Contents

SAP Architecture

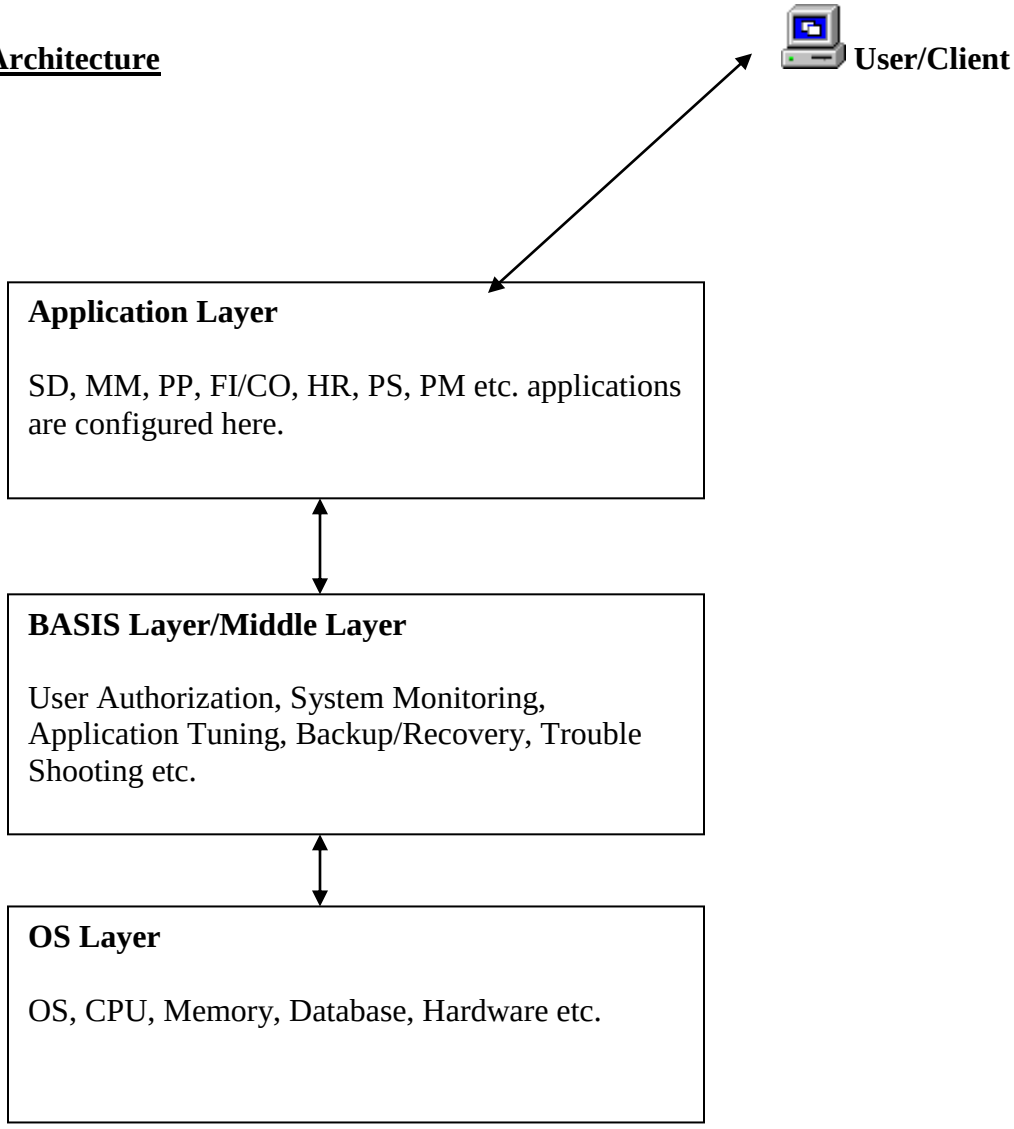


Fig- SAP Architecture

Explanation:
When any user tries to access the application like SD, MM, PP, FI/CO , they first touch the application layer which contains the required data and configuration.
In order to access the Application, the user has to be authorized, which is done at Middle layer.
Similarly if there is an issue for server like at OS, at Database or at Hardware level, then Middle layer people have to identify and direct it to the corresponding responsible person to look at the issue.

Because these Middle layer people sit in the middle and look to both sides and trouble shoot the problem at Application level and OS level as per the issue, these people are called BASIS Admin.

