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**Introduction**

This document serves as a guide for configuring and using System Build Plus in Qlik Gold Client.

**Qlik Gold Client System Build Plus**

**Overview**

Qlik Gold Client has the ability to export only system table data and repository from a system to build a new “shell” SAP system using the System Build Plus feature in the Repository Replicator. System Build Plus leverages SAP’s system copy processes with a scheduling interface to exclude all application data from a system copy. This process allows for a creation of a “shell” system using SAP’s Software Provisioning Manager software with the export files generated by Gold Client Solutions System Build Plus. The end result is a target system that only has the system table data and repository information from the source system not any application data. After the “shell” system is created, Qlik Gold Client Client Construct and Data Echo can be used to populate the new target system with master and transactional data.

Gold Client Solutions has an authorization object which can be used to allow certain users access to this feature.

**Prerequisites**

Download the latest version of the R3 tools from the SAP Marketplace and install on the target system in the SAP executable directory.

These programs are database specific and include the following files:

R3ldctl
R3load
R3szchk
**System Build Plus**

The System Build Plus feature can be accessed from the main screen of Gold Client Solutions (Fig 1.0). By selecting the System Build Plus button the Gold Client System Build Plus main screen will be displayed (Fig 1.1).
**System Build Plus – Setting Parameters**

The first step in the System Build Plus process is to setup the Parameter Settings by clicking this button (Fig 2.0).

![System Build Parameter Settings](image)

All fields in the System Build Parameter Settings screen are required (Fig 2.1).

**Target Database:** Select the database that the target system will use

**Export Directory:** All export files created by the System Build Plus process will be saved in the designated directory. The SAP user using Gold Client must have read/write/delete permissions to the Export Directory in their S_DATASET authorization.

**Code Page for Data Files:** If the export system is non-unicode, then code page 1100 must be used. If the export system is unicode, then code page 4102 or 4203 must be used depending on the export system’s operating system. SAP Transaction SNLS can be used to determine the correct code page value using the Current Application Server field.

**Max jobs per server at 1 time:** Enter the number parallel jobs that System Build Plus will use during the export process. This number should not be set higher than the number of CPUs available on your export system.
Click the Execute button to save the parameter settings.

**SBP Table Exclusion:** System Build Plus automatically excludes all SAP Application tables (Delivery Call “A” in SE11) from the export process. The only exception is the USR* tables (to allow for successful logon after the target system is created). If there are additional non-Application tables (STXH and STXL for example), they can defined in this list and System Build Plus will not include them in the export process. Excluding some system tables could impact the usage of the target system.
**System Build Plus – Scheduling the Process**

The System Build process is started by clicking on the Schedule button for the Export Preparation profile (Fig 3.0).

The Export Preparation process can be scheduled immediately or at a date/time in the future (Fig 3.1). Clicking the Save button schedules the job.

Job AU_SYSBLD_M00 can be monitored using the Job Monitor button (Fig 3.2). This job will submit a series of jobs to execute the various System Build events.
<table>
<thead>
<tr>
<th>System Build Profile</th>
<th>Schedule</th>
<th>Job Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export Preparation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
System Build Plus – Export “Events”

Clicking on the Export Preparation profile (Fig 4.0) will list all System Build events (Fig 4.1).

![Export Preparation](image)

The Export events will run in order to complete the System Build export process. The Status column will change to reflect current status (green = complete, yellow = active, red = canceled). The Job Monitor button can be used as a shortcut to see the specific background job for each event (Fig 4.2).

![Export Preparation](image)
Generate SQL Migration Files
This event is executed with job AU_SYSBLD_ZDDL. This job generates the SQL file in the Export Directory that contains DDL statements for database objects in the source system. Standard SAP Program SIMGR_CREATE_DDL is used in this process to create these SQL files.

Generate Structure and Template Files
This event is executed with job AU_SYSBLD_LDCTL. This job generates structure (*.STR) and template (*.TPL) files in the Export Directory. Standard SAP utility R3ldctl reads the technical settings for table/indexes in SAP data dictionary to create these STR and TPL files.

Clicking on the Generate Structure and Template Files event name (Fig 4.3) will display log file R3ldctlExport.log.

Generate Database Sizing Files
This event is executed with job AU_SYSBLD_SZCHK. This job generates database object size (*.EXT) files. Standard SAP utility R3ldctl reads the database structure files to generate these EXT files.

Clicking on the Generate Database Sizing Files event name (Fig 4.4) will display log file R3szchkExport.log.
**Generate Command and Task Files**
This event is executed with job AU_SYSBLD_LTSK. This job generates command (*.CMD) files which contain information about file locations and package sizes. The job also generates task (*.TSK) files which contain a joblist for the System Export process (R3load). Standard SAP utility R3load generates these CMD and TSK files.

