System Maintenance Action Plan (SMAP)

System Administration

SAP System ID

SAP Component

Release

DB System

Customer

Service Center
Telephone
Fax

Date of Session	19.05.2005	**Session No.**	0010000031525
Date of Report	20.05.2005	**Installation No.**	0041092204
Author	ANZEIGER	**Customer No.**	41092204

1 Table of Contents

2 SMO: System Administration

2.1 Session Summary

2.2 Action Plan

Number	Priority	Action Description	Deadline	Person Responsible	Issue Type

2.3 Questionnaire Topics / Session Content

SESSION CONTENT

Description	Show Check
Introduction	☐
Performance Management	☐
System Management	☐
Database Management	☐
High Availability	☐
Printing	☐
Change Management	☐
Security	☐
APO	☑
BW	☐
CRM	☐
XI	☐
SAP Technology Components	☑

3 Advanced Planner and Optimizer (APO)

3.1 APO Administration Responsible Persons

RESPONSIBLE PERSON

Responsible Person	Company

3.2 Configuration/Sizing

3.2.1 Quick Sizer

Purpose
Once for configuration and if important changes are expected.

Procedure
Estimate the following values. For more information, see SAPNet, Alias Sizing | Media Center | Quick Sizer Offline Questionnaire Version 2.0
or
Alias SIZING | Quick Sizer | Start Quick Sizing. Under Preview | Advanced Planner

INDICATORS OF APO SIZING

Indicator	Value
#Demand Planning	Yes/No
Total number of characteristic combinations	
Total number of key figures	
Number of keyfigures in livecache (in %)	
Total number of periods in planning horizon	
Total number of periods in historical horizon	
Number of planning versions in Infocubes	
Number of planning versions in liveCache	
Retention period for data records in InfoCube in months	
Characteristic combinations relevant for planning run in % of above	
Execution period of planning run	
Users of Demand Planning (as additional load)	
#Supply Network Planning/PP/DS/ATP	Yes/No
#Master Data	
Number of location products	
Total number of resources	
Number of warehouse stocks	
#Different types of Orders or Requisitions used for planning	
#Average Number of Objects in the Planning Horizon	
Sales orders	
Purchase orders or purchase requisitions	
Transfer orders	
Forecast orders	
Planned orders with SNP production process models (PPMs)	
Average number of planned orders and manufacturing orders with PP-PPMs	
#Time Series liveCache in SNP	

Indicator	Value
Number of location products	
No. of key figures	
No. of time buckets	
#Supply Network Planning	Yes/No
Number of location products planned in heuristic planning run	
Execution period of the planning runs	
Users of Supply Network Planning (as additional load)	
#Production Planning - Detailed Scheduling	Yes/No
Users of Planning Table (as additional load)	
#Available-To-Promise (ATP)	
Number of ATP requests against warehouse stocks per hour	
Number of rule-based ATP requests per hour	
Number of CTP requests per hour	
#Integration	
Number of sales orders transferred to and from APO per hour	
Number of manufacturing orders transferred to and from APO per hour	
Number of purchase requistions transferred to and from APO per hour	
#Miscellaneous	
Number of planning versions (including active version)	

3.2.2 Install RFCOSCOL

Purpose
For analyzing hardware and operating load on standalone liveCache and Optimizer we recommend to implement the SAPOSCOL on all standalone servers.

Procedure

SMAP TASKS

Task	Responsible	Frequency	Menu Path	Transaction
Check log		<every now and than>	Tools| CCMS|Control/Monitoring|Performance Menu|Operating system| Remote|Activity|Goto|OS Collector	OS07 | OS Collector
Using Alert Monitor RZ20			Tools | Control/Monitoring	RZ20

LIST OF SAPNET NOTES

Topic	Notes
Install RFCOSCOL (for Rel. <= 4.6 B)	202934
Using data collection agent SAPCCMSR (for Rel. <= 4.6 B)	371023

3.2.3 Integration Models

Purpose
<init and after customizing>

Procedure
It is important for system administrators to know which data how and how often will be transferred from R/3 System to APO System.
In general it is recommended to have different Integration models for different data.
You can choose between immediate and periodic transfer of data. This will be customized with help of transaction CFC5 (CFC9 as of PlugIn 2002.2).

Immediate Transfer
Check entries in table CIFMODGEN.
Check running of background jobs RIMODGEN and RIMODAC2.

Periodic Transfer
based on ALE and Change Pointer Processing.
Check which Change Pointers are activated with help of BD52.
Reorganize Change Pointer Table with help of transaction BD22.

INTEGRATION MODELS

Model	Logical System	Application	Selected Data	Transfer Method
				<Immediately, Change Pointers,no transfer of changings>

SMAP TASKS

Task	Responsible	Frequency	Menu Path	Transaction
Check Integration Models			Logistics | Central Functions | Supply Chain Planning Interface| Core Interface APO | Integration Model | Display	CFM4
Consistency check of Integration models as og PI 2002.1		weekly	Report RCIFIMAX	
Create Integration Models			Logistics | Central Functions | Supply Chain Planning Interface| Core Interface APO | Integration Model | Create	CFM1
Activate Integration Model			Logistics | Central Functions | Supply Chain Planning Interface| Core Interface APO | Integration Model | Activate	CFM2
Change Integration Models			Logistics | Central Functions | Supply Chain Planning Interface | Core Interface APO| Integration Model | Change	CFM6
Delete obsolete Integration Models		<weekly>		Report RIMODDEL
Check transfer method				CFC5 (CFC9 as of PlugIn 2002.2)
Backgound Jobs RIMODGEN and RIMODAC2				SM37
Activate Change Pointers in general				BD61
Choose and adapt Message Types for transfering				BD50
Schedule data transfer for Change Pointer Method				CFP1, Report RCPTRAN4
Reorganize Change Pointers		<weekly obsolete change pointers which are older than 14 days>	Tools| ALE Administration| Services| Change Pointers| Reorganize	BD22, Report RBDCPCLR
Check data transfer channels in R/3				CFP2
Check data transfer channels in APO				/sapapo/cq

LIST OF SAPNET NOTES

Topic	Note Number
Generation and activation of integration models in batch	187455

Topic	Note Number
Inconsistencies between material master and integration models	201516

3.2.4 liveCache Preparation

Purpose
During liveCache preparation.