SAP Instances

SAP instance defines a group of resources such as memory, work processes and so on, usually in support of a single application server or database server within a client/server environment. Application servers share the same memory areas and are controlled by the same dispatcher process. There are 3 types of Instances available in SAP system as defined below.

1. Central Instance (Unique Instance or SID name for a SAP Server)
2. Database Instance (Which contains data with its own SID)
3. Dialog Instance (Used for Load balancing purpose when needed)

SAP SID: **3 Alphanumeric Charaters** except some reserved ones.
SID may look like DEV, QAS, PRD, D01, Q01, P01 like this.

System number: System number is the number which differentiates between multiple instances in a single host.
System nr varies from **00 -99** (75 and 99 are reserved for TCP/IP use)

Work processes

There are different types of work process on which SAP Instance depends to run as described below

- Dialog Work process(D) :- Used by frontend users or frontend process every dispatcher requires at least two dialog work processes
- Backgorund Work process (B) : Used for long running Jobs .At least two for each R/3 system (more than one allowed for each dispatcher)
- Enqueue Work process (E) :Used for Locking /Unlocking purposes
  only one enqueue work process is needed for each system
- Update work process (V1) : Used for critical updates into Database
  at least one for each R/3 System (more than one allowed for each dispatcher)
- Update workprocess (V2): Used for normal updates after critical updates
- Gateway work process (G) : allows communication between R/3, R/2 and external application systems.
- Spool work process (S) : Used for Printing from SAP at least one process
- Message Service (M): Used for messaging purpose. The message server (MS or M) communicates between the distributed dispatchers within the R/3 System and is therefore the prerequisite for scalability using several parallel-processing Application servers.

Active Servers (SM51)

Execute tcode SM51 at sap command line. It shows the active servers available for the Central Instance if there. See the fig below.

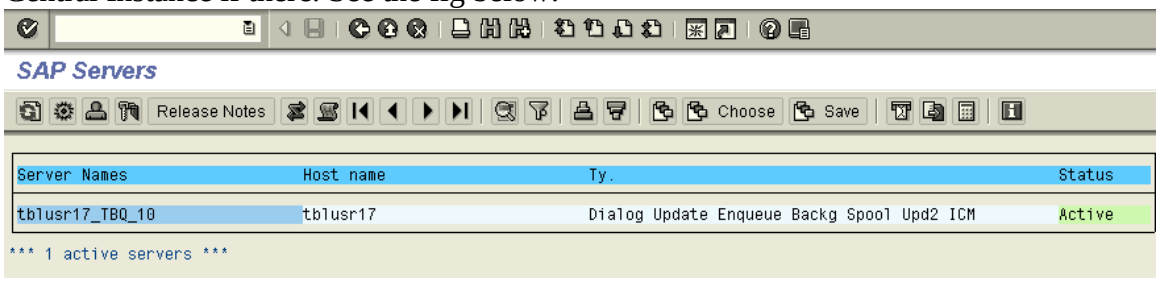


Fig - 1

There is only one active Server in above figure.

Work process overview (SM50)

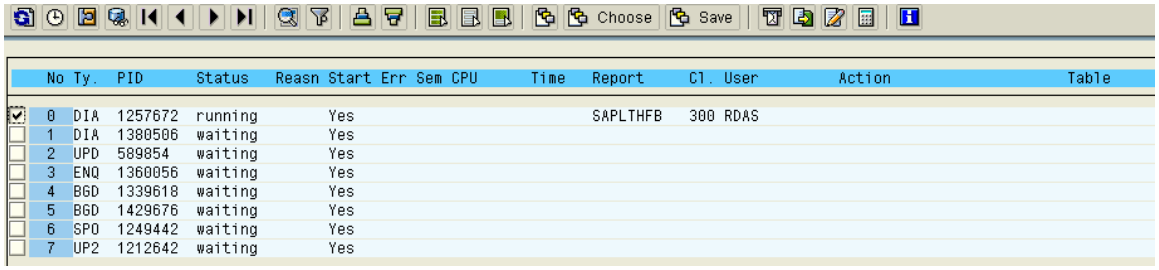


Fig -2

The following are the points we observe from SM50

a. No of each work processes like (Dialog, Background, Enqueue, Update, spool)
b. What is the processes id for each work process
c. Work process status, running or waiting
d. IF any error is there , reported in Err field
e. The field CPU show how much CPU time is consumed by the particular work process
f. Time: It shows how long the work process is running
g. Report: Which report is running currently by that work process
h. Client: Specifies the client no for which this process is busy
i. User: Specifies which user is running this report.
j. Action: What exactly going on during this process
k. Table: Which table is accessed during this process

The point to concentrate from SM50 is **Process Status, time, client and user**.

