Applies to:
SAP Solution Manager SR3 ABAP+JAVA on Oracle Windows. For more information, visit the Application Management homepage.

Summary
This document describes Homogeneous system copy procedure that is based on database-specific methods. As of SAP NetWeaver 2004s you can copy ABAP systems, ABAP+JAVA systems and Java systems in one run using either database-specific methods or database independent methods.

Author: Uday Kumar

Company: Intelligroup Asia Pvt Ltd.

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Author Bio
Uday Kumar is working as an SAP Consultant with Intelligroup Asia since September 2007. He is good at Netweaver, Solution Manager, and EP administration.
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Method Followed
Database-specific method

Advantages
- You can use existing offline or online backups
- This method is faster than the R3load and Jload method

Documents Referred and Validity
- System Copy for SAP Systems Based on SAP NetWeaver 7.0 ABAP+JAVA.pdf
- Note 1120872 - Hom./Het.System Copy SAP NetWeaver 7.0 SR3
- Note 831812 - Config Tool shows incorrect parameters after System Copy

Caution
This document does not cover all the pre and post activities steps, please refer system copy guide

Software Requirements

<table>
<thead>
<tr>
<th>DVD Material used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Number</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

Source system preparations
Creating Offline backup of source system preferably a backup on disk
Edit the Configuration files of oracle
initSID.sap which is located at E:\oracle\SID\102\database

Change the parameter backup_dev_type to disk and backup_root dir to directory where you would like to have your database backup and stage value as well.
Open a command and run the below command for offline backup brbackup -u / -c force -t force -m all

```
E:\brbackup -u / -c force -t offline_force -m all
```
For parameter mode choose custom

Parameter Mode > Default Settings

Choose whether you want to run the SAPinst in a typical or a custom mode

Default Settings
If you choose the typical setting, SAPinst runs mostly with automatic default settings. You only have to reenter a number of prompts. However, you can still change any of the default settings on a parameter summary.

Provide the path of Profile Directory (Source system)

SAP System Parameters

Profile Directory:

Additional Information
SAPinst retrieves existing parameters from the SAP system profile directory. Location of your SAP system profile directory:

- Windows: `\<SAPGLOBALHOST>\apart\<SAPSID>\SYS\profile`
- UNIX: `/<SAP System Mount Directory>/SAPSID/profile`
- OS/400: `\<SAPGLOBALHOST>\saprnt\<SAPSID>\SYS\profile`

Provide OS user Passwords
**SAP System > OS User Passwords**

Enter the passwords of the operating system users

**SAP System Administrator**

Account: intelprodadm

Password of SAP System Administrator: ******

Check the box Use database specific tools

**System Copy Method**

Use database specific tools: 

Create a directory for the Database export (whatever you like) and provide the path of the directory at this stage SAP system will be stopped

**Database Export**

Export Location: D:\N6Pbackup\exportdirectory

Stop running system: 

Chose start at the end to proceed the export

**Parameter Summary**

Choose 'Start' to start with the values shown or select the parameters you want to change and choose 1

Export is in progress

Phase 4 of 5

Phase List

- Database and Central Instance Export
- Update system DLLs
- Prepare to export Java
- Export from Java central instance
- Archive Adobe Document Services data

All Phases have been completed
Generating the Control File Structure

Purpose:

The OraBRCopy Java tool writes a file CONTROL.SQL to the current working directory this can be used without further adaptations on target system.

Recommendations

We recommend that you shut down the SAP system before you perform the following steps. The database must still be running.

Where to find that

Copy the ORABRCOPY.SAR archive from the SAP Installation Master DVD to the installation directory and extract it using SAPCAR.

You can find the archive in the following directory on the Installation Master DVD:

```
DVD_DIR>:common\install\ora\ORABRCOPY.SAR
```

Uncar the file ORABRCOPY.SAR using sapcar command:

```
sapcar -xvf ORABRCOPY.SAR
```

When uncared you could see below files with OraBRCopy.pdf
Starting the OraBRCopy Java Tool

OraBRCopy tool need to be executed as OS user with Oracle DBA privileges user

Ora<dbsid> or user <sapsid>adm

Switch the directory to where ORABRCOPY.SAR is uncared and execute the below command as mentioned in OraBRCopy user Guide

`ora_br_copy.bat -generateFiles -forceLogSwitches -targetSid <Target_SID> -password <system_user_password> -listenerPort 1527`

After the execution of the command, the tool created the below files

- CONTROL.SQL
- CONTROL.TRA
- `init<TARGET_DBSID>.ora`
- `ora_br_copy.log`
- `OraBRCopy.console.log`

Note if error occurs check the log file `<INSTDIR>/ora.brcopy.log`
Preparing the Target System

This section describes the actions which have to be taken on the Target System. If necessary, make a copy of your profiles, a copy of the environment settings of your sidadm and oracle user and your ORA sqlnet files.

