

Tools and Techniques to Assist in SCM 7.0 Upgrade from 5.0



Applies to:

This document is applicable to SAP APO upgrade from 5.0 to 7.0 version. For more information, visit the [Supply Chain Management homepage](#).

Summary

Purpose of this document is to provide benefits to consultants/clients who would be upgrading to SAP APO 7.0. It provides few techniques and resolution of issues faced during SCM 7.0 upgrade.

Author: Aman Gupta

Company: Infosys Technologies Limited

Created on: 27 May 2011

Author Bio



Aman Gupta is a SCM Consultant working with Infosys Technologies Limited. His areas of expertise are development and management of Supply Chain Solutions in both Demand Planning and Supply Network Planning. Aman has worked on both ECC and SAP APO in different versions. Currently he is working at one of leading Hi-Tech client in USA.

Table of Contents

Objective	3
Conduct Pre and Post Upgrade Execution of Key Functionalities	3
Analysis for Single Transaction or Program through ST12.....	6
Side Effect Reports	7
Validation of UI for SAP Standard Transactions, Programs and Functionalities.....	8
Enhancement in shuffler in Planning books in SCM 7.0.....	8
Issue while changing time based Process Chains	8
Critical Statistics Pre and Post-Upgrade	9
Related Content.....	10
Disclaimer and Liability Notice.....	11

Objective

This document is created to present few techniques that could be deployed in the future SCM upgrade projects.

Conduct Pre and Post Upgrade Execution of Key Functionalities

It is of extreme help to plan for a dedicated phase, where all the processes / functionalities [both Standard and Custom] are executed just before the environment is being upgraded and again executing all the same processes / functionalities immediately after the Upgrade

This approach helps in quickly highlighting any functional/technical/performance related issues caused due to Upgrade, as the processes would have run on the exact same data set, thus eliminating any other variables.

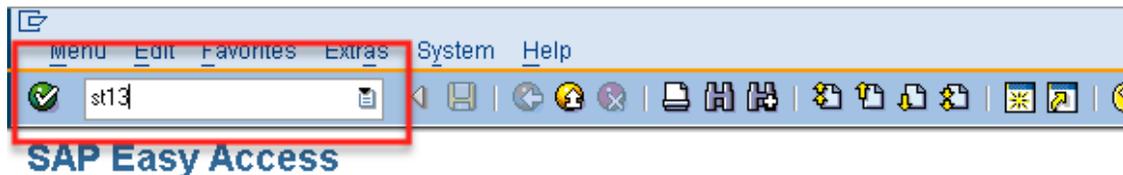
We have below a sample representation of how different programs/functionalities be managed for this analysis systematically:

S. No	Module	Chain	Program / Functionality	Variant & Data	Pre-Upgrade			Post-Upgrade			Comments	Action
					Status	Output	Errors	Status	Output	Errors		
1	DP	Chain 1	Program 1									
2		Chain 1	Functionality 1									
3		Chain 2	Functionality 2									
4	SNP	Chain 1	Program 1									
5		Chain 1	Functionality 1									
...		Chain 2	Program 2									
...	GATP ...											
...												

One of the most effective methods to compare run-times for Process Chains is to use the transaction ST13.

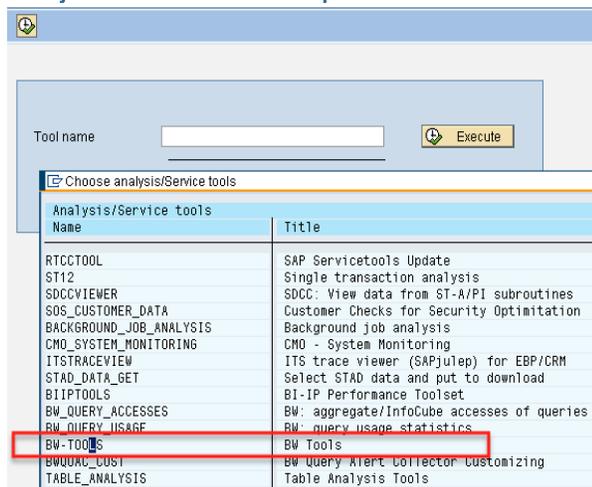
In any process chain there are different kinds of programs both standard and custom. To compare the run times of all steps by running them independently would be too time consuming and complex to manage. ST13 is a useful transaction through which we can compare the run times pre and post upgrade of different programs or utilities in a single snapshot.