If Basis wants to cancel one running Work process then, select the work process by clicking on left check box as selected below

Now Go to Process -> Cancel Without Core.

Click on "Yes" to terminate the process.

Now you can see that process is in waiting status.

Click on Refresh button to get the updated status.

User Overview: SM04

SM04: This tcode is used to check the status of users i.e how many users have been logged in, how many sessions a user is working. See the fig below.

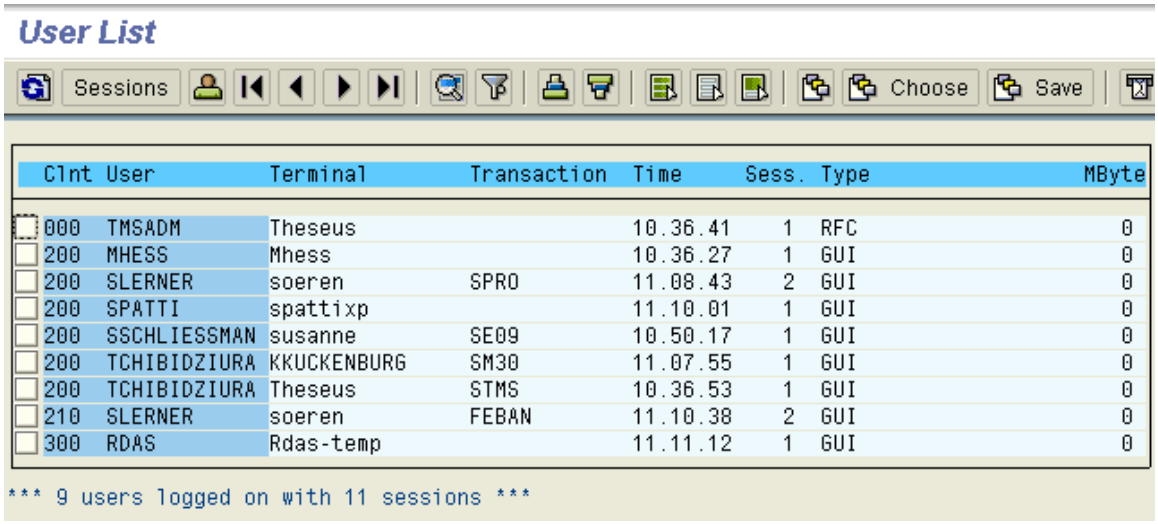
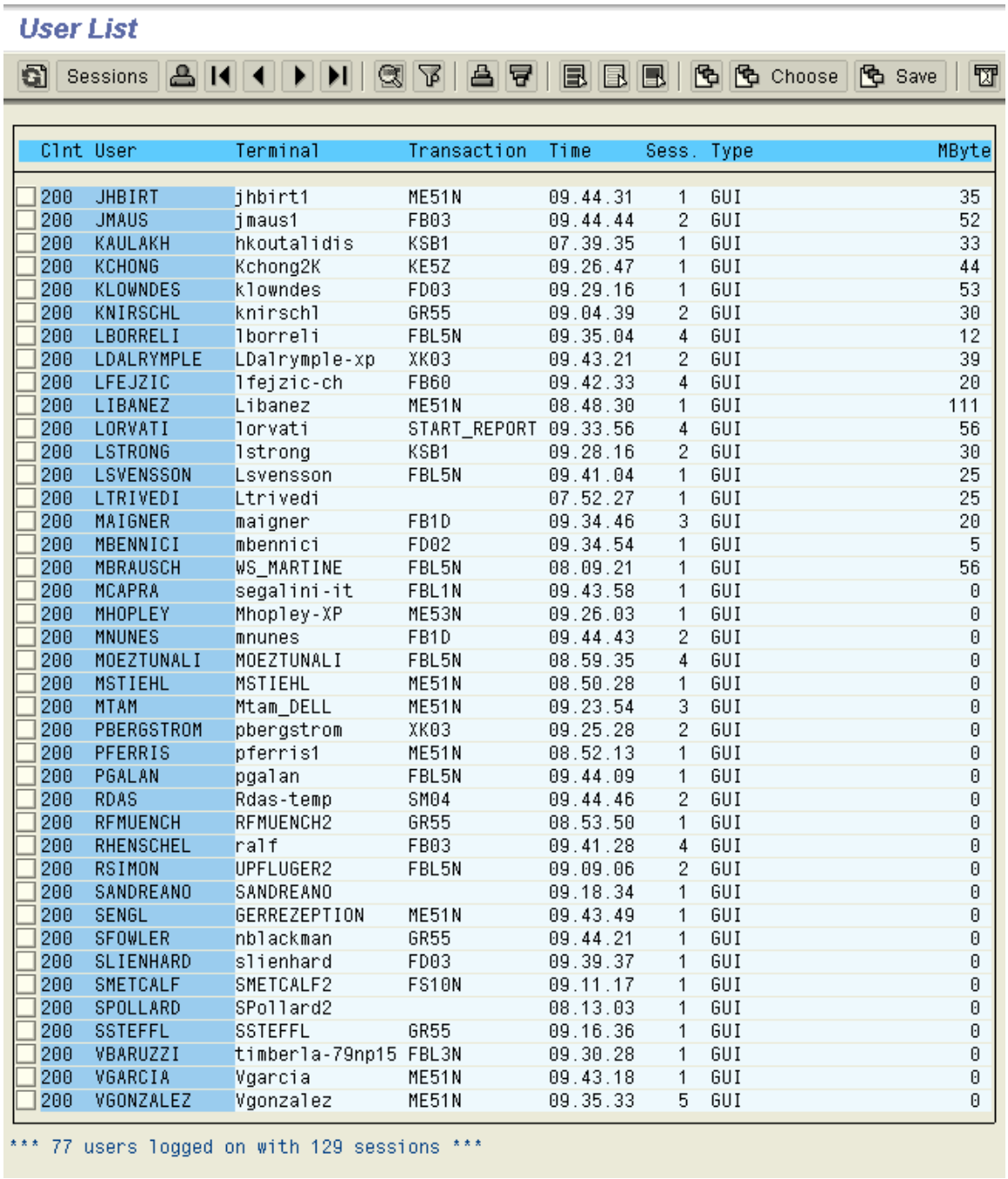