Procedure

PROCEDURE FOR LIVECACHE PREPARATION

Step	Task	Responsible	Frequency	Menu Path	Transaction
1.	Maintain password 'control' for DBM user 'control'			Tools | APO Administration liveCache/COM Routinen | Monitor | Integration | User data	LC 10 |Integration | User data
2.	Maintain password 'sap' for liveCache user 'SAPR3' / user 'SAP<LC-SID>' if SCM 4.0 was built up by a new installation			Tools | APO Administration liveCache/COM Routinen | Monitor | Integration | User data	LC 10 |Integration | User data
3.	Maintain /SAPAPO/DELETE_LC_ANCHORS in field 'Follow-up processing' of section 'Initialize liveCache'			Tools | APO Administration liveCache/COM Routinen | Monitor | Integration | Administration report	LC 10 |Integration | Administration report
4.	Flag checkbox 'Activate Alert Monitoring'			Tools | APO Administration liveCache/COM Routinen | Monitor | Integration | Alert Monitoring	LC 10 |Integration | Alert Monitoring

3.2.5 liveCache 7.4 Parameters

Purpose
If necessary.

Procedure
For configuring the liveCache you have to maintain the liveCache Kernel parameters.
In order to get information about these liveCache parameters use Transaction LC10, logical connection LCA.
Choose liveCache: Monitoring | Current Status | Configuration | Parameters | Currently , for maintaining livaeCache: Monitoring | Administration | Parameters.

LIVECACHE PARAMETERS

Parameter	Meaning	Default	Current
MAXUSERTASKS	maximum number of liveCache users	#APO work processes*2 + Reserve	
MAXLOCKS	maximum number of simultaneous line locks		
CACHE_SIZE	The size of the data cache in pages		
MAXDATAPAGES	Maximum number of data devspaces		
MAXDATADEVSPACES	Maximum number of data devspaces		
MAXCPU	Maximum of used CPU of liveCache		
OMS_HEAP_LIMIT	Maximum of allowd size of heap of COM Routines		
OMS_HEAP_COUNT	Number of OMS Heaps	1	
LOG_MODE	Logging Mode	Single	

Parameter	Meaning	Default	Current
LOG_IO_QUEUE	Size of Log Queue in Pages	100	
DIAG_HISTORY_PATH	Directory in which crash histories (Dumps, diagnosis filesetc.)are saved.	<RUNDIRECTORY>/DIAGHISTORY	
DIAG_HISTORY_NUM	Number of crash histories (logs)	2	

LIST OF SAPNET NOTES

Topic	Note Number
liveCache Parameters	490958
Parameters for liveCache 7.4	496318
liveCache Parameters	424886
OMS_HEAP_COUNT	516661

3.3 BW within APO

Purpose
Schedule weekly running job.

Procedure
Schedule a job with the report SAP_ANALYZE_ALL_INFOCUBES weekly with an initial sample size of 10%. All other tables not related directly to APO must be analyzed by the SAPDBA weekly as well. It is important to finish the SAPDBA analysis before report SAP_ANALYZE_ALL_INFOCUBES starts.
Before you perform a refresh, please consider the following:
1. After the initial historical load or load of a significant amount of data, the optimizer statistics must be recalculated.
2. For small data loads, you do not have to analyze every load. These small loads will have little impact on the optimizer statistics.
Since BRCONNECT 6.10 Patchlevel 11 you can use also this tool if you use Oracle as APO DB.

RELEVANT SAPNET NOTES

Topic	Note Number
Report SAP_ANALYZE_ALL_INFOCUBES	421795
BW 2.0 Oracle features	314719
BRCONNECT for Oracle	428212
Increased memory consumption with Oracle 8	128221
Performance problems/ Overview of Notes	354080
Oracle DB Statistics for BW tables	129252
CBO: Weekly scheduling with SAPDBA	132861
CBO: Parallel generation of optimizer statistics	184513
CBO: Statistics creation on partioned tables	336325

3.4 Software Maintenance

Purpose
<regularly or if recommended>

Procedure
<Description of how to install a new Patch and who is responsible>

1. Support Packages
2. Database Patch
3. SAP Kernel Patch
4. COM Routine Patch
5. liveCache Kernel Patch
6. Optimizer Patch
7. Frontend - OCX-Patch
8. Frontend SAPGUI Patch

RESPONSIBILITIES

Patch	Responsible	How To Do
Support Packages		
Database Patch		
SAP Kernel Patch		
liveCache Interface library (dbadaslib)		
COM Routine Patch		
liveCache Kernel Patch		
Optimizer Patch		
Frontend OCX Patch		
Frontend SAPGUI Patch		

3.5 Monitoring

3.5.1 Application Log

Purpose
regularly check
delete once a day

Procedure
The following table lists the necessary actions.
Please plan background job for deleting application log periodically once a day.

