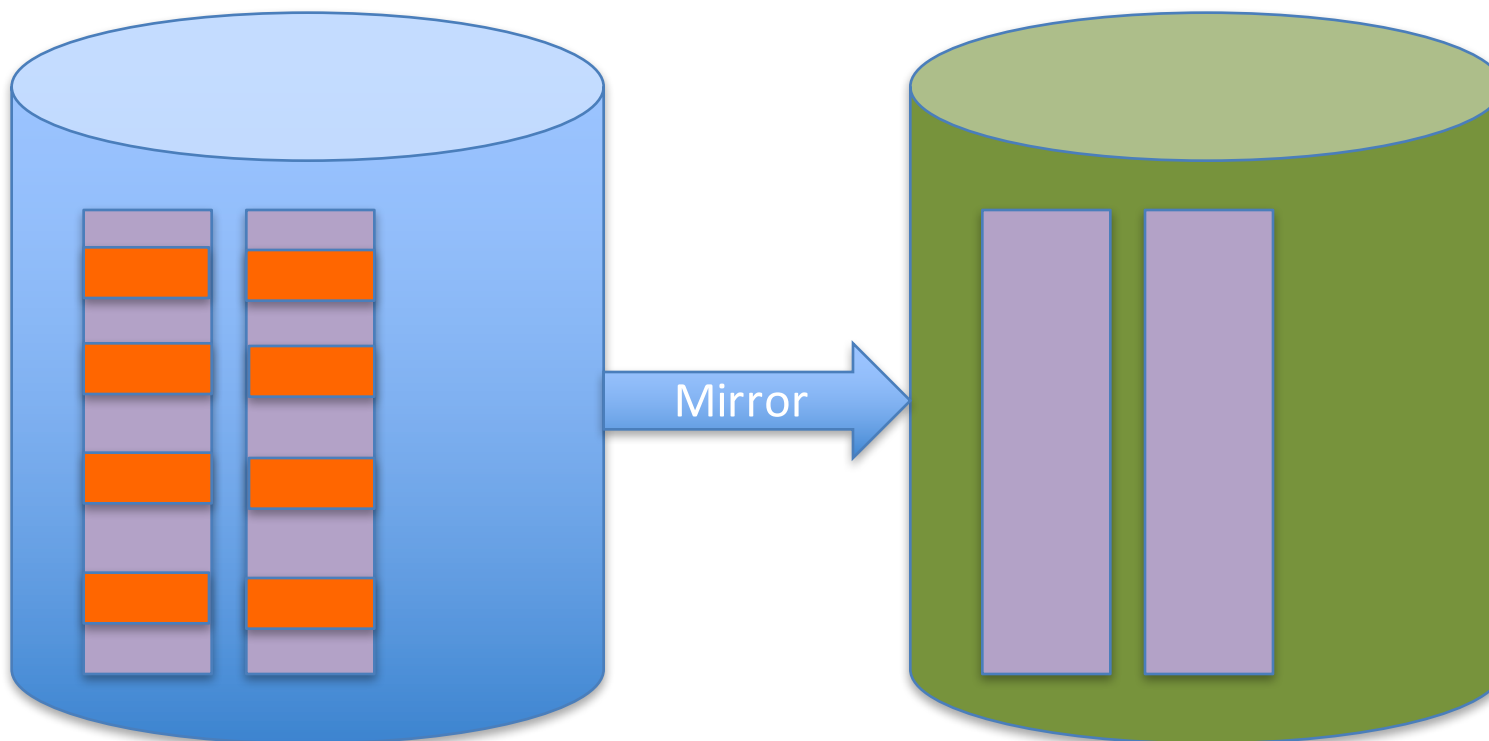


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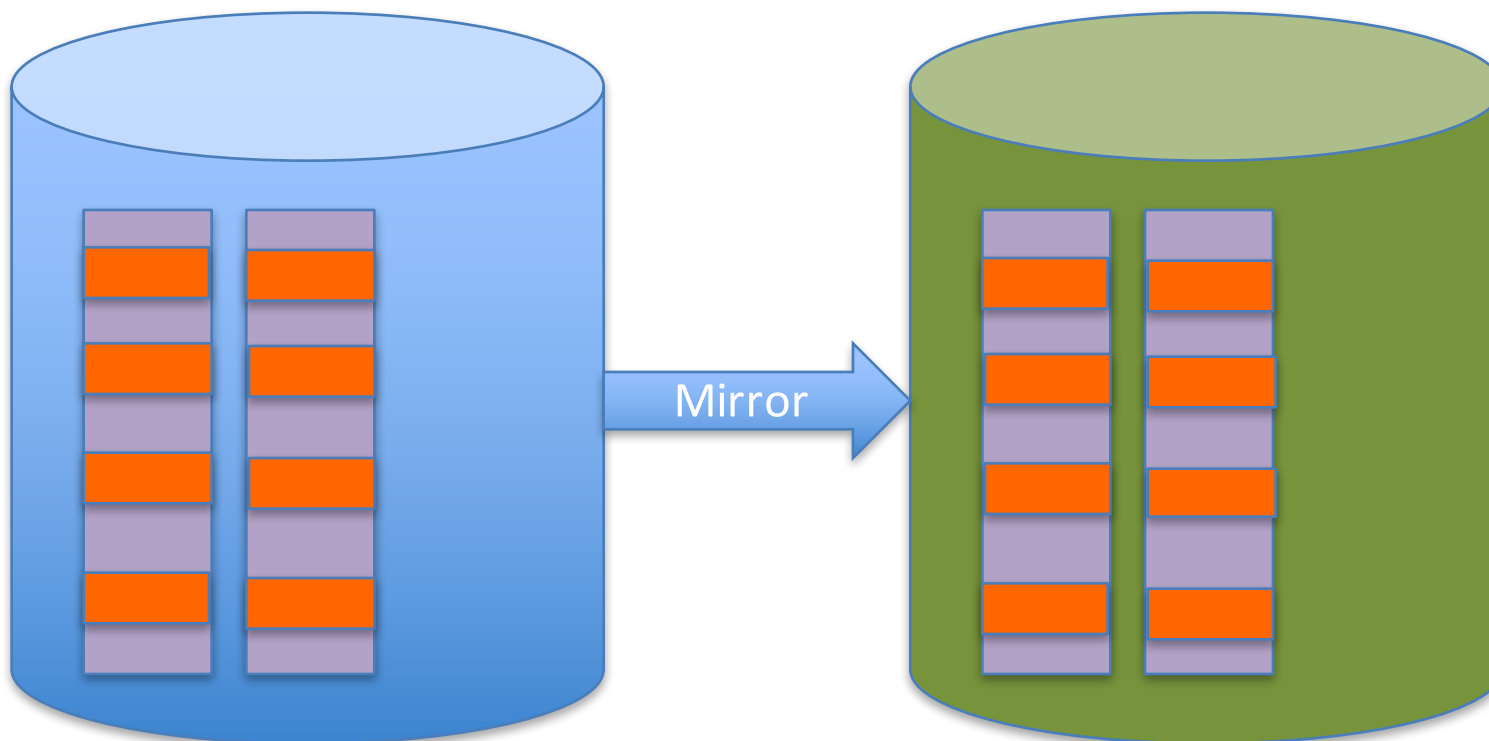