**Adjust Database Sizing Files**
This event is executed with job AU_SYSBLD_MODFL. This job modifies the DBSIZE.XML file and the database object size (*.EXT) files to accommodate for smaller table sizes for the shell export.

**Process System Export**
This event is executed with a series of jobs starting with AU_SYSBLD_PG*. These jobs execute the command files to create the data dump files (*.001, *.002, etc.) These files are highly compressed binary files created by standard SAP utility R3load.

The Process System Export jobs will not release until all previous events have completed sucessfully.

Clicking on the Process System Export event name (Fig 4.5) will display a Package View screen (Fig 4.6). Each AU_SYSBLD_PG* job will create a Package to export the related table data for each Package.
Clicking on the Package name will display the Package log file. Once all Export Preparation Event jobs complete successfully, the contents of the Export Directory can be copied to the target server for the SAP System Install Process.
**SAP System Install Process**

Download the latest version of the Software Provisioning Manager (SWPM) and R3 tools from the SAP Marketplace and install on the target system.

**SAP SOFTWARE DOWNLOAD CENTER**

*SOFTWARE PROVISIONING MANAGER*  SOFTWARE PROVISIONING MGR 1.0

**SOFTWARE PROVISIONING MGR 1.0 (SUPPORT PACKAGES AND PATCHES)**

- ATX 64bit
- HP-UX on IA58 64bit
- HP-UX on PA-RISC 64bit
- Linux on IA32 32bit
- Linux on IA64 64bit
- Linux on Power 64bit
- Linux on x86_64 64bit
- Linux on zSeries 64bit
- OS/400
- Solaris on SPARC 64bit
- Solaris on x86_64 64bit
- Windows Server on IA32 32bit
- Windows on IA64 64bit
- Windows on x64 64bit
- z/OS 32bit

**Info Page**

**SOFTWARE PROVISIONING MANAGER**

INSTALLATION AND COPY OF ABAP AND JAVA SYSTEMS

Start the Software Provisioning Manager (SWPM) on the target server by running the SAPINST program.

*Note: The following screens are from an HP-UX/Oracle installation (other OS/DB platforms may differ).*
Welcome to Software Provisioning Manager 1.0

Before starting the installation, make sure that you have identified the required scenario as described in the Master Guide.

Go to the option you want to execute. To display relevant help information in the right-hand panel, select an option or folder.

The menu path selected in this example was:

SAP NetWeaver 7.0 including Enhancement Pack 3
Software Life-Cycle Options
System Copy
Oracle

Target System Installation
Central System
Based on AS ABAP
Central System
**SAP NetWeaver**
SOFTWARE DELIVERY TOOL

Choose Option  Define Parameters  Summary  Execute  Completed

**Parameter Mode > Default Settings**
Choose whether you want to run the SAPinst in a typical or a custom mode.

**Default Settings**

Parameter Mode  Typical  Custom

**Additional Information**
You can run the installation either in a typical or a custom mode:

- **Typical Mode**
  If you choose Typical, the option is performed with default settings. As a result, you only have to respond to a small selection of prompts. If you want to change any of the default settings, you can do so on the Parameter Summary screen.
  Note that if you choose the Typical setting and then choose Back after processing one or more input screens, the Custom setting is activated. You are now guided through all screens with the default parameters that have been applied in the background so far.

- **Custom Mode**
  If you choose Custom, you are prompted for all parameters. At the end, you can still change any of these parameters on the Parameter Summary screen.
SAP System > General Parameters

Enter the SAP system ID

SAP System Parameters

- **SAP System ID (SAPSID)**: TST
- **SAP System Mount Directory**: /sapmnt
- **Unicode System (recommended)**: checked

Additional Information

The SAP System ID is an identifier for your SAP system. It must be unique throughout your system landscape.

The system is installed under /usr/sap/<SAPSID>/... Common directories are linked to <SAP System Mount Directory>/<SAPSID>/...
**SAP NetWeaver**
SOFTWARE DELIVERY TOOL

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose Option</td>
<td>Define Parameters</td>
<td>Summary</td>
<td>Execute</td>
<td>Completed</td>
</tr>
</tbody>
</table>

**SAP System > DNS Domain Name**

Enter the DNS domain name for the SAP system to calculate the fully qualified domain name (FQDN).

**SAP System Domain Name**

- Set FQDN for SAP System: [ ]
- DNS Domain Name for SAP System: `company.com`

**Additional Information**
The DNS Domain Name is used to calculate the Fully Qualified Domain Name (FQDN), which is configured in profile parameter `SAPLOCALHOSTFQDN`. This parameter is needed to define the URLs for the ABAP and Java application servers. See SAP Note [549652](https://service.sap.com/notes/549652).
**SAP NetWeaver**
SOFTWARE DELIVERY TOOL

**SAP System > Master Password**

Enter the master password for all users

**Master Password**
The password will be used for all accounts SAPinst creates and for the secure store key phrase.
Check the FT help for restrictions and dependencies.