Following steps are required to capture the run times through ST13:

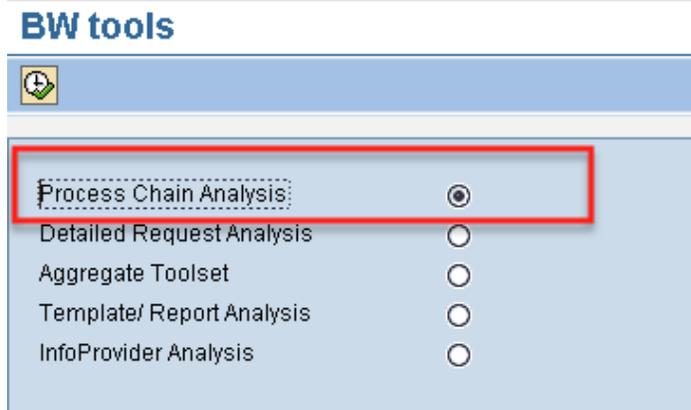


On the next screen, select "BW-Tools"

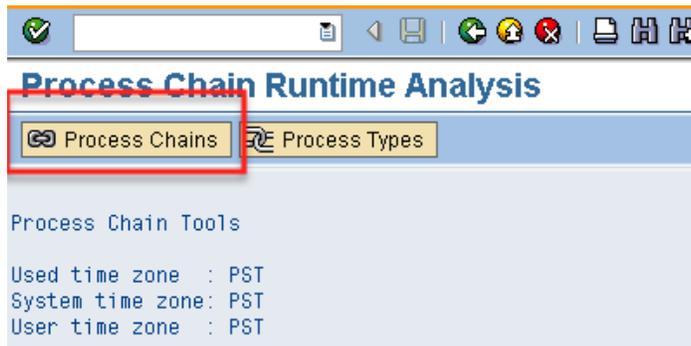
Analysis&Service Tools Launchpad



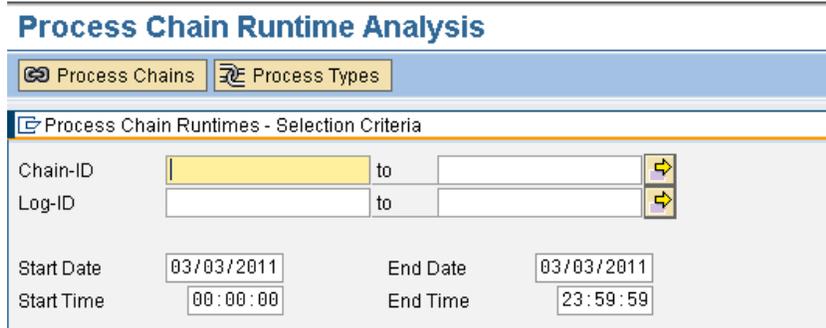
After executing, on the next screen, select “Process Chain Analysis”



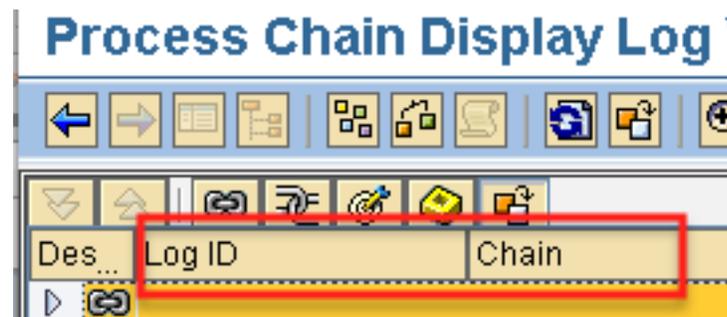
On the next screen, select “Process chains”



After clicking on process chain tabs, we can enter Log ID and Chain ID



Log ID and Chain ID can be found from the log view of the process chain [tcode - RSPC] as follows:



Date and Time ranges can be put based on the actual past run times

Once we enter all details and execute, we can see the log details of the process chains and confirm the details like – process chain name, date, time, Total run time in hrs, total run time in seconds, End date and End Time.