Fig-3



Clnt	User	Terminal	Transaction	Time	Sess.	Type	MByte
200	JHBIRT	jhbirt1	ME51N	09.44.31	1	GUI	35
200	JMAUS	jmaus1	FB03	09.44.44	2	GUI	52
200	KAULAKH	hkoutalidis	KSB1	07.39.35	1	GUI	33
200	KCHONG	Kchong2K	KE5Z	09.26.47	1	GUI	44
200	KLOWNDES	klowndes	FD03	09.29.16	1	GUI	53
200	KNIRSCHL	knirschl	GR55	09.04.39	2	GUI	30
200	LBORRELI	lborreli	FBL5N	09.35.04	4	GUI	12
200	LDALRYMPLE	LDalrymple-xp	XK03	09.43.21	2	GUI	39
200	LFEJZIC	lfejzic-ch	FB60	09.42.33	4	GUI	20
200	LIBANEZ	Libanez	ME51N	08.48.30	1	GUI	111
200	LORVATI	lorvati	START_REPORT	09.33.56	4	GUI	56
200	LSTRONG	lstrong	KSB1	09.28.16	2	GUI	30
200	LSVENSSON	Lsvensson	FBL5N	09.41.04	1	GUI	25
200	LTRIVEDI	Ltrivedi		07.52.27	1	GUI	25
200	MAIGNER	maigner	FB1D	09.34.46	3	GUI	20
200	MBENNICI	mbennici	FD02	09.34.54	1	GUI	5
200	MBRAUSCH	WS_MARTINE	FBL5N	08.09.21	1	GUI	56
200	MCAPRA	segalini-it	FBL1N	09.43.58	1	GUI	0
200	MHOPLEY	Mhopley-XP	ME53N	09.26.03	1	GUI	0
200	MNUNES	mnunes	FB1D	09.44.43	2	GUI	0
200	MOEZTUNALI	MOEZTUNALI	FBL5N	08.59.35	4	GUI	0
200	MSTIEHL	MSTIEHL	ME51N	08.50.28	1	GUI	0
200	MTAM	Mtam_DELL	ME51N	09.23.54	3	GUI	0
200	PBERGSTROM	pbergstrom	XK03	09.25.28	2	GUI	0
200	PFERRIS	pferris1	ME51N	08.52.13	1	GUI	0
200	PGALAN	pgalan	FBL5N	09.44.09	1	GUI	0
200	RDAS	Rdas-temp	SM04	09.44.46	2	GUI	0
200	RFMUENCH	RFMUENCH2	GR55	08.53.50	1	GUI	0
200	RHENSCHEL	ralf	FB03	09.41.28	4	GUI	0
200	RSIMON	UPFLUGER2	FBL5N	09.09.06	2	GUI	0
200	SANDREANO	SANDREANO		09.18.34	1	GUI	0
200	SENGL	GERREZEPTION	ME51N	09.43.49	1	GUI	0
200	SFOWLER	nblackman	GR55	09.44.21	1	GUI	0
200	SLIENHARD	slienhard	FD03	09.39.37	1	GUI	0
200	SMETCALF	SMETCALF2	FS10N	09.11.17	1	GUI	0
200	SPOLLARD	SPollard2		08.13.03	1	GUI	0
200	SSTEFFL	SSTEFFL	GR55	09.16.36	1	GUI	0
200	VBARUZZI	timberla-79np15	FBL3N	09.30.28	1	GUI	0
200	VGARCIA	Vgarcia	ME51N	09.43.18	1	GUI	0
200	VGONZALEZ	Vgonzalez	ME51N	09.35.33	5	GUI	0