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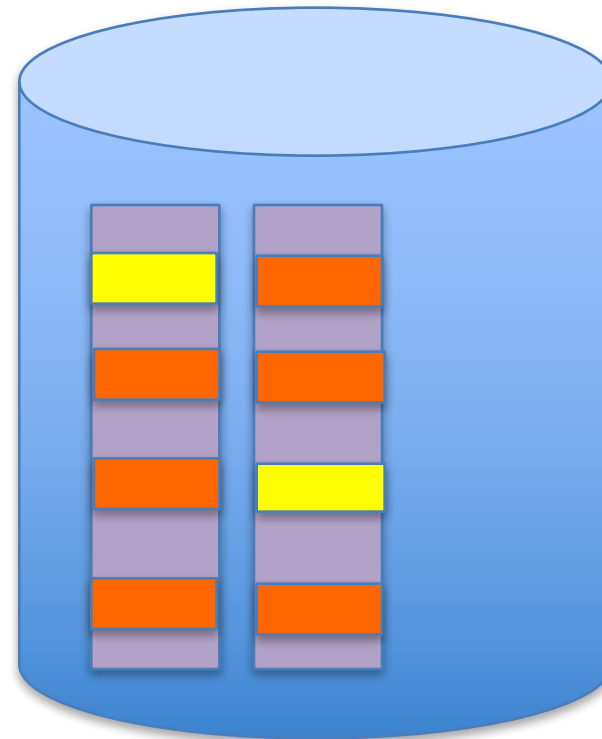
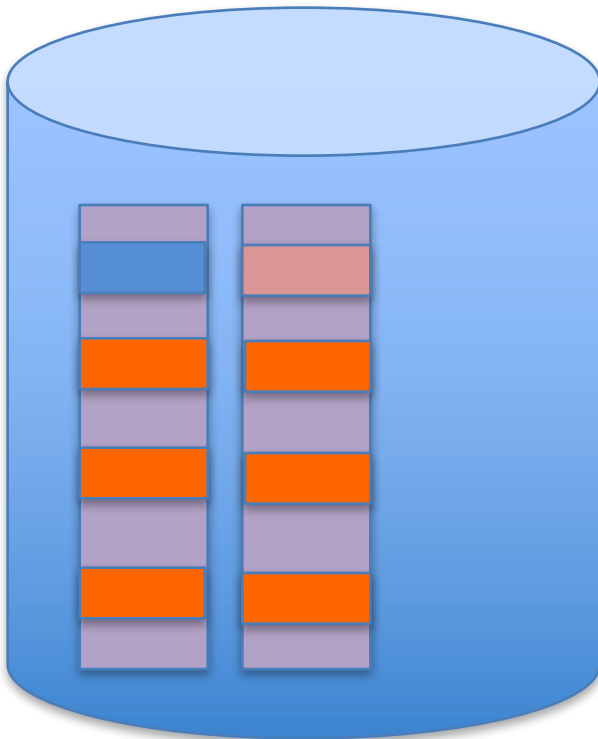
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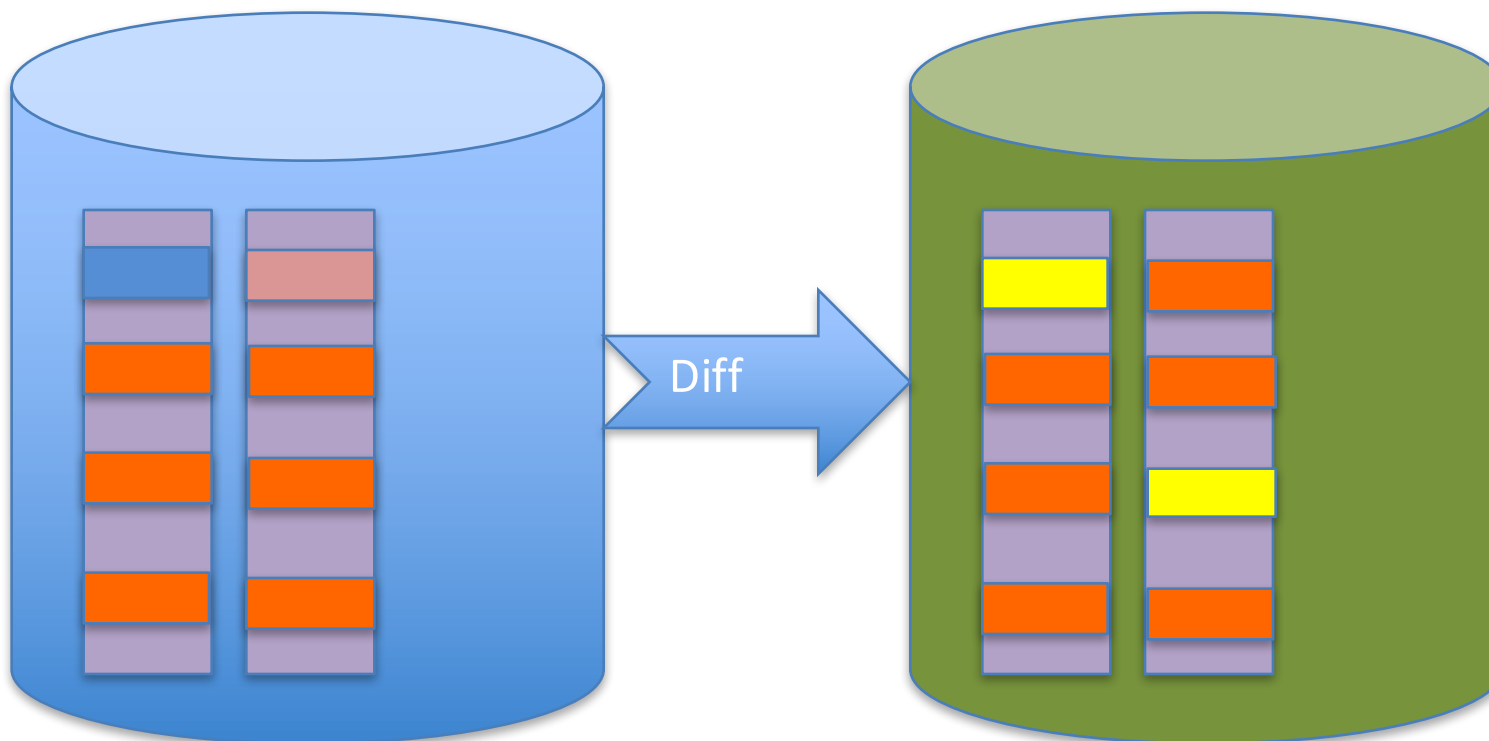