MAINTANING APPLICATION LOG

Task	Responsible	Frequency	Menu Path	Transaction
Display Application Log in APO System		<regularly >	Tools|APO Administration|Integration|Monitor|Application Log|Display Entries	/SAPAPO/C3
Display Application Log in R/3 Systems		<regularly>	APO Administration|Monitor|Application Log|Displa Entries	CFG1 or Transaction CIF | Monitoring| Application Log| Display Entries
Delete Application Log in APO System		<once a day entries known entries older as one week>	Tools|APO Administration|Monitor|Application Log|Delete Entries	/SAPAPO/C6, Background job report /SAPAPO/RDELLOG
Delete Application Log in R/3 Systems		<once a day known entries older as one week>	Logistic| central Function|Supply Chain Planning Interface|Monitoring|Application Log|CFGD - Delete Entries	CFGD or Background job report RDELALOG or CIF|Monitoring|Application Log|Delete Entries
Customizing of Application Logging in APO System		<Initialization and if necessary>	Tools| APO Administration| Integration|Monitor|Application Log|Switch on System Logging	/SAPAPO/C41
Customizing of Application Logging in R/3 System		<Initialization and if necessary>		CFC2 or Transaction CIF| Monitoring|Settings|User Parameters
Switch on Debugging Option in APO System		in special cases for analyzing application errors		/SAPAPO/C41

Task	Responsible	Frequency	Menu Path	Transaction
Switch on Debugging Option in R/3 Systems		in special cases for analyzing application errors		CFC2 or transaction CIF|Monitoring|Settings|User Parameters

3.5.2 liveCache Message Log

Purpose
Frequently or in emergency cases

Procedure
Every liveCache system message will be stored in a log file called knldiag. You can check this file within the APO System with help of transaction LC10 | Problem Analysis | Messages | Kernel | Current. The knldiag file is written wrap around. Be sure that the knldiag file is renamed to knldiag.old during restart. For error analysis purposes, it is important to save the knldiag file. On the operating system level, you will find the file in directory /sapdb/data/wrk/<SID>.
In the case of a liveCache crash, the knldiag and all other protocols will be moved into the directory specified in the parameter DIAG_HISTORY_PATH (liveCache 7.4)
Another important log file is the knldiag.err. Every error is documented in this file. You can also check this file within the APO System. In error cases, it is important for analysis. It is located in the same directory like the knldiag file.
In the case of a liveCache crash, all message files and other important data needed for later analysis will be stored in a directory specified by the liveCache parameter DIAG_HISTORY_PATH.
Furthermore, the initialization protocol of liveCache exists. You have to check it after every initialization within the APO System with the help of transaction LC10. On the Operating System Level, you will find it in the directory /sapdb/<SID>/db as file lcinit.log.

The following table lists the necessary actions.

SMAP TASK

Task	Responsible	Frequency	Menu Path	Transaction
Check liveCache Initialization Protocol		<after initialization>	Tools| APO Administration|LiveCache/COM Routines|Monitor|liveCache: Monitoring| Problem Analysis| Logs | Operating	LC10| liveCache: Monitoring| Problem Analysis| Logs | Operating
Check liveCache Kernel Log		<in error situation>	Tools| APO Administration|LiveCache/COM Routines|Monitor|liveCache: Monitoring| Problem Analysis| Messages | Kernel	LC10| liveCache: Monitoring| Problem Analysis| Messages | Kernel
Check liveCache error log		<frequently>	Tools| APO Administration|LiveCache/COM Routines|Monitor|liveCache: Monitoring| Problem Analysis| Messages | Kernel	LC10| liveCache: Monitoring| Problem Analysis| Messages | Kernel | Error
Activate Kernel trace		<only in coordination with SAP AG>		

3.5.3 liveCache Monitoring

Purpose
Frequently

Procedure
For Monitoring liveCache issues you can use transaction LC10 in APO System.

Database Manager DBMGUI on Operating System level

The Database Manager consists of a server and a client part. The server part (DBM server) is responsible for functionality. The client part consists of a graphical user interface, called the Database manager (DBMGUI), and a command line version, called the Database Manager (DBMCLI).

Recommendation:

Please do not use DBMGUI or DBMCLI for starting, stopping of liveCache. For recovery purposes use DBMGUI only for restoring Data Backup.

LIVECACHE MONITORING TASKS

Task	Responsible	Frequency	Menu Path	Transaction
System Error Messages		<frequently>	Tools| APO Administration|LiveCache/COM Routines|liveCache:Monitoring| Problem Analysis| Messages| Kernel	LC10| liveCache:Monitoring| Problem Analysis| Messages| Kernel
Data Cache Utilization and Data Cache Hitrate		<frequently>	Tools| APO Administration|LiveCache/COM Routines| liveCache: Monitoring| Current Status| Performance Overview	LC10| liveCache: Monitoring| Current Status| Performance Overview
Check Data Volume filling level		<frequently>	Tools| APO Administration|LiveCache/COM Routines|Current Status| Memory Areas | Data Area	LC10| liveCache: Monitoring| Current Status| Memory Areas | Data Area
Status, Size and number of Volumes,adding Volumes,Display Kernel parameters		<daily>	Tools| APO Administration|LiveCache/COM Routines|liveCache: Monitoring| Configuration	LC10| liveCache: Monitoring| Current Status| Configuration
Check liveCache Initialization Protocol		<after Initialization>	Tools| APO Administration|LiveCache/COM Routines| liveCache: Monitoring| Problem Analysis| Logs| Operating	LC10| liveCache: Monitoring| Problem Analysis| Logs| Operating
Check liveCache		<if necessary>		/SAPAPO/OM13

3.5.4 liveCache Data Volume Filling Level

Purpose
<frequently>

Procedure
Please check liveCache Data Volume Filling level carefully. Application errors may occur if the filling level is higher than 90%. The size of the liveCache Data Volumes should be al least 4* data cache size.