- If necessary, make a copy of your profiles, a copy of the environment settings of your sidadm and oracle user and your ORA sqlnet files.
- Take the backup of config tool so that you can get back the old parameter values later.
- Make sure to copy the backup dump of the source system to target system and can be accessible.
- If an SAP instance is currently installed on the target server then first remove it.
- Clean your target system. Delete your oracle datafiles.
- You must use the same Oracle release and patch level for your database in the source and target system.
- Make sure that JDK version same as source system.
- The JAVA_HOME environment variable must point the JRE directory.
- The source and target systems must run on different hosts for security reasons.
- The source and target systems must be binary compatible.
- Install the target SAP system using SAPInst.
- Install same JDK version as source.
- Install same Oracle version and path set as source system.

Copy Contro.sql, control.trc, initSID.ora file and

<table>
<thead>
<tr>
<th>Address</th>
<th>D:\N6\backup\Orabr copy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Size</td>
</tr>
<tr>
<td>CONTROL.SQL</td>
<td>3 KB</td>
</tr>
<tr>
<td>CONTROL.TR C</td>
<td>4 KB</td>
</tr>
<tr>
<td>initPRD.ora</td>
<td>2 KB</td>
</tr>
<tr>
<td>ora_br_</td>
<td>2 KB</td>
</tr>
<tr>
<td>ora_br_</td>
<td>3 KB</td>
</tr>
<tr>
<td>ora_br_</td>
<td>0 KB</td>
</tr>
<tr>
<td>ora_br_</td>
<td>2 KB</td>
</tr>
</tbody>
</table>

Paste it at target system oracle home directory Drive:\oracle\SID\102\database.

<table>
<thead>
<tr>
<th>Address</th>
<th>E:\oracle\PRD\102\database</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Size</td>
</tr>
<tr>
<td>archive</td>
<td>File Folder</td>
</tr>
<tr>
<td>oradba.exe</td>
<td>31 KB</td>
</tr>
<tr>
<td>initN6i.p sap</td>
<td>22 KB</td>
</tr>
<tr>
<td>CONTROL.TR C</td>
<td>4 KB</td>
</tr>
<tr>
<td>initPRD.ora</td>
<td>2 KB</td>
</tr>
<tr>
<td>CONTROL.SQL</td>
<td>3 KB</td>
</tr>
</tbody>
</table>

Copy initSID.sap file from source system backup file to ORACLE_HOME directory and edit the file to target system SID.
Replace source system SID to Target system SID

```
# backup mode [all | all_data | full | incr | sap_dir | ora_dir
# | all_dir | <tablespace_name> | <file_id> | <file_id1> - <file_id2>
# | <generic_path> | <object_list>]
# default: all
backup = all
```

Replace source system SID to Target system SID

See that backup_dev_type should be disk if not change to disk

```
backup_dev_type = disk
```

Backup_root_dir and stage_root_dir should point towards your source system backup directory

Save the changes at the end
Target system Installation

Start SAPinst Choose the following path:

Additional Software Life-Cycle Tasks->system copy Oracle->Target System->Central System>Based on AS ABAP and AS JAVA->Central system installation

Select the service that you want to install

- SAP Solution Manager 4.0 Support Release 3
  - SAP Systems
  - Additional Software Life-Cycle Tasks
    - Additional Preparation Tasks
    - Application Server
    - Database Tools
    - Java Add-In for ABAP
    - System Copy
      - IBM DB2 for Linux, UNIX, and Windows
      - IBM DB2 for z/OS
      - MaxDB
      - MS SQL Server
      - Oracle
  - Target System
    - Central System
      - Based on AS ABAP and AS Java

Choose parameter Mode Custom

Parameter Mode > Default Settings

Choose whether you want to run the SAPinst in a typical or a custom mode

- Default Settings
  If you choose the typical setting, SAPinst runs mostly with automatic default settings. You only have to respond to a number of prompts. However, you can still change any of the default settings on a parameter summary.