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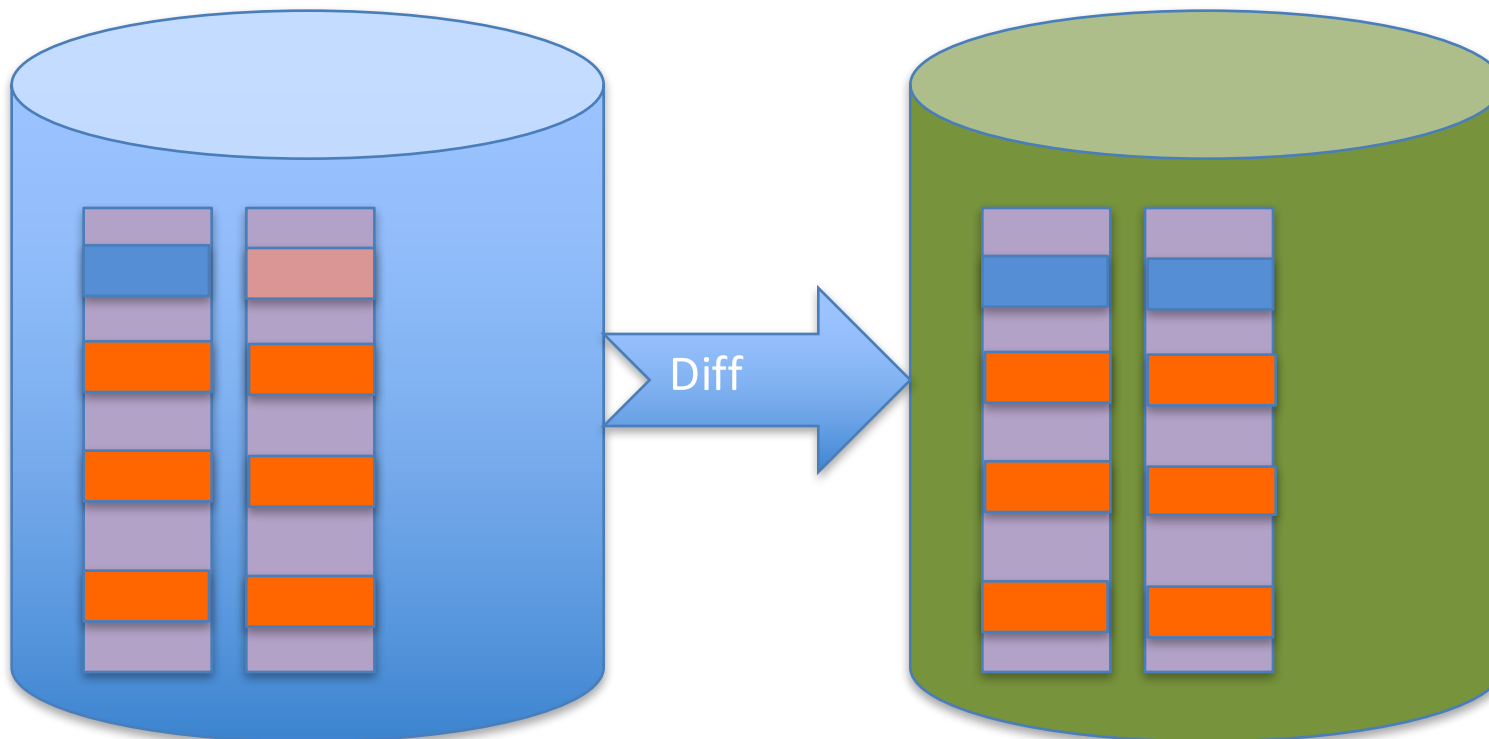