LIVECACHE DATA VOLUME FILLING LEVEL

Task	Responsible	Frequency	Menu Path	Transaction
Check liveCache Data Volume Level		<frequently>	Tools| APO Administration|LiveCache/COM Routines|liveCache: Monitoring| Current status| Memory Areas | Data Area	LC10| liveCache: Monitoring| Current status| Memory Areas | Data Area
Add Data Volume		<if necessary>	Tools| APO Administration|LiveCache/COM Routines|liveCache: Monitoring| Administration| Configuration| Volumes	LC10| liveCache: Monitoring| Administration| Configuration| Volumes

3.5.5 liveCache Administration Log

Purpose
<Frequently>

Procedure
The reported actions are:
- Changes in logmode of liveCache
- Initializations
- Recovery

The table lists for each action the rows:
start and end time, duration of an action, action, number of processed records for User, return code etc.

SMAP TASK

Task	Responsible	Frequency	Menu Path	Transaction
Check history of liveCache		<daily>		/sapapo/om11
Delete history of liveCache		<if necessary>		/sapapo/om12

3.5.6 liveCache Heap

Purpose
<if necessary>

Procedure
For processing COM Routines liveCache uses Heap Memory. You have to limit this Heap Memory with help of liveCache parameter OMS_HEAP_LIMIT.

Determine the heap usage via LC10 | liveCache: Monitoring | Current Status | Memory Areas | Heap Usage .
The SIZE value of the MASTER HEAP reflects the memory dynamically allocated for the liveCache heap from the operating system, which is not returned to the operating system until the liveCache stops.
There has to be enough memory for heap , liveCache and perhaps other applications on this server.

Pay attention if you use or plan to use AWE. A check of sizing could be useful. Maybe that it would be better to use a Unix (64 bit Operating) system.
Pay attention if the sum of OMS_HEAP_LIMIT and Data Cache size is bigger than main memory of the liveCache server. With Windows there is a technical limit for process memory (3GB, even with AWE)

You can check if there was COM Routine error in LC10| liveCache: Monitoring| Problem Analysis| Performance | OMS Monitor in tabstrip Entire View or by checking COM Traces.

MEMORY USAGE ON LIVECACHE SERVER

Application	How to evaluate	Memory consumption in MB
Memory of Server	transaction LC10| liveCache: Monitoring|ProblemAnalysis|Messages| Kernel; search for string 'Total physical memory'	
Parameter OMS_HEAP_LIMIT	transaction LC10| liveCache: Monitoring| Current Status| Configuration| Parameters| Current	
Reserved Heap Memory	Report /sapapo/om_lc_mem_monitor , in the title value 'R' (Reserved)	
others	Task manager with Windows or Unix-specific tools	

LIST OF SAPNET NOTES

Topic	Note Number
Heap Memory	337445
Additional applications on the LiveCache server	392852
Initial parameterization of liveCache 7.4	490958

3.5.7 Consistency Checks

Purpose
<Frequently and additionally after abnormal system events>

Procedure
Frequently check external consistency at least weekly down to daily if needed.

After abnormal system events there may be inconsistencies
- internal inconsistencies between APO DB and liveCache
- external inconsistencies between the APO System and the dedicated systems.

As a rule first check and restore internal and then check and restore external consistency.

For additional information please use the best practice document "Internal and External Consistency for SAP APO (3.x) / mySAP SCM (4.0)", which can be found in service marketplace service.sap.com/scm -> Best Practices for Solution Management: mySAP SCM.

SMAP TASK

Task	Responsible	Frequency	Menu Path	Transaction
Check internal consistency				/SAPAPO/OM17
For APO 3.0 only: Check internal consistency of resources				/SAPAPO/REST02
Check internal consistency of DP data				Report /SAPAPO/TS_LCM_CONS_CHECK_ALL
Repair DP data				Report /SAPAPO/TS_LCM_CONS_CHECK
Check external consistency		<weekly to daily>		/SAPAPO/CCR or Report /sapapo/cif_deltareport3

LIST OF SAPNET NOTES

Topic	Note Number
Description of consistency Checks	425825

3.6 liveCache Administration Tool

Purpose
<if necessary>

Procedure
There is a liveCache administration tool on operating system level called Database Manager (DBM).
DBM works with Client/Server architecture. There are two user interfaces :
- the graphical tool called DBMGUI, which is available on Windows Platforms only,
- the command line oriented tool called DBMCLI.

After installing DBMGUI software on the frontend you can start DBMGUI. You can administer as much liveCache instances with one DBMGUI as you like. Every liveCache you want to administer has to be registered first.

For that proceed as follows:
1. Start DBMGUI and choose in the menu Instance | Register instance (Add .. as of DBMGUI 7.5)
2. Enter the name of the liveCache server and press Enter. You will get a list of all available liveCaches on this server.
3. Choose the liveCache instance.
4. Choose function Register.
5. Enter a significant name for this liveCache.
6. Enter the name of the DBM user and his password.
7. Choose ok.

The tool DBMCLI can be used from every frontend.
The following table includes a list of useful DBMCLI commands.