Process Chain Runtime Analysis

Status	Steps	Main	Chain	Log-Id	SubCh...	Steps	Day	Date	Time	Runtime	Ru
		<input checked="" type="checkbox"/>	ZSTART	4KW8RR1\	1	70	FR	02/18/2011	18:00:27	03:29:31	1
		<input checked="" type="checkbox"/>	ZSTART	4KV4CG7F	1	71	TU	02/15/2011	10:23:27	06:49:34	2

After confirming the chain details, we can select both the chain and click on “Compare Runtimes”

Then we can see following headings:

Chain	Type	Process Variante	L1-Runtime	L2-Runtime	L2-Dif-Rur
-------	------	------------------	------------	------------	------------

Details includes –

- Chain Technical name,
- Type – ABAP, Job, PSA Delete
- Run times of different logs in hours and seconds
- Difference in the run times,
- Number of times each step executed in different runs

This method was used in SCM 7.0 upgrade project and was an effective way to trace run times in single snapshot, which has performance issues in SCM 7.0 environment. Depending on the internal analysis for the affected programs, if a standard object gets impacted in SCM 7.0, it can be taken up with SAP vendor for resolution.

This approach works as an early alert mechanism highlighting the functionalities with significant deltas in either functionality or the run times that can be addressed at the very initial phases of the Project.

One such example was the long run time for CTM after the Upgrade on the same data set:

On further analysis we have found in CTM detailed logs that majority of the increase in run time has occurred during Demand Prioritization. We have noticed that the CTM run in our test systems take 5 times more time to complete after the SCM 7.0 upgrade, with demands almost half of those pre-Upgrade run times. Post-Upgrade, the time taken to determine and prioritize demands was 17 hours.

Whereas pre-Upgrade the time taken to determine and prioritize demands is only 2 hours, that too on almost double the number of demands.

Solution: After the implementation of the OSS Note 1466849, we have seen an improvement in the runtime for demand prioritization. The total time taken to prioritize around 327K demands came down to around 3 hours and 40 minutes. However, the time taken pre-Upgrade to prioritize around 525K demands is only 2 hours. Further we have found the root cause that in SCM 7.0, during demand prioritization, the system was trying to determine the ORDMAP and other details for Forecast order [these are only required for Sales Orders and deliveries]. Since the majority of the demands in the system are forecasts, the time was spent incorrectly. SAP has released note 1564196 to fix the issue. This note fixes the side effect caused by the note 1151965. After implementing the note, demand prioritization reduced from 100 minutes to 5 minutes only.

Analysis for Single Transaction or Program through ST12

After completing ST13 analysis, we can have list of Programs/functionalities, which are running for longer duration than pre-upgrade.

In ST12 we can put the transaction or the program that needs to be analyzed

Single transaction analysis

Trace & collect

Traces on/off Collect ext. traces Statistical

Trace for User Tasks & HTTP Workprocess Current mode

Comment

Transaction WUF (ABAP trace for own mode, Perf.t

Program

Execute / s

Analysis through ST12 t-code help to find out at high level if the issue exists at the ABAP, database or system level.