*** 77 users logged on with 129 sessions ***

From the above figure you can see, total 9 users have logged in into different clients like 000, 200, 210 and 300
Check the detail of each line.
Take the example of user SLERNER , this user has logged into client 210, from system Soeren , executing tcode FEBAN time of login, 2 sessions.
At the same this user has logged into another client no. 200 and also 2 sessions there.
Two know more about session , select the user or line and double click on it.

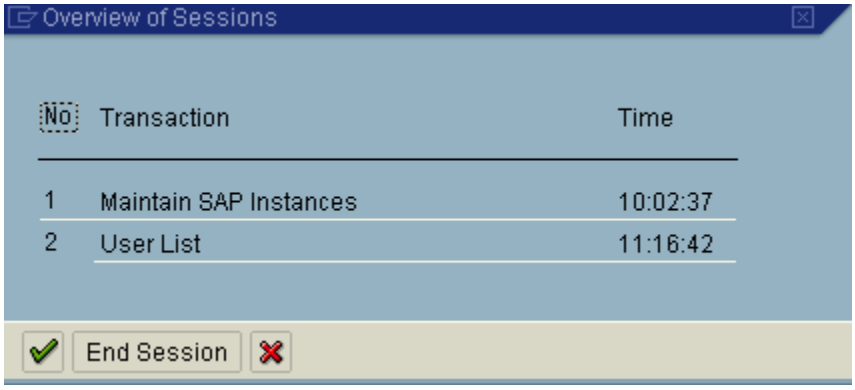


Fig-4

Now if you want to delete one session , select /click on the specific line and click on "End Session".

Click  button to come out from the window.

Click on  button to get most up to date data.

Active Users: Al08

Al08: To know how many users are active in all active servers.