DBMCLI OPTIONS

Task	Option
show version	dbmcli -d <lC SID> -n <lChost> -u control,control show version
show active tasks	dbmcli -d <lC SID> -n <lChost> -u control,control show active
show tasks	dbmcli -d <lC SID> -n <lChost> -u control,control show tasks
Storing DBM user data for DBMCLI using	dbmcli -d <lC SID> -n <lC host> -us control,control
List of possible DBMCLI commands	dbmcli -d <lc SID> -n <lC host>
Show DBROOT-Directory, liveCache Kernel versionand state	dbmcli -d <lC SID> -n <lC host> db_enum
execute an administration command	dbmcli -d <lC SID> -n <lC host> -u <control user>, <password> <administration command>

Task	Option
Execute a SQL command	dbmcli -d <lC SID> -n <lC host> -uSQL <SQL userid,<password> sql_execute <SQL command>
Check AutoLog Status	dbmcli -d <lC SID> -n <lC host> -u control,control autosave_show
Switch On AutoLog	dbmcli -d <lC SID> -n <lC host> -u control,control autosave_start
Switch Off AutoLog	dbmcli -d <lC SID> -n <lC host> -u control,control autosave_stop
Start liveCache	dbmcli -d <lC SID> -n <lC host> -u control,control db_start
Start liveCache to status Online (Warm)	dbmcli -d <lC SID> -n <lC host> -u control,control db_warm
Stop or (Start) liveCache to status cold	dbmcli -d <lC SID> -n <lC host> -u control,control db_cold
Stop liveCache to status offline	dbmcli -d <lC SID> -n <lC host> -u control,control db_offline

3.6.1 Define a liveCache Backup Medium

Purpose
<if necessary>

Procedure
For defining a medium call on your Windows client tool DBMGUI.
1) Choose from the menu of DBMGUI Instance | Configuration | Backup Media
2) Choose Media | New | Medium
3) Enter a significant media name
4) Enter the properties of this backup media. These are two steps.
5) Choose Extended for the next step.
6) Save the backup medium.

SAPNet Note 338903 describes how to configure using external backup tools with backint interface.

LIST OF SAPNET NOTES

Topic	Note Number
SAP DB: Backint for SAP DB connection	338903

3.6.2 SQL Studio

Purpose
<once for configuration>

Procedure
Please pay attention to the following notes.

LIST OF SAPNET NOTES

Topic	Note Number
Setting up DB connection in OSS	202344
SQL studio + Database Manager GUI installation	386714

3.6.3 Delete Transactional Simulations

Purpose
<frequently>

Procedure
For technical and business reasons it is recommended to schedule daily report /SAPAPO/OM_REORG_DAILY as described in SAPNet note 139558.
For checking if there are old versions call transaction LC10 | liveCache: Monitor | Problem Analysis| Performance| OMS versions. There should be no versions older than 8 hours.
Furthermore the report /SAPAPO/OM_DELETE_OLD_SIMSESS has to be scheduled every 30 minutes, see SAPNet Note 490992.

SMAP TASKS

Task	Responsible	Frequency	Menu Path	Transaction
Schedule report /SAPAPO/OM_REORG_DAILY for background running		<daily>		SM36
Schedule report /SAPAPO/OM_DELETE_OLD_SIMSESS for background running		<everey 30 minutes>		SM36

LIST OF SAPNET NOTES

Topic	Note Number
Scheduling report /SAPAPO/OM_REORG_DAILY	139558
Earlier deletion of hanging transactional simulations	490992

3.7 Logging of liveCache 7.4

Purpose
<configuration once>
<check frequently>

Background
The size of Log Volumes is highly dependent of changing activity in liveCache. The default value is 2 GB. To avoid system standstill because of filled log Volume you should use AutoLog option which you can switch with help of DBMGUI. If Auto Log is switched on liveCache will automatically backup Log Volumes to predefined medium if a Log segment is filled up. By default Log Segment size is equal to 1/3 of Log size. This value should only be changed in contact with SAP AG.

3.8 Backup

3.8.1 Backup liveCache 7.4

Purpose
<frequently>

Procedure
You can backup liveCache with help of DBMGUI. Before you can backup you have to define mediums as described above.
The following tools are available:
- Report RSLVCBACKUP as of APO 3x, see SAPNote 455154
- Transaction DB13C as of SCM 4x, see SAPNote 431508.

There are different types of backups :
- Complete
  complete backup of data of liveCache
- Incremental
  incremental backup of changed data since last full backup of liveCache
- Log
  backup of Archive Log Area
- AutoLog
  after activation of this option there will be an automatic backup of every completed log segment. This option is recommended to avoid Log Full situations.

LIST OF SAPNET NOTES

Topic	Note Number
Save the liveCache with report RSLVCBACKUP	455154
SAP WebAS - using DB13C or DB13 for SAP DB systems	431508

3.9 Verify of liveCache

Purpose
<after liveCache backup>

VERIFY should not be executed directly on the productive liveCache, instead it should be executed on a second system using liveCachebackup (SAVE DATA).

Procedure
Please follow the instructions in SAP Note 521870.

SMAP TASK

Task	Responsible	Frequency	Menu Path	Transaction
Verify of liveCache		<Once per week during low system activity on a test liveCache instance>		DBMGUI

LIST OF SAPNET NOTES

Topic	Note Number
Consistency check (verify) of a liveCache	521870

3.10 Initialization of liveCache

Purpose
After crash of liveCache only if no recovery is possible.