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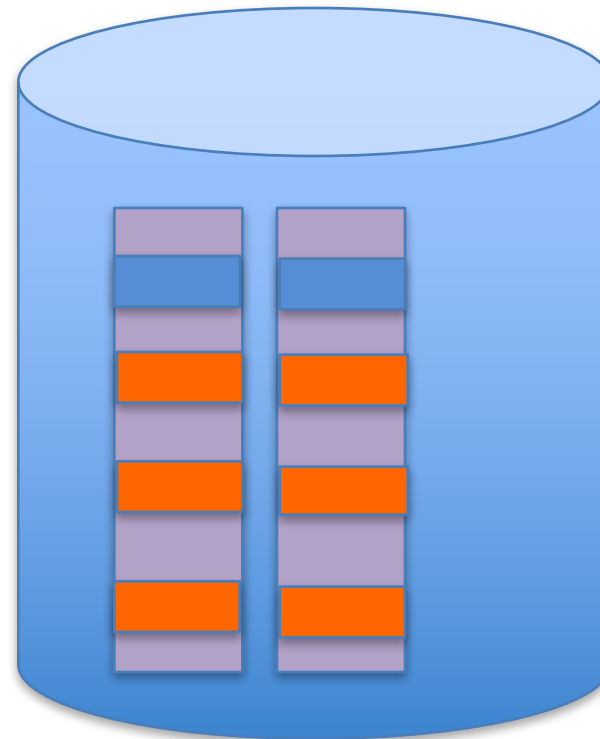
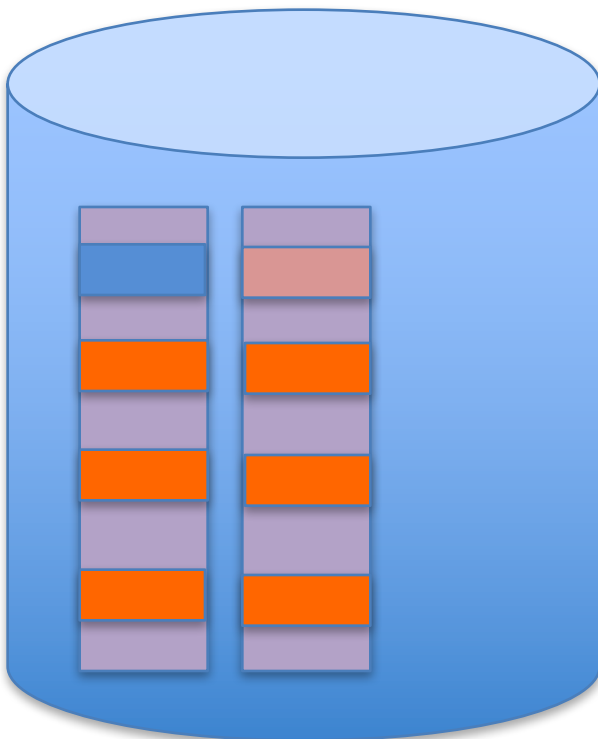
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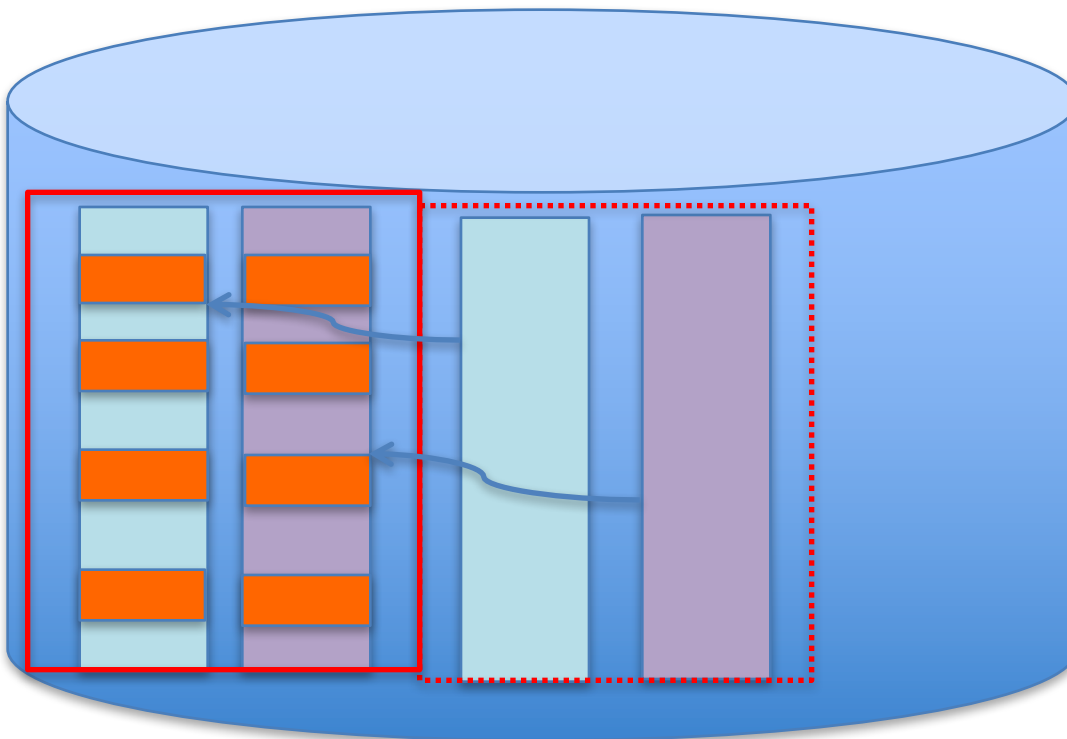
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- Beware Production Impacts!
- Snapshots
 - Reduced space requirements, quick to create
 - Must be read/write (copy on write)



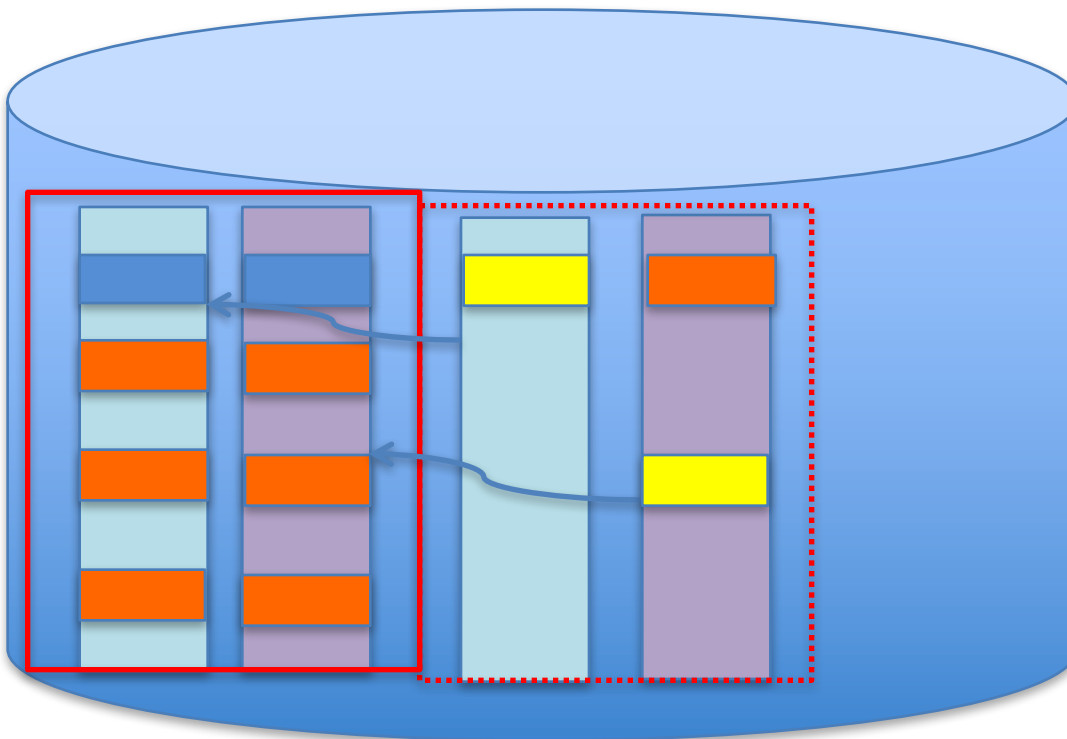
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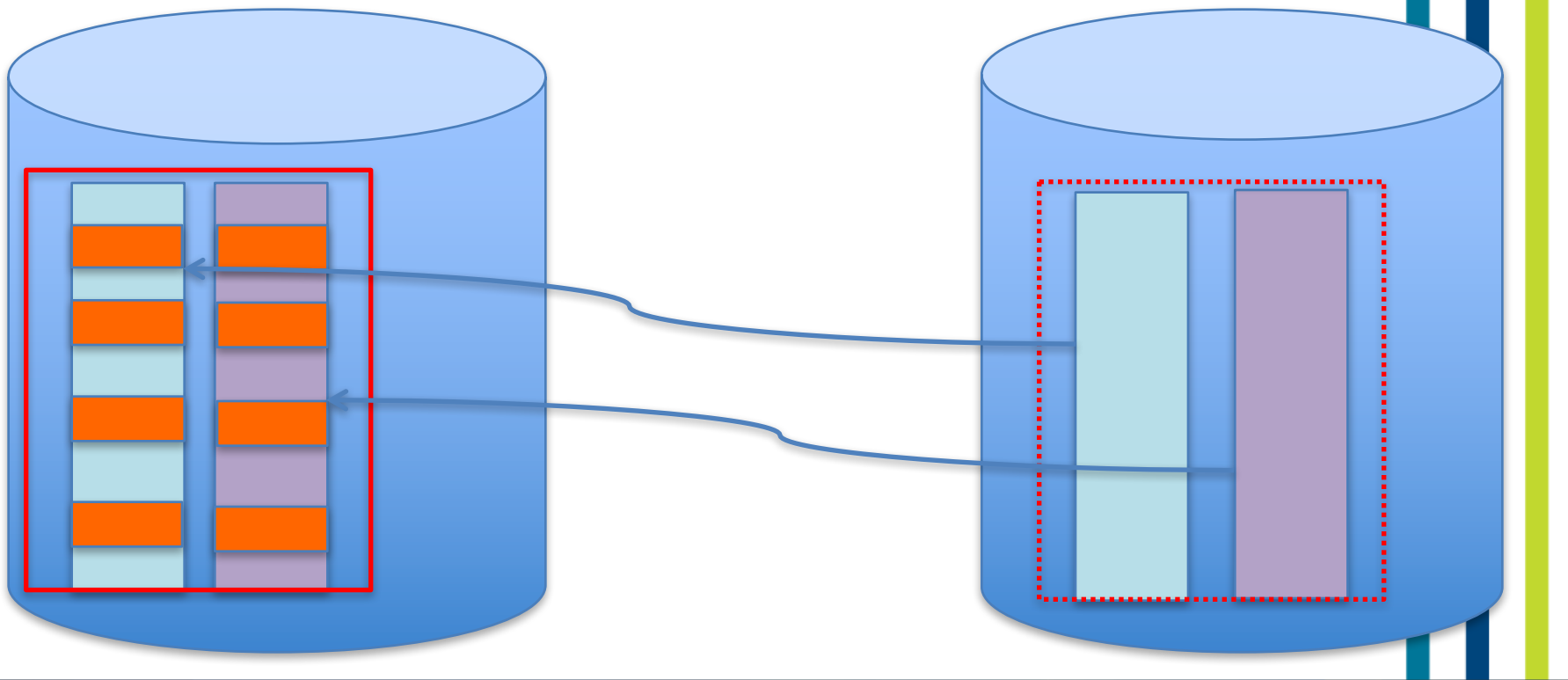