Password for all users of this SAP system*: 

Confirm: 

**Additional Information**
If you want to set an individual password for each user, you can do this in the corresponding parameter section on the Parameter Summary screen. If you set individual passwords, a new master password will not overwrite these individual settings.
SAP System > Database

Select the database installation method.

Database Installation

Installation Method
- Standard System Copy / Migration (load-based)
- Homogeneous System Copy (Backup/Restore offline)

Start Migration Monitor manually

Additional Information

To use an existing database backup for building up a new system choose Homogeneous System Copy (Backup/Restore).
### SAP System Database

Enter the database parameters.

#### Database Identification

<table>
<thead>
<tr>
<th>Database ID (DESID)</th>
<th>TST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Database Installation for</td>
<td></td>
</tr>
<tr>
<td>Single Instance on Filesystem</td>
<td></td>
</tr>
<tr>
<td>Single Instance on Shared Oracle Home</td>
<td></td>
</tr>
<tr>
<td>Single Instance on Oracle ASM</td>
<td></td>
</tr>
<tr>
<td>RAC on Filesystem</td>
<td></td>
</tr>
<tr>
<td>RAC on Oracle ASM</td>
<td></td>
</tr>
</tbody>
</table>

**Database Host**

- If you want to install your SAP system with a **new** database instance, enter the database ID (DESID) for the database instance to be created.
- If you want to install your SAP system in an **existing** database instance, enter the DESID of the existing database to which you want to add the SAP system.
**SAP NetWeaver**

SOFTWARE DELIVERY TOOL

---

1. Choose Option
2. Define Parameters
3. Summary
4. Execute
5. Completed

Media Browser > Software Package Request

Enter the location of the required software packages

### Software Package Request

<table>
<thead>
<tr>
<th>Medium</th>
<th>Package Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC Kernel NW 7.26 / 7.21</td>
<td>Browse...</td>
</tr>
</tbody>
</table>

**Additional Information**

The required software packages available on the medium are detected using the identification files LABEL.ASC or LABELIDX.ASC.
Prerequisites Checker Results

Read the results of the prerequisites analysis.

Attention

Your host has been checked for compliance.

- If a condition is not met by your system, you may choose to continue.
- In rare cases, you might decide to stop. However, make sure this is done in a safe environment.

Detailed Results

<table>
<thead>
<tr>
<th>Condition</th>
<th>Result Code</th>
<th>Severity</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS Patches</td>
<td>Could not check</td>
<td>LOWY</td>
<td>The installation prerequisite checker did not check the minimum required OS patches on HP-UX. Read SAP Note 672670 and make sure that you have all required patches installed. HP provides the HP-UX tool that you can use to check the patch level. You can download it from <a href="http://www.hp.com/products/hpux/hw/index.html">http://www.hp.com/products/hpux/hw/index.html</a> (Updated 2006-12-08).</td>
</tr>
</tbody>
</table>
SAP NetWeaver
SOFTWARE DELIVERY TOOL

1. Choose Option
2. Define Parameters
3. Summary
4. Execute
5. Completed

Media Browser > Software Package Request

Enter the location of the required software packages

Software Package Request

<table>
<thead>
<tr>
<th>Medium</th>
<th>Package Location</th>
<th>Check Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migration Export</td>
<td>[__________]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Additional Information
The required software packages available on the medium are detected using the identification files LABEL.ASC or LABELDDM.ASC.
If you do not want to check the locations of the software packages now, deselect the flag in the Check Location column. Later, you are prompted again to check the locations of the software packages.
**Oracle > Database System**

Enter the parameters of the database system.

<table>
<thead>
<tr>
<th>Instance Memory Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance RAM [MB]</td>
</tr>
<tr>
<td>Total RAM [MB]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Database Schema Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABAP Schema</td>
</tr>
<tr>
<td>Password of ABAP Schema</td>
</tr>
<tr>
<td>Confirm</td>
</tr>
<tr>
<td>ABAP SSFS</td>
</tr>
</tbody>
</table>
**Oracle > Database System**

Enter the parameters of the database system

**Database Advanced Options**

- MaxDatafileSize: 20GB
- DB on Raw Device: [ ]
- Advanced DB Configuration: [ ]

**Additional Information**

In the Advanced DB Configuration section, you can change parameters for creating the database, creating tablespaces, file system distribution and storage. This section is for Oracle experts only.
SAP NetWeaver
SOFTWARE DELIVERY TOOL