Procedure
An initialization of the liveCaches must be carried out only according to a recommendation and with help of SAP AG.

3.11 Recovery for liveCache 7.4

3.11.1 Recovery with liveCache 7.4 in Case of a Soft Crash

Purpose
<after liveCache crash>

Procedure
For recovery purposes use DBMGUI and transaction LC10.

RECOVERY FOR LC 7.4 IN CASE OF A SOFT CRASH

Step	Task	Responsible	Comment
Stop data transfer from dedicated system			
Lock APO system against users			
Find out and solve the reason for the crash			
Start liveCache with LC10 or DBMGUI			
Restart Data transfer			
Unlock APO user			

3.11.2 Recovery with liveCache 7.4 in Case of a Hard Crash

Purpose
<after liveCache crash>

Procedure
For recovery purposes use DBMGUI and transaction LC10.

SMAP TASKS

Step	Task	Responsible	Comment
Stop of data transfer from dedicated systems			
Lock APO System against users			
Start restore of data and log backups with help of DBMGUI in case of a disk crash			
Recovery of Logs or restore incremental backups			
Restart liveCache with help of transaction LC10 or with DBMGUI			

Step	Task	Responsible	Comment
Unlock APO System			
Restart data transfer			

3.12 Consistency Check

Purpose
Even after a recovery there could be internal and external inconsistencies in your system landscape.

Procedure
Before go live, start inconsistency checks based on SAP Note 425825.

IMPORTANT NOTES

Topic	Note Number
Consistency Checks	425825

3.13 Periodic Background Jobs

Purpose
<regularly>

Procedure
Use transaction SM36 for schedule background jobs.

BACKGROUND JOBS FOR MAINTENANCE OF APO SYSTEMS

Function	Report	Period	System
qRFC Outbound Alert Monitor	/SAPAPO/RCIFQUEUECHECK	15 min	APO
qRFC Inbound Alert Monitor	/SAPAPO/RCIFINQUEUECKECK	15 min	APO
Delete Application Log	SBAL_DELETE	weekly	APO and R/3
Check consistency of Integration models (as of PI2002.1)	RCIFIMAX	weekly	R/3
Delete obsolete transactional simulations	/SAPAPO/OM_REORG_DAILY	daily	APO
Delete obsolete transactional simulations without relations	/SAPAPO/OM_DELETE_OLD_SIMSESS	every 30 min	APO
Delete obsolete Demand Job Logs older than 8 days	/SAPAPO/TS_BATCH_LOGFILE	daily	APO

LIST OF SAPNET NOTES

Topic	Note Number
R/3 Standard Jobs	16083
Demand Planning delete job logs	512184
Earlier deletion of hanging transactional simulations	490992
Scheduling report /SAPAPO/OM_REORG_DAILY	139558

3.14 List of Important APO Transactions

IMPORTANT ADMINISTRATION TRANSACTIONS - R/3 SYSTEMS

Topic	Responsible	Frequency	Transaction; Menu Path	Report
qRFC Monitor outbound		<daily>	SMQ1	
Definition and start of integration models, menu for qRFC monitor and application log			CFM1, CFM6 or Logistic | Central Functions | Supply Chain Planning Interface | Integration Model	
qRFC stop selected outbound queue		<if necessary>	SMQ1| Edit| Display selected queues| lock queues or stop immediately	RSTRFCQ1

Topic	Responsible	Frequency	Transaction; Menu Path	Report
qRFC start selected outbound queue		<if necessary>	SMQ1|Edit | Display selected queues| restart or activate	RSTRFCQ3
qRFC test and status of a selected outbound queue		<daily>	SMQ1	RSTRFCQ2
Display of all outgoing queues		<if necessary>	CFS0 or CFS1	
Customizing of Application Logging		<once and if necessary>	CFC6 or CIF|Monitoring|Settings| User parameters	
Display application log		<daily>	CFG1 or CIF| Monitoring|Application Log| Display entries	
Delete application log after checking		<daily>	CFGD or CIF|Monitoring|Application Log| Delete Entries	RDELALOG
Setting of Debugging Option		<if necessary>	CFC2 or CIF|Monitoring|Settings|User parameters	
Define and assign logical system to client		<in implementation phases>	SALE	
Check data transfer channels		<frequently>	CFP2	

IMPORTANT ADMINISTRATION TRANSACTIONS - APO SYSTEM

Topic	Responsible	Frequency	Transaction, Menu Path	Report
qRFC Monitor outbound		<daily>	SMQ1 /SAPAPO/CQ	
qRFC Stop selected Outbound queue		<if necessary>	SMQ1	RSTRFCQ1
qRFC Start selected Outbound queue		<if necessary>	SMQ1	RSTRFCQ3
qRFC test and status of a selected Outbound queue				RSTRFCQ2
qRFC Alert monitor		<schedule for running every 15 minutes>	/SAPAPO/CW or Tools|APO Administration|Integration|Monitor|qRFC Alert	/SAPAPO/RCIFQUEUECHECK
Display entries of application log		<daily>	/SAPAPO/C3 or Tools| APO Administration| Integration| monitor| Application Log| Display Entries	
Delete of Application log entries		<daily as background job>		/SAPAPO/RDELLOG
Customizing of Application logging		<Initialization and if necessary>	/SAPAPO/C41 or Tools| APO Administration| Integration| Monitor| Application Log| Switch on System Logging	
Setting of Debugging Option in APO		<in case of error analyzing>	/SAPAPO/C4 or Tools| APO Administration| Integration| Monitor| Application Log| Switch on System Logging	
Check external consistency between APO and R/3 Systems		<after detection of application errors, after recovery>	/SAPAPO/CCR	/SAPAPO/cif_deltareport3