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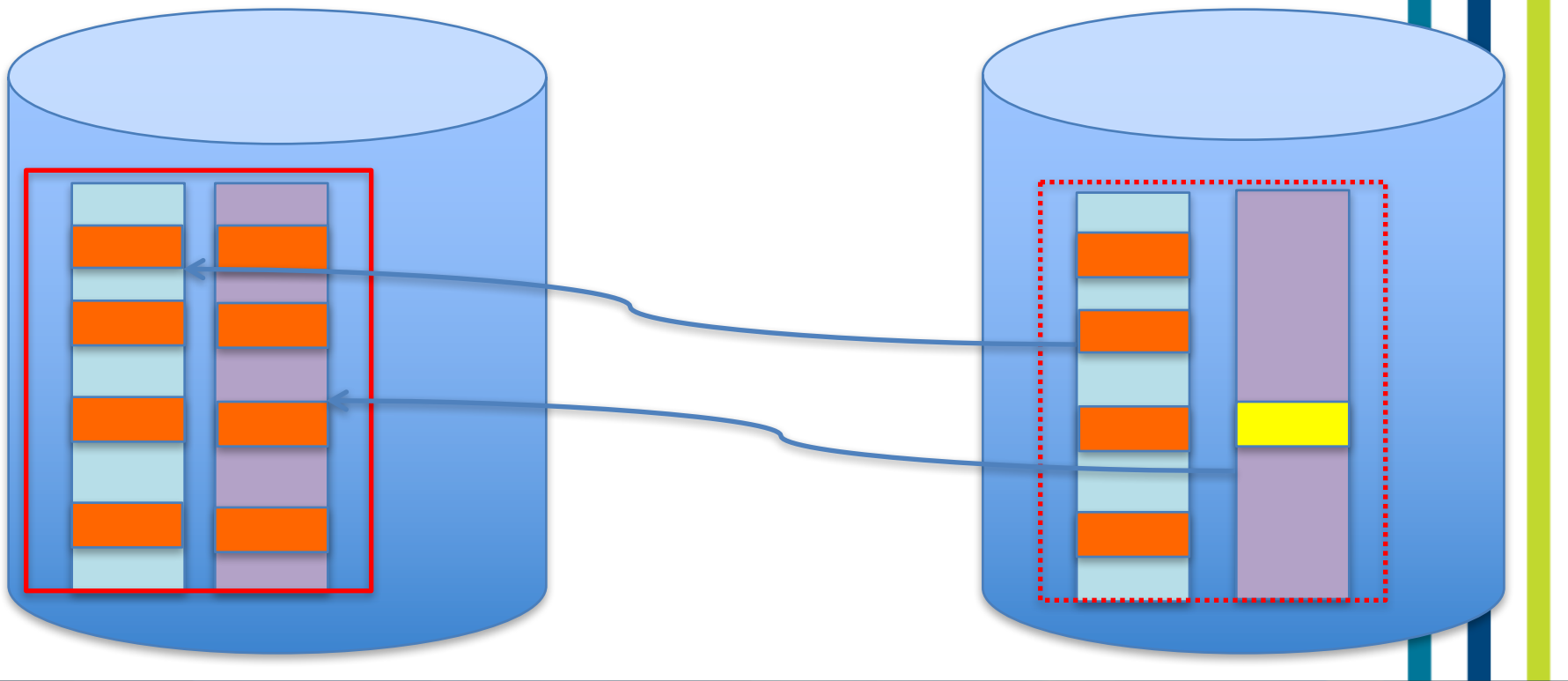
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- Beware Production Impacts!
- Snapshot Based Mirrors
 - Starts like snapshot, but automatically copies blocks in the background