Trace analysis 05/27/2011(01) - ABAP Trace Per Call

Per ModUnit Full ALV

Transaction WUF - Where-Used List ABAP 72,632,042 = 29.0%

Traced user Database 31,048,080 = 39.8%

Execution times in microseconds System 24,255,868 = 31.1%

Total 77,935,990 = 100.0%

Call	No.	Gross	Net	Gross (%)	Net (%)	Program (called program)	Type
Select /SAPAPO/PLAN	1	7,705,173	7,705,173	9.9	9.9	/SAPAPO/SAPLOD_PPM_COMPONENT	DB
Call ALERTS	5	5,000,178	5,000,178	6.4	6.4	SAPLSAL2	
Perform CUKD_INIT	1	3,629,624	3,629,624	4.7	4.7	SAPLCUKD	
Load Report CL_IXML	1	3,379,540	3,379,540	4.3	4.3	CL_IXML	CP Sys.
NatSQL Execute Procedure "APS_PEGID_GET_IO"	5	3,102,464	3,102,464	4.0	4.0	/SAPAPO/SAPLOM_PLANNING	DB
Perform MOVE_ODM_HDR_FIELDS	1	2,301,706	2,301,706	3.0	3.0	/FRE/SAPLDB_OPH	
Load Report CL_PPFITFNG_CNT	1	1,724,058	1,724,058	2.2	2.2	CL_PPFITFNG_CNT	CP Sys.

Sort by net % to identify long running steps

ST12 is helpful to functional consultant as it provides a quick snapshot of the problematic points and thereafter we can work with technical team to resolve those.

Side Effect Reports

A side effect report can be used to generate a list of all solution notes for the issues caused by the notes which are part of Support packages which a client wants to implement. The link to request a side effect report is <http://service.sap.com/side-effects>

In this link, select SAP SCM and the valid version:

The screenshot shows the 'Choose Product' step of the SAP side effect report process. The 'Choose Product' tab is selected, and a dropdown menu is open, showing a list of SAP products. 'SAP SCM' is highlighted with a red box. Below the dropdown, the 'Product and Product version' section is visible, with 'SAP SCM' and 'SAP SCM 7.0' selected, also highlighted with a red box. The 'Continue' and 'Reset' buttons are visible at the bottom.

On the next screen, select the lowest package and the highest support pack for one or more software components to get the list of solution notes. The range has to be within the target version across all components.

Existing Software Components	Lowest Support Package	Highest Support Package
SAP NW 7.0 BI CONT ADDON 7.05		
SAP SCM 7.0	SAPKY70001	SAPKY70006

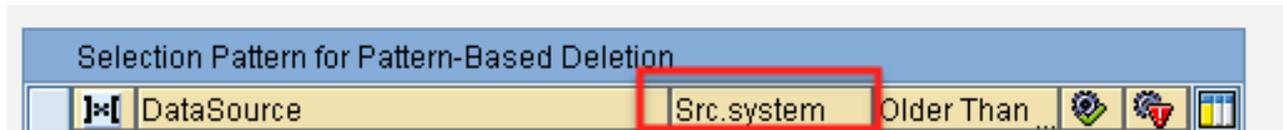
The side effect report could be helpful for one single support package for one or more software components.

Since the time the development/sandbox system is first upgraded till the time we go-live, SAP continues to release OSS Notes to fix issues reported by other customers which also become a part of the later Support Packs. Running this report on a regular basis helps identify any issues that may have been side-effects of the OSS Notes that have already been implemented as part of our Support Pack.

Validation of UI for SAP Standard Transactions, Programs and Functionalities

Validation of selection screens for all critical transactions, programs (both custom and standard) is an important activity which needs to be done pre and post upgrade. It helps in making sure that if some new field is added then it should be only activated/flagged only after extensive testing is completed and after taking business consensus if it's a functional enhancement.