Topic	Responsible	Frequency	Transaction, Menu Path	Report
Define and assign logical system to client		<for initialization>	SALE	
Define Business system group		<for initialization>	/SAPAPO/C1	
Assign logical system to Business system group		<for initialization>	/SAPAPO/C2	
Define distribution scenario		<for initialization>	/SAPAPO/CP1	
Generate/Delete distribution definition		<for initialization>	/SAPAPO/CP2	
Check data transfer channels			/SAPAPO/CQ	

IMPORTANT ADMINISTRATION TRANSACTIONS - APO LIVECACHE

Topic	Responsible	Frequency	Transaction, Menu Path	Report
liveCache Administration (Starting, stopping, initialization)		<if necessary>	LC10| liveCache: Monitoring	
liveCache configuration such as parameters, Volumes		<if necessary>	LC10| liveCache: Monitoring| Current Status| Configuration	
Checking processes and Memory Management		<daily>	LC10| liveCache: Console	
Checking Version of COM routines		<if necessary>	/sapapo/OM13	
Maintain liveCache connections		<if necessary>	LC10| lIntegration	
Checking liveCache Connection, status, COM Routines		<after installation, upgrade, Support Packages, Troubleshooting>		/SAPAPO/OM13
Check internal consistency between APO DB and liveCache	<Integration Administrator>	<after detection of errors, after recovery>	/SAPAPO/OM_LC_DB_SYNC_PREPARE	/SAPAPO/OM_LC_DB_SYNC_
Delete anchor tables, copying master data back into live cache during initialization		<is to be maintained in the initialization procedure of liveCache, table DBCON>	LC10| liveCache< Create/Change or Delete Connection| liveCache Initialization| Processing	/SAPAPO/delete_lc_anchors

Topic	Responsible	Frequency	Transaction, Menu Path	Report
Display COM Trace file		<if necessary>	TOOLS|APO Administration|LiveCache/COM-Routines|Tools|Display Trace File or /SAPAPO/OM01	
Maintain COM Trace level		<if necessary>	TOOLS|APO Administration|LiveCache/COM-Routines|Tools|Change Trace Level or /SAPAPO/OM02	
liveCache Data Browser			TOOLS|APO Administration|LiveCache/COM-Routines|Tools|Data Browser or /SAPAPO/OM16	

IMPORTANT ADMINISTRATION TRANSACTIONS - APO OPTIMIZER

Topic	Responsible	Frequency	Transation, Menu Path	Report
Optimizer log		<frequently such as weekly>	/SAPAPO/OPT11	
Display user list on optimizers		<if necessary>	/SAPAPO/OPT03	
Display optimizer versions		<if necessary>	/SAPAPO/OPT09	
Display processes		<if necessary>	/SAPAPO/OPT12	
Maintain master data for optimization server		<for initialization>	SPRO|SAP Reference IMG|APO Implement Guide|Advanc Pl. a.Opti.|Basic Settings|Optimization| Basic Functions| Maintain	
			Master Data for Parallel Optimization	
Maintain Parameter for Parallel Optimization		<for initialization>	SPRO|SAP Reference IMG|APO Impl. Guide|Advanc Pl. a.Opti.|Basic Settings|Optimization|Basic Functions|Maintain	
			Parameter for Parallel Optimization	
Switch on checking of optimizer server availability		<if necessary>	SPRO|SAP Reference IMG|APO Implement Guide|Advanc Pl. a.Opti.|Basic Settings|Optimization| Basic Functions| Maintain	
			Global Settings or /SAPAPO/COPT00	
Defining and Checking Optimizer RFC destinations			SM59	

4 qRFC

4.1 General qRFC Settings

4.1.1 Responsible Person in general

RESPONSIBLE PERSON

Responsible Person	Company

4.1.2 qRFC Instance Parameter Settings

Purpose
After reconfiguring and regularly.

Procedure
The following table gives you some hints for gateway parameter settings. They are to maintain for every instance which is used by qRFC.

IMPORTANT GATEWAY PARAMETER

Parameter	Meaning	Default Value	Recommendation
gw/max_conn	maximum number of allowd connections to a gateway of an instance		at least 1000 could be increased until 2000
gw/max_overflow_size	maximum Swap Space of CPIC requests on gateway for R/3 >=4.6D		25000000
gw/max_shm_req	maximum number of allowed CPIC connections to gateway for R/3 < 4.6D		400
rdisp/max_comm_entries	maximum number of connections to an application server	100	2000
rdisp/rfc_max_comm_entries	maximium number of RFC connections in relation to rdisp/max_comm_entries in percent	90	
rdisp/rfc_max_own_used_wp	maximum number of dialog work processes, which are allowd to use for RFC in relation to sum of work processes	75	
rdisp/rfc_min_wait_dia_wp	number of workprocesses which are not allowd for sending RFC requests	1	at least 5
rdisp/tm_max_no	maximum number of allowd connection to an instance		2000

LIST OF SAPNET NOTES

Topic	Note Number
Parameters for qRFC	384971
Optimal parameters for qRFC	384077

4.2 APO Monitoring of qRFC

4.2.1 Responsible Persons

RESPONSIBLE PERSON

Responsible Person	Company

4.2.2 APO-Monitoring qRFC Outbound Queues

Purpose
Frequently and if there are problems in data transfer to external systems.

Procedure
Check qRFC Outbound Queue in APO System and R/3 Systems.