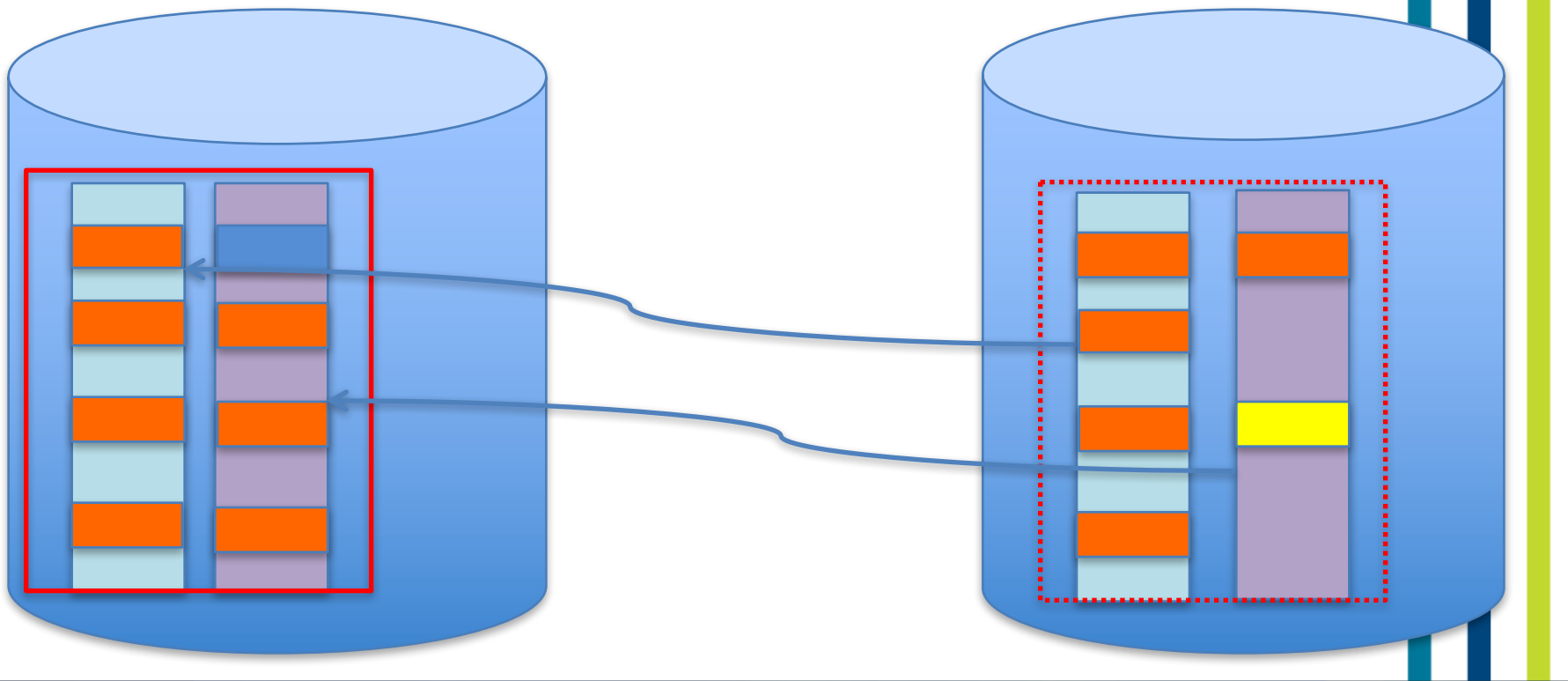
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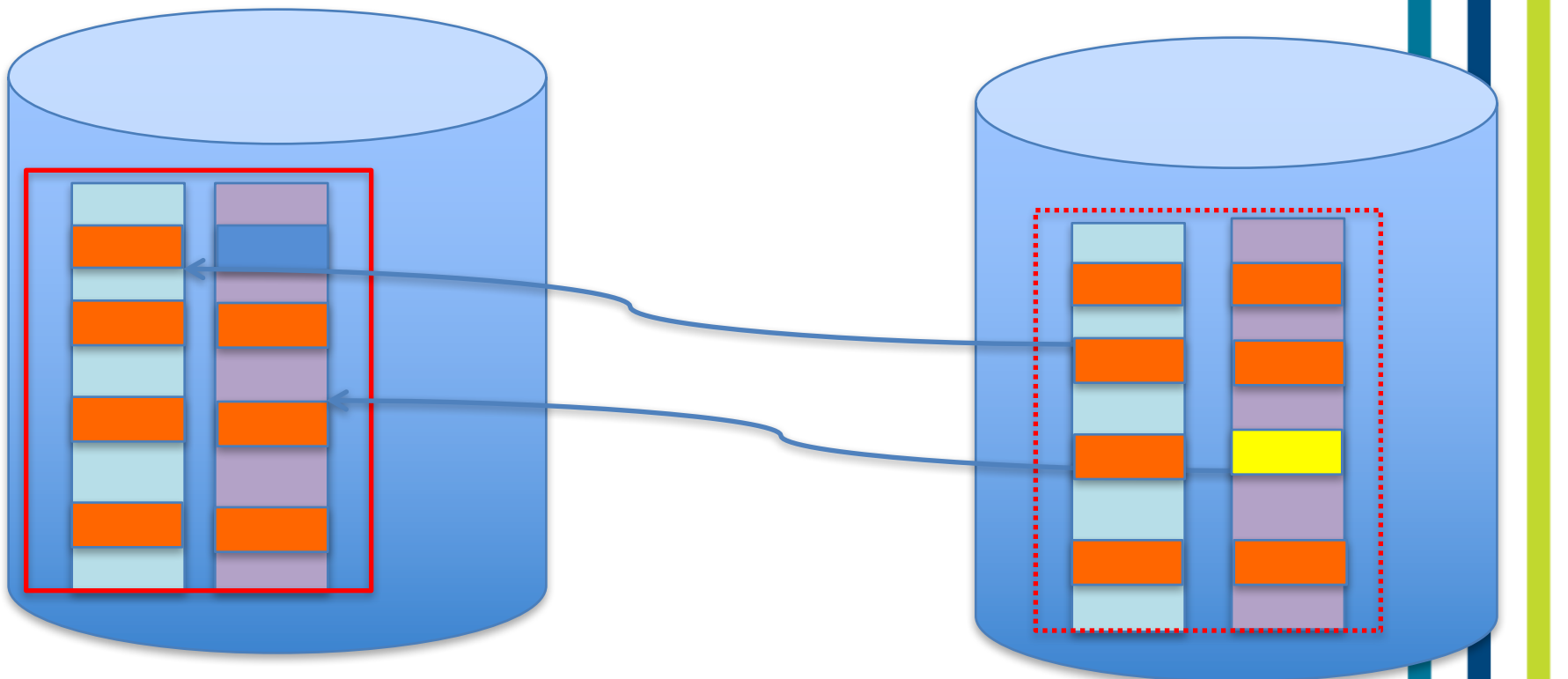
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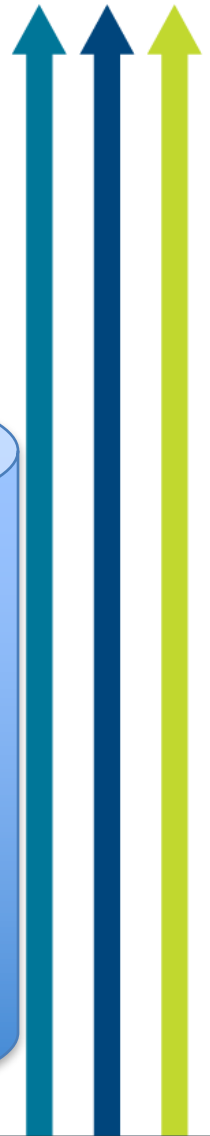
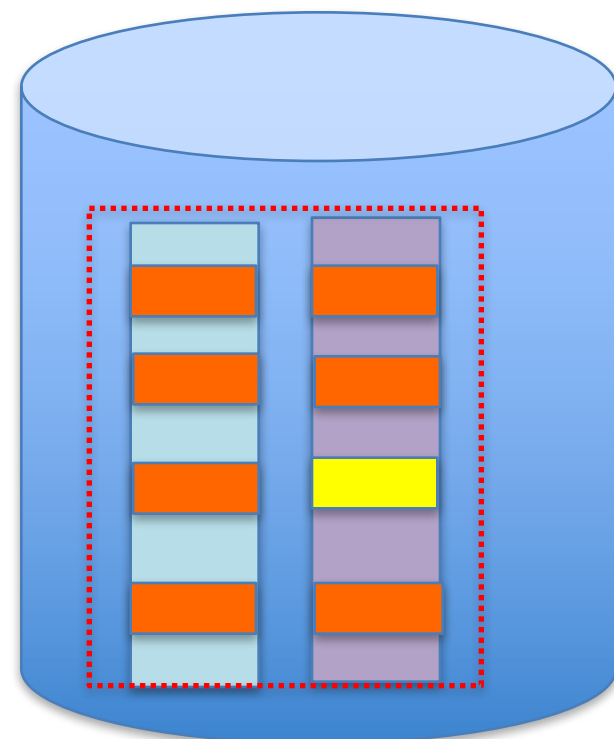