Example - We have found that there was a screen of PSA deletion has been changed and a new field added in SCM 7.0, which was pointing to Production system though it was test systems. So all PSA deletion step have to be changed to test systems client else old PSA requests won't get deleted and run times post-upgrade would be significantly higher as compare to pre-upgrade. In our scenario



Enhancement in shuffler in Planning books in SCM 7.0

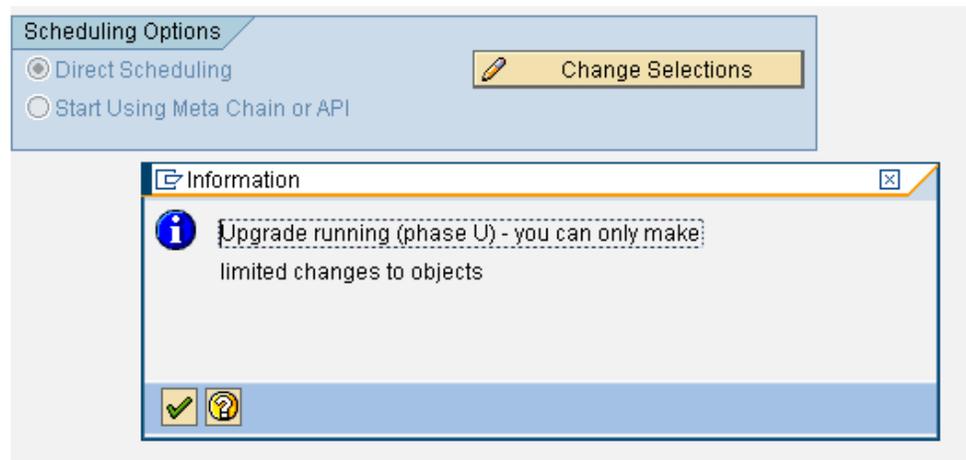
In SCM 7.0, SAP has provided enhancement, which is helpful for users in shuffler as it saves time while selecting different "Show" criteria. In SCM 5.0 whenever users change "Show" entire selection like DP Location, Part Number used to get reset and users has to fill the selection details again.

Whereas in SCM 7.0, even if we change "Show" selection, other selections remains as-is and no need to fill the selection again

Issue while changing time based Process Chains

To surface any other issues, in case not captured in prior testing, it was decided to perform the upgrade of test systems in same way we would be doing for production system. To have minimal impact on business processing, some process chains need to be rescheduled which can be run pre-upgrade and some post-upgrade.

After upgrade prepare phase, while changing date or time of time based start condition chains we got below error.



Above information is helpful so that in case time based process chains need to be rescheduled then they should be done prior to the start of upgrade preparation phase. Event based chains can still be triggered through triggering start event and there is no need to change them. Activations and putting chains out of schedule will also be possible.

Critical Statistics Pre and Post-Upgrade

It is a very important activity to make sure no data gets lost during upgrade process. So it is essential that statistics for important objects should be taken just before system goes down for upgrade and immediately as soon as system is up after upgrade. It is advisable not to execute any processes, transactions until the tasks of capturing statistics gets completed so the status of active version remains same.

We have below a sample representation of how stats for different objects can be captured in a systematic way:

S No.	Object	Transaction/Bapi/Table Details	Selection ID/ Variant/ Test Data Directory Details	Pre-Upgrade			Post-Upgrade		
				Execution Time	Status	Statistic	Execution Time	Status	Statistic
1	Object								
2	Sales Orders								
3	Planned Order								
4									
5									
6									

Related Content

<http://forums.sdn.sap.com/thread.jspx?messageID=9813786#9813786>

<http://service.sap.com/upgrade-scm>

<https://websmp205.sap-ag.de/side-effects>

<http://service.sap.com/scm>

For more information, visit the [Supply Chain Management homepage](#).

Disclaimer and Liability Notice

This document may discuss sample coding or other information that does not include SAP official interfaces and therefore is not supported by SAP. Changes made based on this information are not supported and can be overwritten during an upgrade.

SAP will not be held liable for any damages caused by using or misusing the information, code or methods suggested in this document, and anyone using these methods does so at his/her own risk.

SAP offers no guarantees and assumes no responsibility or liability of any type with respect to the content of this technical article or code sample, including any liability resulting from incompatibility between the content within this document and the materials and services offered by SAP. You agree that you will not hold, or seek to hold, SAP responsible or liable with respect to the content of this document.