SMAP TASKS

Task	Responsible	Frequency	Menu Path	Transaction
Checking APO qRFC Outbound Queues		<frequently>	Tools | APO Administration | Monitor | qRFC Monitor	SMQ1
Stopping selected Outbound Queues		<if necessary>	Tools | APO Administration | Monitor | qRFC Monitor	SMQ1
Starting selected Outbound queues		<if necessary>	Tools | APO Administration | Monitor | qRFC Monitor	SMQ1

If there is more than one integration model, there may be different qRFC Queues. You can identify APO queues by the naming convention. The names start with CF*.

4.2.3 APO-Monitoring qRFC Inbound Queues

Purpose
<initialization>

Procedure
As of PlugIn 2001.1 and APO Support Package 14 you can activate Inbound Queues. For registration of Inbound Queues use transaction SMQR. Default setting are:

Maxtime 5 maxtime in seconds
Nretry 30 number of retrys of scheduler
Tdelay 300 delay between two tries

SMAP TASK

Task	Responsible	Frequency	Menu Path	Transaction
Checking APO qRFC Inbound Queues		<frequently>		SMQ2
Stopping selected Inbound Queues		<if necessary>		SMQ2
Starting selected Inbound queues		<if necessary>		SMQ2
Customize QIN Scheduler		<if necessary>		SMQR

LIST OF SAPNET NOTES

Topic	Note Number
Activate Inbound Queues	416475
Configuration of QIN Scheduler	369007
Inbound Queuesfor Automotive	430725
SCM Queuemanager	419178

4.2.4 APO qRFC Alert Monitor

Purpose
qRFC Alert Monitor

Procedure

SMAP TASK

Task	Responsible	Frequency	Menu Path	Transaction
Maintain variant for report /SAPAPO/RCIFQUEUECHECK		<once during implementation and if necessary>	ABAP Workbench| Development| ABAP Editor| Variant create	SE38
Schedule background job for report /SAPAPO/RCIFQUEUECHECK		<running period 15 min>	CCMS| Jobs| Definition	SM36, /sapapo/cw
Schedule background job for report /SAPAPO/RCIFINQUEUECHECK		<running period 15 min>		SM36
Check protocols of this background job		<frequently>	CCMS| Jobs| Maintenance	SM37

4.2.5 R/3 System Integration Model Generation and Activation

Purpose
<checking>

Procedure
For performance and administration handling reasons it is recommended to define separated integration models for master and transaction data. Therefore customer should have more than one integration model.
Incremental data transfer of master data is basically controlled with the transaction CFC5 (CFC9 as of PlugIn 2002.2). This transaction defines whether changes to material masters, customers and vendors are transferred to APO system immediately (in real-time, directly when updating data in the R/3 system), periodically or not at all. Depending on the amount of changes, the immediate data transfer may impact the performance of the system, so in many cases the periodic data transfer is preferred. However, settings for ALE change pointers must also be maintained if this method is used.

Please maintain a list of all relevant Integration Models and their data in your dedicated R/3 Systems.

SMAP TASKS

Task	Responsible	Frequency	Menu Path	Transaction
In R/3 System: Check Integration Models			Logistics | Central Functions | Supply Chain Planning Interface | Core Interface Advanced Planner and Optimizer | Integr	CFM1, CFM2
In R/3 System: Check period of scheduled job: RIMODGEN				SE16, Table TBTCP, look for different variant of scheduled report RIMODGEN, or transaction SM37
In R/3 System: Check period of scheduled job: RIMODAC2				SE16, Table TBTCP, look for different variant of scheduled report RIMODGEN, or transaction SM37
In R/3 System: Customizing of transfering of data changes				CFC5 (CFC9 as of PlugIn 2002.2)

4.3 Relevant SAPNet Notes

RELEVANT SAPNET NOTES

Topic	Note Number
Queue status in SMQ1, SMQ2 and table ARFCRSTATE	378903

5 SAP Technology Components

5.1 Internet Transaction Server (ITS)

5.1.1 ITS Performance Monitoring

Purpose
Regular ITS Monitoring

Procedure
Using ITS Admin Instance
ITS monitoring in the transaction RZ20

SMAP TASKS

Task	Responsible	Frequency	Menu Path	Transaction
ITS Admin Instance				
Monitoring the ITS				RZ20

5.1.2 ITS Backup

Purpose
Web-Server / ITS Backup

Procedure
Customer specific

SMAP TASK

Task	Responsble	Frequency	Menu Path	Transaction
WEB Server Backup				
ITS Backup				

5.1.3 Relevant SAPNet Notes

LIST OF SAPNET NOTES

Topic	Note Number
ITS HTTP Compression	321426
Memory Usage Optimization	207040
Maximum number of conversation exceeded	316877
Number Of RFC/CPIC Connections	314530
Number of RFC/CPIC connections for external clients	210890
RFCOSCOL for NT servers using a gateway	202934
ITS Performance Monitoring	338873
Entering ITS server in OSS for PCanywhere access	367665
Documentation on ITS and the SAP@Web Studio	86334
ITS Preclarification	183845
Maint. strategy: Internet Transaction Server (ITS)	197746
How to run procmon?	202974
Reading ITS- and Webserver-Logfiles within R/3	214251
BBP/CRM Support Packages: publishing ITS files	313486
Publishing IAC objects	325149
ITS patch installation of CAR packages	331407
Activating the AGate Performance Monitoring	334987
ITS Patch installation of kernel files	335521
Frontend printing with HTML GUI	351230
ITS version as of Release 46D	366052