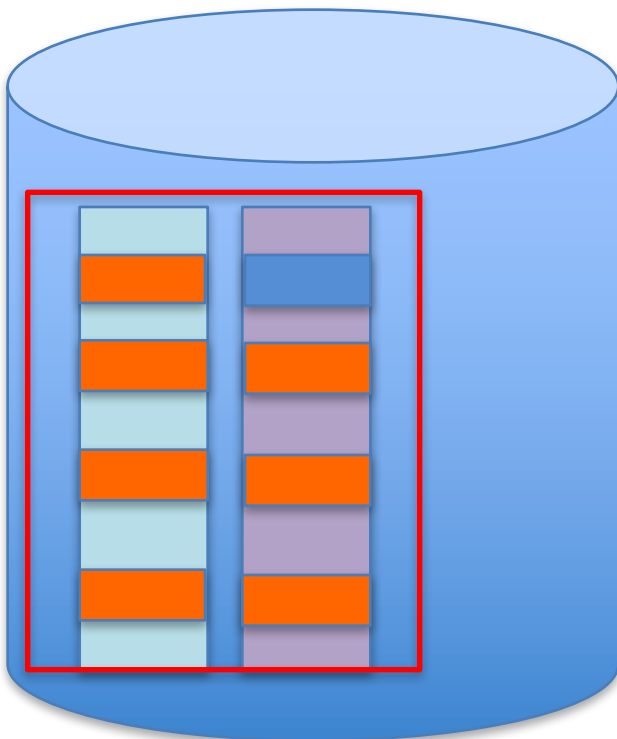
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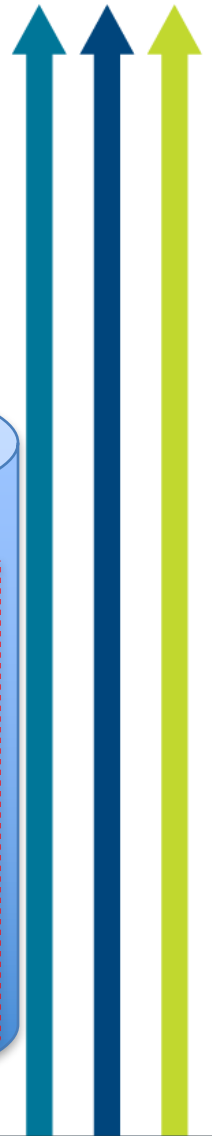
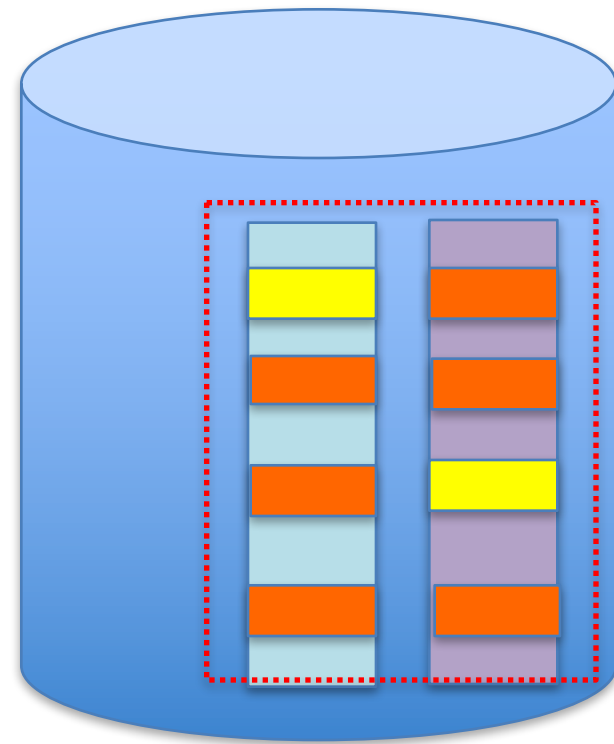
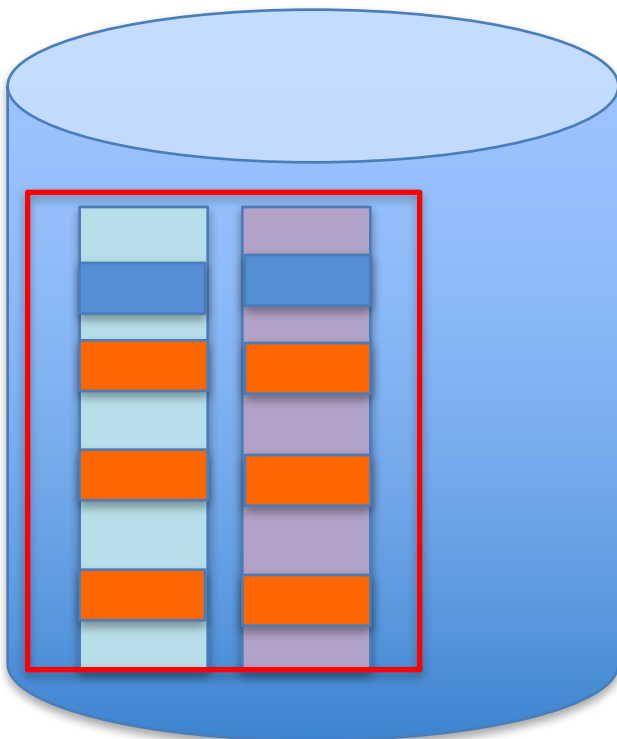
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Other Possibilities