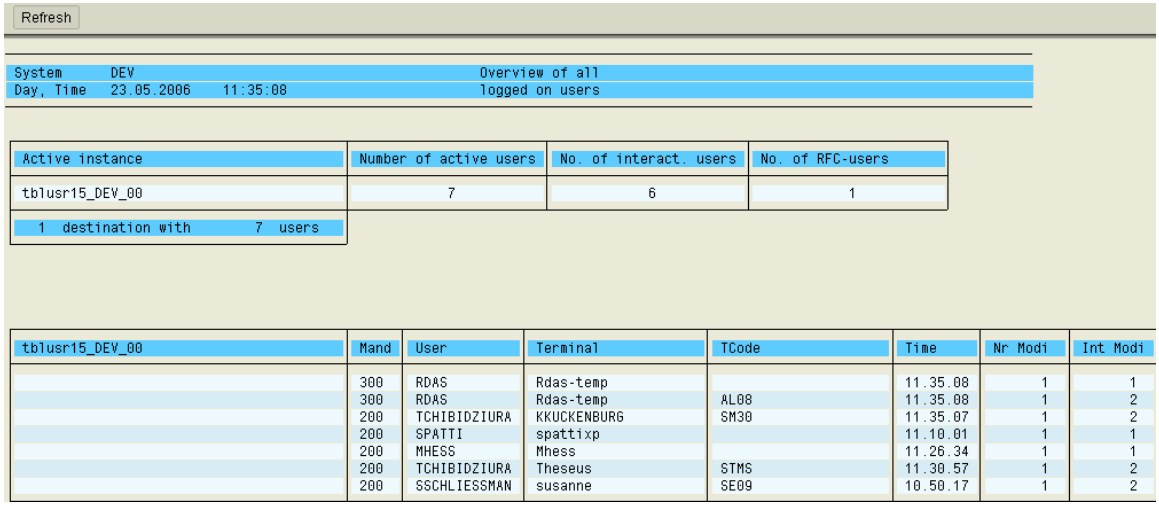


Fig-5

SM21: System Logs

To know /to investigate the problems in SAP system, Basis Admin checks the system logs to check the possible errors and the cause of the error. Any system related task are