

Automating SAP System Copy

Pre- and Post processing of the System Copy

Introduction

The topic of SAP system copy is giving many SAP customers headaches. System copies should be made regularly, but SAP does not provide the necessary tools to automate and handle the process efficiently. It is, therefore, not uncommon for complete system copies, including any post-editing, to take several days. Meanwhile, testing and development work comes to a standstill, and the large number of manual tasks in the entire process ties up internal resources. This document explains how a considerable portion of the total process can be automated using the UC4 platform. This helps companies be more flexible, save time and money, while producing audit-compliant documentation.

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Creating copies of production systems is part of any company's IT standard procedure. This does not only include traditional backing-up of files, but also rather aims at the operation of several system environments for development, testing, training, and demonstration purposes. It is customary today to have at least three-level systems, but environments with four, five, or more systems are not that uncommon among companies either.

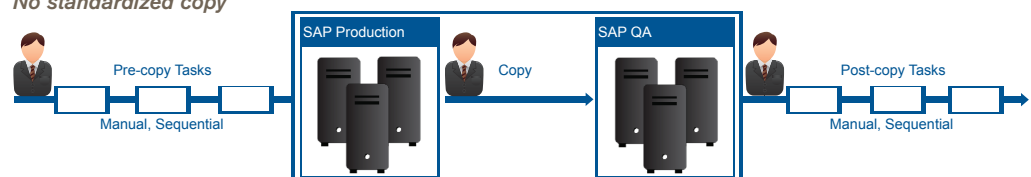
SAP systems are highly critical to the company and, thus, very sensitive to any intervention. No one in charge of SAP who takes his or her responsibilities seriously, for example, would ever test a new software tool or a new hardware component within an active production environment-the sheer risk of it would be incalculable. Even though this process is part of the regular routines of a computing center, no one should ever believe that it is just yet another simple routine. An SAP system copy can take days, as practical experience shows. For example, a major client of UC4 Software required between one and four man-days to create a system copy using only the standard functions available in SAP. The adjustments to the database tables alone took over 52 hours. This white paper sheds light on the difficulties in this process and explains how that company was able to reduce the implementation time down to a few hours for the database tables by introducing the UC4 platform.

SAP System Copy: A Necessary Evil

The company SAP recommends to its customers that they create system copies on a regular basis. Organizations with a complex infrastructure are advised to do so at least once a month. Aside from that, SAP is adamant that system copies be created whenever changes are made to the operating system or a database, or, in the words of SAP, "at different stages in the life cycle of the solution." The leading hardware makers offer solutions for the SAP system copy problem. But their approach is not suitable for streamlining the process, and also comes with risks: SAP does support the finished copy, but if errors occur during the process, the company denies any responsibility and asks customers to direct their complaints to the hardware vendor.

According to UC4 Software, the only solution that holds the promise of success and could do away with the difficulties lies in automating SAP processes as much as possible in preparation for and following up the system copy process. The most time-consuming processes involve carrying out transactions such as transport requests (before the system copying begins) and restoring allocations (once the copy process is complete). These parts of the system copy process are still currently completed using manual processes. In order to create an identical copy of a system, any conventional backup solution that transfers data one-to-one from one disk memory to another will do. This throws up the problem of using the copy of the current production system for testing and development, because, to put it in simple terms, all references point to the "wrong" system, instead of making full use of the new environment. All allocations point in the wrong direction.

No standardized copy



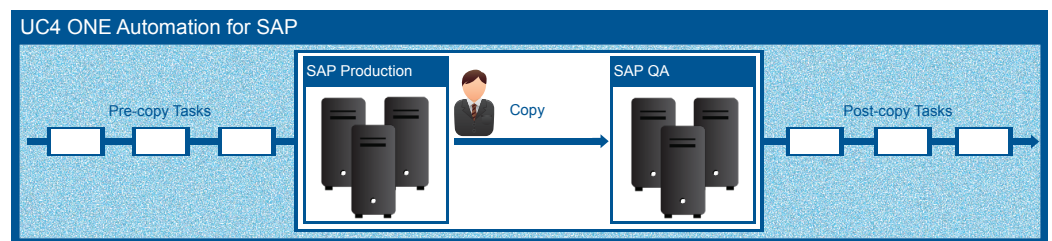
Certain parameters simply do not work anymore: the logical system name alone, for example, “PRSERVER01”, pops up in several thousand locations, and must be changed everywhere to “QASERVER01” (QA for quality assurance, a common abbreviation for a test system).

Since SAP does not define the logical name in one location and then simply reference it, the entry has to be overwritten every single time. This process alone can take hours. But let us not forget that this is only one step in the “SAP system copy” manual, which should be found in any SAP computing center. Most versions of the manual run to more than 100 pages that explain to the user how to make a system manually copy step by step.

Examples of Automation

The individual steps involve UC4 written SAP programs in conjunction with operating system processes provided by the solution “UC4 Automated System Copy for SAP”. Virtually all the steps in the manual are picked up by UC4 once following the same method, and can then be executed any time, even in dependencies to each other. Instead of numerous manual steps, at the end of the UC4 process, the user will find a structure that maps all the steps contained in the manual. All the jobs can then be launched in any random order from a convenient GUI, without administrators having to trigger processes within SAP. If some parameters change, such as a change of the system name from PRSERVER01 to QASERVER02, they can be taken over into the UC4 system. When it comes to the downstream system configuration, this method really makes it a lot easier.

Even more impressive are the possible improvements in process efficiency at the level of database tables. SAP contains an ABAP program called BDLS used in identifying the tables in which the “logical system name” needs to be converted. These tables are then converted with the help of UC4 developed ABAP programs.



In simplified terms, the process in SAP works as follows:

The report is generated and executed in SAP, or automatically in the BDLS transaction, i.e. the report identifies and then sequentially processes all tables where conversion is needed when it is executed.

The customer we mentioned earlier had to convert 800 tables, working sequentially, within the SAP standard.

What bothers the computing center staff the most is that they cannot work on the QA system during this entire time—if we use our earlier example, this means no testing for more than 52 hours. The solution “UC4 Automated System Copy for SAP” improves the situation dramatically. UC4 is able to read the tables to be converted out of the report and convert them in parallel processing.

In this case, a job with its own variant is generated for each table. This can then be run in UC4 against the SAP system in as many parallel instances as required for the Dual Stack. In an actual example involving a major UC4 customer, this method helped reduce the time required for automatic post-processing to a few hours.

New Application Area or Introduction to SAP Automation

Support of SAP system copy is not a new functionality within the UC4 platform. It is a further use of functions already included with UC4. In addition, virtually all SAP processes, integration of SAP with external non-SAP applications, legacy systems, or IT-infrastructure tasks can be automated in this way. Experience has shown that the SAP system copy process cannot be fully automated. But an automation level of 90 percent can be achieved, as well as the resulting enormous time and resource savings. The development department is no longer condemned to twiddling their thumbs for days. What is more, eliminating manual interactions in favor of standard operations also improves traceability, because all processes can be documented in an audit-compliant manner. This constitutes a significant process improvement for a variety of compliance requirements. For existing UC4 customers, the solution “UC4 Automated System Copy for SAP” is an interesting option, which can be implemented easily using the existing resources. For potential new customers, this is an excellent opportunity to give SAP automation a try, while also eliminating a source of problems in their SAP environment at the same time.

In summary, the added value in increasing the degree of automation in the SAP system copy is that the hardware resources can be used more efficiently, and personnel assigned to SAP system copy get more time for more important tasks. Another bonus for SAP development is the use of current test data for development and training activities, as well as a realistic simulation of new business situations based on current data.