



Unicode Conversion: Tips and Tricks for Improving the Conversion Time

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1 Introduction

This document is meant to improve the conversion time needed for a Unicode conversion. It also gives some hints to smooth the conversion process. For updated info, please have a look into 548016 and the Unicode conversion guide.

2 Overview

A Unicode conversion consists of the following steps:

- a) Export (and convert) the entire database using Non-Unicode R3Load
- b) Create a new Unicode database (with standard Unicode inst package)
- c) and then import the database using R3Load again.

In principle this method is a "Homogeneous System Copy" (OS and DB does not change) and in addition a Unicode conversion during database export. SAPIInst (which controls R3Load) is used as tool for the Export process. The Unicode conversion is done during the export of data. After the export (and the conversion) have been completed successfully, the whole Non-Unicode system can be deleted (Standard Procedure – of course you can e.g. install the Unicode system on a different server). The following creation of the Unicode system is very similar to the installation of an entirely new Unicode system. Instead of the export CDs provided by SAP you use the export files generated during the export procedure before.

It is possible to combine the Unicode conversion with an OS/DB migration.

Note: As the basis for the Unicode Conversion is a System Copy, all restrictions for a System Copy also apply to a Unicode Conversion.

3 Tips and Tricks

- a. Use Kernel CD and SAPIInst CD from **latest** Installation Package for export and import of your SAP system
- b. Define parallel processing in SAPIInst
 - i. Rule of thumb: 2 R3load processes per CPU → Number of R3Load Processes can be configured in SAPIInst Window "General Export Parameters → Number of parallel jobs"
 - ii. Processing of big db tables in separate jobs:

If there are several big database tables processed in one R3Load job (tables within one STR file), the processing of these tables is serialized. Therefore one job with several big database tables might run a long time and might get a bottleneck regarding run time. The following option in SAPIInst improves the situation (the first step in Window "General Export Parameters" is not necessary on all operating systems): → Window "General Export Parameters"

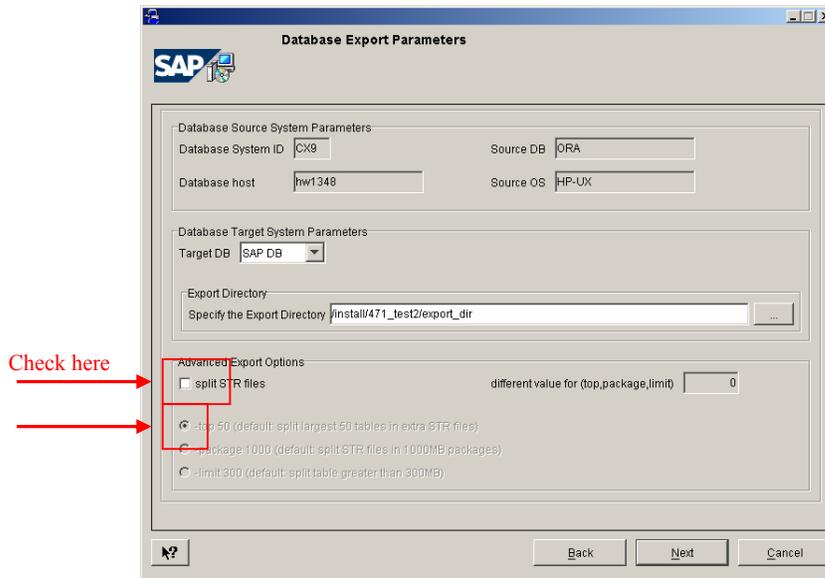
→ Prompt "General Settings" → "export packages in **custom** order"

Check here

Specify Number of parallel jobs here (see 2a)

→ Window “Database Export Parameters”

→ split STR files → top 50 (default: split largest 50 tables in extra STR files).



As of now, a JAVA tool exists, which can be used for splitting packages. Please have a look at note 784118. Please make sure that after splitting, **the tables DDNTT and DDNTF have not been distributed to separate STR files**, because the load of DDNTT requires the existence of table DDNTF.

c. Under the Alias “**SYSTEMCOPY**” → **Optimization** you can find various information how to enhance the system copy procedure.

d. Oracle only: special update statistics for **cluster tables**:

In order to apply b) ii) (separate jobs for big tables) also to cluster tables, the following update statistics need to be executed for cluster tables.

i. Preprocessing: (System should not be used productively with these stats)

```
brconnect -u / -c -f stats -o @DB_SCHEMA@ -t all -m +l -s P10 -f allsel,collect,method,precision,keep -p 4
```

ii. Postprocessing (deletion / recommended before productive usage)

```
brconnect -u / -c -f stats -o @DB_SCHEMA@ -t all -d
```

e. Use **latest** executables (also for Windows environments) especially for R3Load and DBORASLIB (for Oracle only)

i. Export: Update the SAP system Kernel before beginning with the export

ii. Import: **After** the Central Instance is built up and **before** installing the Unicode database instance, the executables should be updated (for details see installation guide).

- f. Background on R3Load files:
 - i. *R3load* control files (*.str) contain the structure information of tables. There is structure information in one of the control files for each table in the database. A control file is generated for each tabart.
 - ii. Export task files (*.tsk) contain a set of tables that have to be exported. For each control file, a task file must be generated. The task files are normally generated by R3load and tell it which tables to export. There are 3 states for every entry: exc (to be executed), ok (exported successfully), err (error occurred)
 - iii. For each control file a command file (*.cmd) has to be created. A command file contains the name of a task file and its control file. It contains additionally the template file name and the name of the export file.
- g. Test export: Perform test export (e.g. as performance test) with table XXXX (RFBLG is taken here as an example):
 - i. Schedule Export via SAPInst – Cancel Export as soon as data files are written.
 - ii. Search for table RFBLG in *.tsk (in this case: SAPCLUST.TSK)
 - iii. Copy SAPCLUST.TSK and change name to RFBLG.TSK
 - iv. Delete all entries except those for table data of RFBLG (D RFBLG I exc) in RFBLG.TSK
 - v. Copy SAPCLUST.STR and change name to RFBLG.STR. Delete all entries except those for table RFBLG in RFBLG.STR
 - vi. Copy SAPCLUST.CMD and change name to RFBLG.CMD. Change file names in RFBLG.CMD:
 - tsk: RFBLG.TSK
 - icf: RFBLG.STR
 - dcf: DDLORA.TPL
 - dat: .\ bs=1k fs=250M
 - dir: .\RFBLG.TOC
 - vii. Execute R3Load (Example – Source code page 1100 / Target CP 4103 on Windows):
 - R3load.exe -e RFBLG.cmd -p RFBLG.log -datacodepage 4103 -dbcodepage 1100**
- h. Consider to improve Database Performance
 - i. Check Hardware bottle necks (e.g. specific disks,...)

4 Additional Information

Additional information can be found in:

- a. SAPNet Alias Unicode → Unicode Media Center
- b. SAPNet Alias Unicode@SAP → Media Center
- c. SAPNet Alias SYSTEMCOPY
- d. Unicode Conversion Guide (can be found under Unicode@SAP → Media Center)
- e. Note 548016 and related notes.
- f. System Copy Guide “Homogeneous and Heterogeneous System Copy for SAP Systems Based on SAP Web Application Server 6.40”