recorded into system logs and can be viewed and analyzed later to trouble shoot the problem.

The figure below shows how to select the errors and warnings.

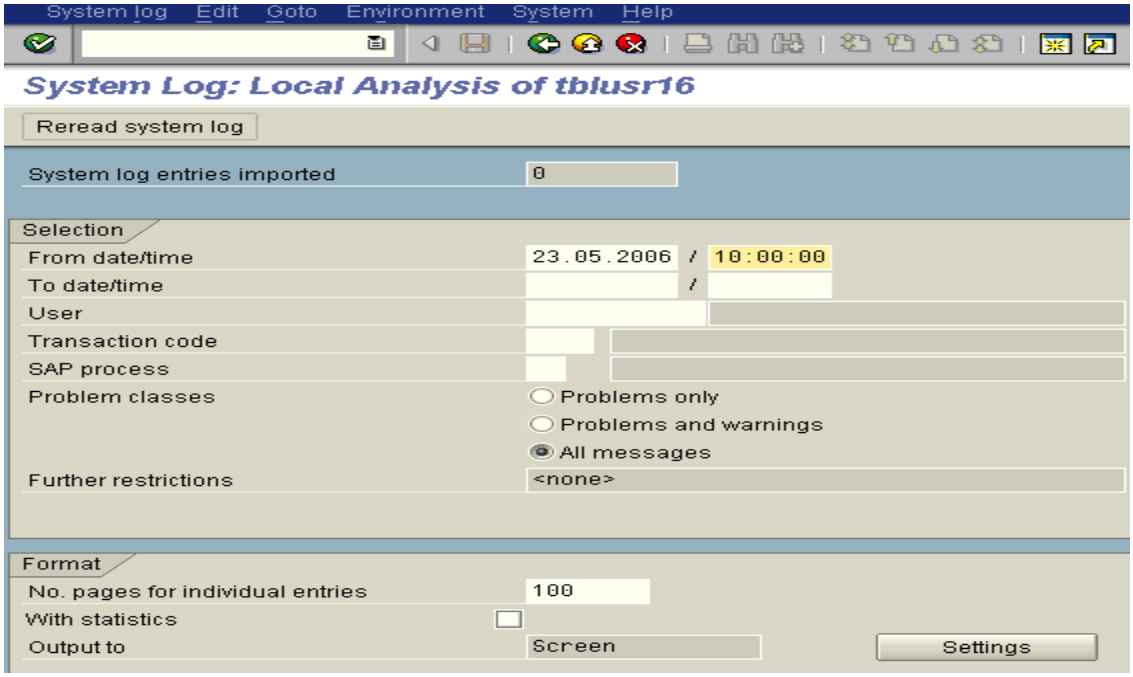
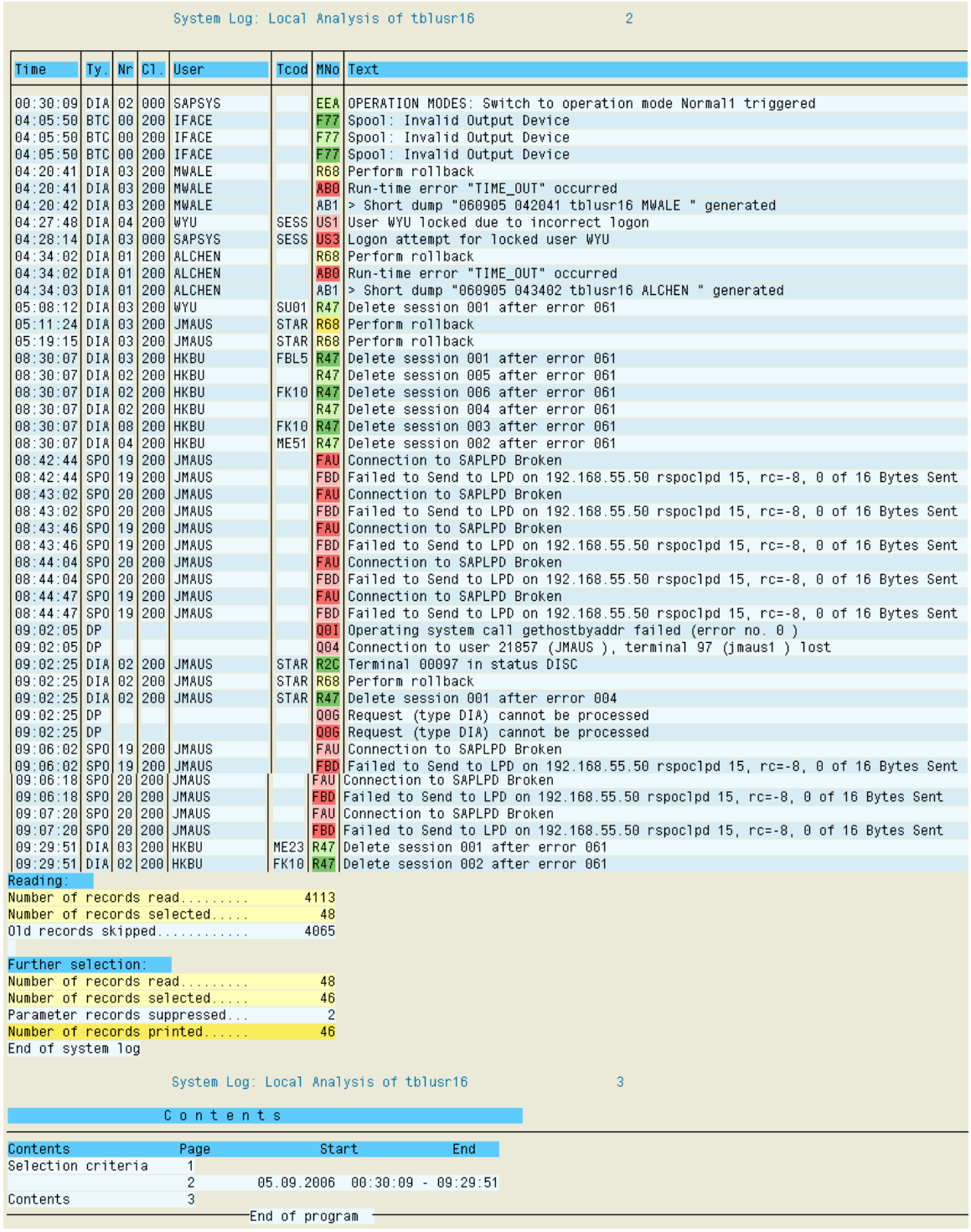