1. Choose Option
2. Define Parameters
3. Summary
4. Execute
5. Completed

Media Browser > Software Package Request

Enter the location of the required software packages

Software Package Request

<table>
<thead>
<tr>
<th>Medium</th>
<th>Package Location</th>
<th>Check Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle ROOMS 112</td>
<td></td>
<td>Browse</td>
</tr>
</tbody>
</table>

Additional Information
The required software packages available on the medium are detected using the identification files LABEL.ASC or LABELIDX.ASC.
If you do not want to check the locations of the software packages now, deselect the flag in the Check Location column. Later, you are prompted again to check the locations of the software packages.
SAP NetWeaver
SOFTWARE DELIVERY TOOL

Oracle > Listener Configuration

Enter the listener name and port

Important Information
We recommend that you do not change the default values for Listener Name and Listener Port. You may change these default values only if you have more than one Oracle database on this installation host. In this case, see SAP Note 19757.
If you decide to keep the entries in an existing network configuration file, SAPInst will try to merge the new entries into the existing file instead of replacing the file.

Oracle Listener Configuration

Listener Name: LISTENER

Listener Port: 1527

Network Configuration Files

Keep listener.ora

Keep instances.ora
SAP System > DDIC Users

DDIC Users in SAP System Clients

Account: DDIC, client 000

Password of DDIC in client 000 in the source system*

Additional Information
SAP NetWeaver 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 set of tables. ABAP user data is SAP System Client-specific.

Media Browser > Software Package Request

Enter the location of the required software packages

Software Package Request

<table>
<thead>
<tr>
<th>Medium</th>
<th>Package Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Client 112</td>
<td>Browse</td>
</tr>
</tbody>
</table>

Additional Information
The required software packages available on the medium are detected using the identification files LABEL.ASC or LABELINDEX.ASC.

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**Parameter Summary**

Choose Next to start with the values shown. Otherwise, select the parameters to be changed and choose 'Review'. You are then taken to the screen where you can change the parameter. You might be guided through other screens that have so far been processed.

Parameter List

- **Parameter Mode > Default Settings**
  - Parameter Mode
    - [ ] Typical

- **SAP System > General Parameters**
  - SAP System ID (SAPSID)
    - [ ] TST
  - SAP System Mount Directory
    - [/sapmnt]
  - [ ] Unicode System (recommended)

- **SAP System Instance Profiles Cannot Be Found**
  - The instance profile for the following SAP system instances exists:
    - SAPSID / instance Name / instance Host / Detected from / Profile Path
Gold Client 8 System Build Plus

SAP NetWeaver
SOFTWARE DELIVERY TOOL

Task Progress
Running phase: Install common system files

Phase 2 of 25
- Create users for SAP system
- Install common system files
- Unpack SAP archives
- Create and load database
- Install/Check database
- Evaluate database parameters
- Install database server software
- Install Oracle client software
- Configure Oracle server network
- Prepare database server configuration
- Create database
- Create/Check table spaces
- Oracle Account installation
- Check Oracle NLS_CHARSET

Creating system directories for SAP system TST...
**Post SAP System Install Process**

When the installation is complete, Basis will need to import a SAP_USER profile from the source system or another system if needed. The USR* tables were the only user info copied with System Build lus to allow for an Basis logon once the target system was created. SAP Users, Authorizations, and Adresses will need to copied with the SAP_USER profile before business users access the system. Transaction SCC8 can be used in the source system to save the SAP_USER profile to a transprot which can be imported into the target system.

Standard Post Installation steps need to completed by Basis once the system is created. Some of the items could include (based on your SAP environment and procedures):

- Setup keys in transactions STRUST, SMT1, STRUSTSSO2
- Setup logon groups with transactions SMLG, RZ12
- Lock/Unlock or setup users in transaction SU01
- Update transaction SLICENSE if needed
- Check transaction SECSTORE if needed
- Check Queue with transaction SMQ1, SMQ2, SMQS, SMQR
- Update domain email address in transaction SCOT
- Check Workflow RFC in transaction SWU3
- Check printer status and setup
- Run transactoin SGEN
Support Information

Qlik Analytics (ISR) Ltd. can be contacted either by telephone or via email. Any support related issue regarding problems with or use of the Gold Client software and process can be reported for resolution.

If our offices are closed, or staff is unable to directly respond to a support request, we will respond within 24 hours of the initial call. Problems related to the export or import processing may require code enhancements. If a code enhancement or fix is required, resolution time may vary.

As per the maintenance agreement, any repairs or enhancements to the Gold Client software will immediately be deployed to all customers up-to-date with their maintenance contract. It is the choice of the customer as to if and when such enhancements are implemented. In addition, customers may request a planning session with Qlik to review changes in the software and how the changes might impact their environment.

We can also be contacted to discuss application or feasibility of using the Gold Client process to resolve a current challenge the project team faces. When this is required, a planning session can be scheduled in advance to ensure proper participation by both Qlik and the client.

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