  Parameter Mode  
  - Typical
  - Custom

Provide the path for the java component

- Software Package(s)
  - Media Name  Package Location
  - Java Component  SOLMAN40SR3  D:\SolmanSR3\SOLMANSR working set\Java

Provide the path for the JDK installed directory
Java Development Kit

SAPinst has found a valid JDK directory. The installed JDK has version 1.4.2_17. Confirm that you want to use this JDK directory.

| JDK Directory | C: \ jdk1_4.2_17-x64 |

Provide the target system SID and installation Drive

**SAP System Parameters**

<table>
<thead>
<tr>
<th>SAP System ID (SAPSID)</th>
<th>PRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation Drive</td>
<td>E:</td>
</tr>
<tr>
<td>Unicode System</td>
<td>✔</td>
</tr>
</tbody>
</table>

Select Local installation

**SAP System User Domain**

<table>
<thead>
<tr>
<th>Domain Model</th>
<th>Local installation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use domain of current user</td>
</tr>
<tr>
<td></td>
<td>Use different domain</td>
</tr>
</tbody>
</table>

| Windows Domain |

Select installation method as Homogeneous system copy (Backup/Restore)

**Database Installation**

<table>
<thead>
<tr>
<th>Installation Method</th>
<th>Standard System Copy / Migration (load-based)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Homogeneous System Copy (Backup/Restore)</td>
</tr>
</tbody>
</table>

| Start Migration Monitor manually | ☐ |

Select the database SID of Target system

**Database Parameters**

<table>
<thead>
<tr>
<th>Database ID (DBSID)</th>
<th>PRD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database Host</td>
<td>intel</td>
</tr>
</tbody>
</table>

**Additional Information**

If you want to use an existing database with a valid database release for this installation, enter the database name:

Error occurred
As per the note: Note 1120872

Error during system copy with Oracle-specific procedure

During a system copy with the Oracle-specific procedure, the following error may occur:


FJS-00003 Reference Error: row is not defined (in script NW_Java_DB|ind|ind|ind|ind, line 90323: ???)

ERROR 2007-01-04 21:48:25

FCO-00011 The step checkForLoadType with step key |NW_CreateDB|ind|ind|ind|ind|0|0|NW_CreateDB|ind|ind|ind|ind|0|0|NW_CreateDB|ind|ind|ind|ind|0|0|checkForLoadType was executed with status ERROR.

Solution:

Edit the control.xml in the installation directory, Search for "update ORACHECK_PAR" and delete the row "row.createDb = false;" underneath

Check the installation directory sapinst_instdir for control.xml file and open the file with WordPad

Search for "update ORACHECK_PAR"

Remove the entry oracom.setCreatedb(false) and save the file at the end and retried the installation at everything went fine

```java
   gui.update("Oracle Backup Restore...");

   // update ORACHECK_PAR
   row.createDb = false;
   context.set("createDb",false)
   oracom.setCreateDb(false);
```
Enter the ABAP Schema id by default it will be SAPSR3 and for Java Schema SAPSR3DB for all latest releases

**Database Instance Parameters**

<table>
<thead>
<tr>
<th>DB Home</th>
<th>E:\oracle\PRD\102</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB Server Version</td>
<td>102</td>
</tr>
</tbody>
</table>

**Instance Memory**

| Instance RAM [MB] | 2942               |
| Total RAM [MB]    | 4895               |

**Database Schema Parameters**

The new default for ABAP Schema is SAPSR3 and the new default for Java Schema is SAPSR3DB.

- ABAP Schema: SAPSR3
- Password of ABAP Schema: **********
- Confirm: **********
- Java Schema: SAPSR3DB
- Password of Java Schema: **********

Provide the installation drive for SAPDATA

**Database Server Drives**

<table>
<thead>
<tr>
<th>Drive for sapdataHome</th>
<th>E:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive for Oracle Archives (oraarch)</td>
<td>E:</td>
</tr>
</tbody>
</table>

**Local Drives**

<table>
<thead>
<tr>
<th>Drive</th>
<th>Free Space [MB]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E:</td>
<td>107200</td>
</tr>
<tr>
<td>D:</td>
<td>30590</td>
</tr>
<tr>
<td>C:</td>
<td>14490</td>
</tr>
</tbody>
</table>

Provide the required passwords

**Oracle Database Users**

- Password of 'sys': **********
- Confirm: **********
- Password of 'system': **********
- Confirm: **********

Provide the required instance numbers

**Detected SAP System Instances**

SAPinst found the following SAP system instances on this host:

<table>
<thead>
<tr>
<th>SAP System ID (SAPSID)</th>
<th>Instance Number</th>
<th>Instance Name</th>
</tr>
</thead>
</table>

**Central Instance Parameters**

- Central Instance Number: 00

**SCS Instance Parameters**

- SCS Instance Number: 01

Leave it default
Enter the Migration Export of the Java source system

**Software Package(s)**

<table>
<thead>
<tr>
<th>Media Name</th>
<th>Package Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migration Export</td>
<td>D:\N6Pbackup\exportdirectory\JAVA\LABEL_ASC</td>
</tr>
</tbody>
</table>

Enter the J2ee admin user name and password

**Existing J2EE Engine**
Enter name and password of the J2EE Engine administrator user of the source system N6P. This account is used to log on to the source system.