- Snapshots off dataguard
- Delphix
 - zfs based appliance
 - I have not used and am not affiliated



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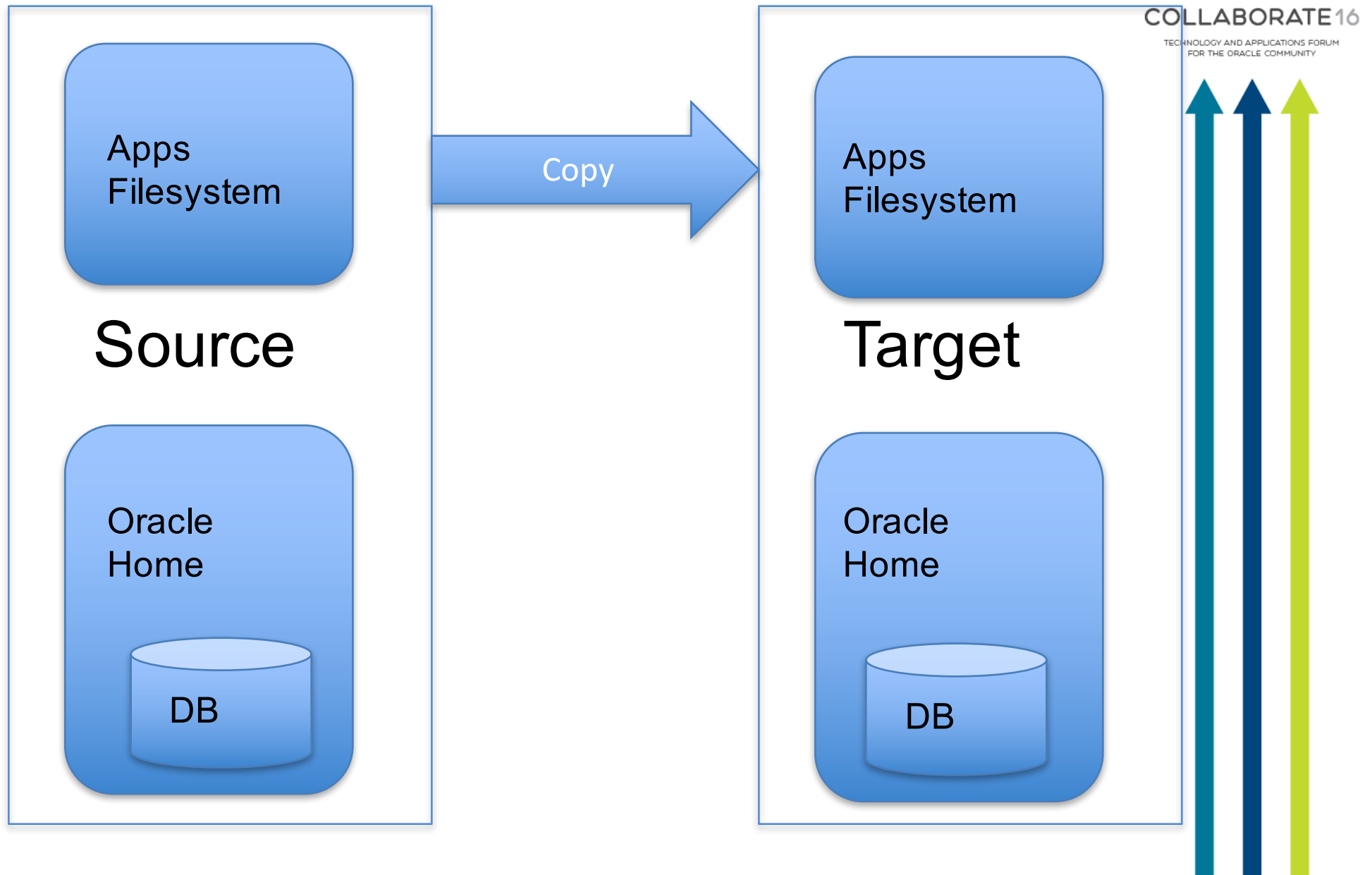


Applications Tier



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Applications Tier





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Applications Tier

- Copy the files
 - Must preserve symbolic links
 - 11i, 12.0, 12.1
 - APPL_TOP, COMMON_TOP, and tech stack
 - 12.2
 - APPL_TOP, COMMON_TOP, 10.1.2 tech stack from Run filesystem to fs1 on the target
- After copying the files
 - adcfgclone.pl appsTier
 - Need to use the same port pool you used with dbTechStack (or dbTier)
 - Need to have read/write access to one of the directories you gave for the dbTier
 - You will be prompted with a list of them
 - If on 12.2, AD-TXK delta 7
 - adcfgclone.pl appsTier dualfs
 - Do not have to do 12.2 finishing tasks



Finishing the 12.2 target

- Start the applications processes
- adpreclone.pl appsTier
 - Run filesystem (only one at this point)
- Copy the run filesystem to make fs2 for the patch filesystem
- Set your environment for the patch filesystem
- adcfgclone.pl appsTier
 - You will be prompted for the full path to the run filesystem context file.



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Finishing tasks

- Fix profile options
 - Rapid Clone will fix site level profiles, but it will miss things like a User level URL
- Update printers if required
- Fix Workflow
- Etc.



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References



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- My Oracle Support
 - 230672.1 *Cloning Oracle Applications Release 11i with Rapid Clone*
 - 406982.1 *Cloning Oracle Applications Release 12 with Rapid Clone*
 - 1383621.1 *Cloning Oracle E-Business Suite Release 12.2 with Rapid Clone*
 - 224274.1 *How to Make a Copy of an Open Database for Duplication to a Different Machine*



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Questions

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<http://blog.michael-brown.org>