- **Administrator User**: j2ee_admin
- **Password of Administrator User**: ********
- **Confirm**: ********

Enter SDM password

**SDM Server Connection**

- **Password for SDM**: ********
- **Confirm**: ********

**Additional Information**
The password of SDM that is entered here is needed to connect the SDM GUI to the SDM server.

Enter DDIC password

**DDIC Users in SAP System Clients**

- **Account**: DDIC, client 000
- **Password of DDIC in client 000 in the source system**: ********

**Additional Information**
SAPInst needs to create an RFC connection to the system that you are installing. A SAP System Client is a self-contained unit in an SAP system with separate master records and its own data is SAP System Client specific.

Provide the patch for software package kernel and Oracle client

**Software Package(s)**

<table>
<thead>
<tr>
<th>Media Name</th>
<th>Package Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kernel NW70</td>
<td>D:\SolmanSR3\SOLMANSR working set\kernel\KU_WINDOWS_X86</td>
</tr>
<tr>
<td>Oracle Client</td>
<td>D:\oracle64bit\51033272_CLIENT</td>
</tr>
</tbody>
</table>

Parameter summary proceed to start the installation
Installation is in progress

At phase 10 Backup/Restore database installation stops and you need to restore your database from your offline backup of your source system now

**Note:**

Don’t close this window session

Task is running

Now copy CONTROL.SQL file and paste it at Installation directory sapinst_instdir
There is no change of source and target system file structure in my scenario if there is any changes in your scenario edit the files accordingly as per your file structure of sapdata/origlogs/mirrorlogs. If your Target system is new system build then create the following directories accordingly.

Windows:

- `<drive>:\oracle\<TARGET_DBSID>\mirrlog<xxx`
- `<drive>:\oracle\<TARGET_DBSID>\origlog<xxx`
- `<drive>:\oracle\<TARGET_DBSID>\sapdata<xxx`
- `<drive>:\oracle\<TARGET_DBSID>\sapreorg`
- `<drive>:\oracle\<TARGET_DBSID>\saparch`
- `<drive>:\oracle\<TARGET_DBSID>\oraarch`
- `<drive>:\oracle\<TARGET_DBSID>\saptrace`
- `<drive>:\oracle\<TARGET_DBSID>\saptrace\background`
- `<drive>:\oracle\<TARGET_DBSID>\saptrace\usertrace`
- `<drive>:\oracle\<TARGET_DBSID>\origlogA\cntrl`
- `<drive>:\oracle\<TARGET_DBSID>\sapdata\cntrl`
- `<drive>:\oracle\<TARGET_DBSID>\saparch\cntrl`
- `<drive>:\oracle\<TARGET_DBSID>\sapcheck`

Make sure that the following directories are empty (except the subdirectory `aparch\cntrl`):

- `/oracle/<TARGET_DBSID>/saparch` and `/oracle/<TARGET_DBSID>/oraarch`
- `<drive>:\oracle\<TARGET_DBSID>\saparch` and `<drive>:\oracle\<TARGET_DBSID>\oraarch`

Switch to directory Drive:`\usr\sap\SID\SYS\exe\uc\NTAMD64 and execute the command` `brrestore -m full -b <Backupfile name>`
Once the restore is completed proceed with your sap installation by pressing OK

Proceed with sap installation by pressing OK button

Phase 10 of 27

Phase List

- Update system DLLs
- Create users for SAP system
- Install common system files
- Unpack SAP archives
- Create and load database
- Install/Check database
- Evaluate database parameters
- Install Oracle client software
- Configure Oracle server network
- Backup/Restore database

Press OK to uninstall source system schema

Database Schemas

- Drop Schema
  - OPS$ILABS1\N6PADM
  - OPS$ILABS1\SAPSERVICESR3
  - OPS$ILABS1\SAPSERVICEN6P

Error occurred
Upon checking the log s could find SAP is unable to connect to database so I have check the listener process and it was not started, I manually restarted the listener process.

Installation has been completed successfully.
Post Activity steps

**ABAP**
Perform follow-up activities in the target system as you normally would do after a Homogeneous System Copy. Follow the system copy guide for post steps.

**JAVA**
Follow Note 831812 - Config Tool shows incorrect parameters after System Copy, follow system copy guide for post steps.
Related Content

http://www.sdn.sap.com/irj/sdn/systemcopy;jsessionid=(J2EE3414700)ID2076107050DB00255433238591147579End

http://help.sap.com/saphelp_nw70/helpdata/EN/4b/d8f23ea4b42e5ae10000000a114084/frameset.htm

https://websmp230.sap-ag.de/sap(bD1lbiZjPTAwMQ==)/bc/bsp/spn/sapnotes/index2.htm?numm=547314

For more information, visit the Application Management homepage.
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