Fig-6



System Log: Local Analysis of tblusr16 2

Time	Ty.	Nr	Cl.	User	Tcod	MNo	Text
00:30:09	DIA	02	000	SAPSYS		EEA	OPERATION MODES: Switch to operation mode Normal1 triggered
04:05:50	BTC	00	200	IFACE		F77	Spool: Invalid Output Device
04:05:50	BTC	00	200	IFACE		F77	Spool: Invalid Output Device
04:05:50	BTC	00	200	IFACE		F77	Spool: Invalid Output Device
04:20:41	DIA	03	200	MWALE		R68	Perform rollback
04:20:41	DIA	03	200	MWALE		ABO	Run-time error "TIME_OUT" occurred
04:20:42	DIA	03	200	MWALE		AB1	> Short dump "060905 042041 tblusr16 MWALE " generated
04:27:48	DIA	04	200	WYU	SESS	US1	User WYU locked due to incorrect logon
04:28:14	DIA	03	000	SAPSYS	SESS	US3	Logon attempt for locked user WYU
04:34:02	DIA	01	200	ALCHEN		R68	Perform rollback
04:34:02	DIA	01	200	ALCHEN		ABO	Run-time error "TIME_OUT" occurred
04:34:03	DIA	01	200	ALCHEN		AB1	> Short dump "060905 043402 tblusr16 ALCHEN " generated
05:08:12	DIA	03	200	WYU	SU01	R47	Delete session 001 after error 061
05:11:24	DIA	03	200	JMAUS	STAR	R68	Perform rollback
05:19:15	DIA	03	200	JMAUS	STAR	R68	Perform rollback
08:30:07	DIA	03	200	HKBU	FBL5	R47	Delete session 001 after error 061
08:30:07	DIA	02	200	HKBU		R47	Delete session 005 after error 061
08:30:07	DIA	02	200	HKBU	FK10	R47	Delete session 006 after error 061
08:30:07	DIA	02	200	HKBU		R47	Delete session 004 after error 061
08:30:07	DIA	08	200	HKBU	FK10	R47	Delete session 003 after error 061
08:30:07	DIA	04	200	HKBU	ME51	R47	Delete session 002 after error 061
08:42:44	SPO	19	200	JMAUS		FAU	Connection to SAPLPD Broken
08:42:44	SPO	19	200	JMAUS		FBD	Failed to Send to LPD on 192.168.55.50 rspoclpd 15, rc=-8, 0 of 16 Bytes Sent
08:43:02	SPO	20	200	JMAUS		FAU	Connection to SAPLPD Broken
08:43:02	SPO	20	200	JMAUS		FBD	Failed to Send to LPD on 192.168.55.50 rspoclpd 15, rc=-8, 0 of 16 Bytes Sent
08:43:46	SPO	19	200	JMAUS		FAU	Connection to SAPLPD Broken
08:43:46	SPO	19	200	JMAUS		FBD	Failed to Send to LPD on 192.168.55.50 rspoclpd 15, rc=-8, 0 of 16 Bytes Sent
08:44:04	SPO	20	200	JMAUS		FAU	Connection to SAPLPD Broken
08:44:04	SPO	20	200	JMAUS		FBD	Failed to Send to LPD on 192.168.55.50 rspoclpd 15, rc=-8, 0 of 16 Bytes Sent
08:44:47	SPO	19	200	JMAUS		FAU	Connection to SAPLPD Broken
08:44:47	SPO	19	200	JMAUS		FBD	Failed to Send to LPD on 192.168.55.50 rspoclpd 15, rc=-8, 0 of 16 Bytes Sent
09:02:05	DP					Q0I	Operating system call gethostbyaddr failed (error no. 0)
09:02:05	DP					Q04	Connection to user 21857 (JMAUS), terminal 97 (jmaus1) lost
09:02:25	DIA	02	200	JMAUS	STAR	R2C	Terminal 00097 in status DISC
09:02:25	DIA	02	200	JMAUS	STAR	R68	Perform rollback
09:02:25	DIA	02	200	JMAUS	STAR	R47	Delete session 001 after error 004
09:02:25	DP					Q0G	Request (type DIA) cannot be processed
09:02:25	DP					Q0G	Request (type DIA) cannot be processed
09:06:02	SPO	19	200	JMAUS		FAU	Connection to SAPLPD Broken
09:06:02	SPO	19	200	JMAUS		FBD	Failed to Send to LPD on 192.168.55.50 rspoclpd 15, rc=-8, 0 of 16 Bytes Sent
09:06:18	SPO	20	200	JMAUS		FAU	Connection to SAPLPD Broken
09:06:18	SPO	20	200	JMAUS		FBD	Failed to Send to LPD on 192.168.55.50 rspoclpd 15, rc=-8, 0 of 16 Bytes Sent
09:07:20	SPO	20	200	JMAUS		FAU	Connection to SAPLPD Broken
09:07:20	SPO	20	200	JMAUS		FBD	Failed to Send to LPD on 192.168.55.50 rspoclpd 15, rc=-8, 0 of 16 Bytes Sent
09:29:51	DIA	03	200	HKBU	ME23	R47	Delete session 001 after error 061
09:29:51	DIA	02	200	HKBU	FK10	R47	Delete session 002 after error 061

Reading:
Number of records read..... 4113
Number of records selected..... 48
Old records skipped..... 4065

Further selection:
Number of records read..... 48
Number of records selected..... 46
Parameter records suppressed... 2
Number of records printed..... 46
End of system log

System Log: Local Analysis of tblusr16 3

Contents

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Selection criteria	1		
	2	05.09.2006 00:30:09	09:29:51
Contents	3		

End of program

ST22: ABAP runtime error/ ABAP dumps

When users are working they face some kind of time out problem and any kind of problem for which their work got terminated. That termination is reported in an area called ABAP dumps. Using ST22 , Basis can analyze the error and cause of the error.

ST22 show the today and yesterday all the time. To get more dumps from previsou days, you can select the date range.

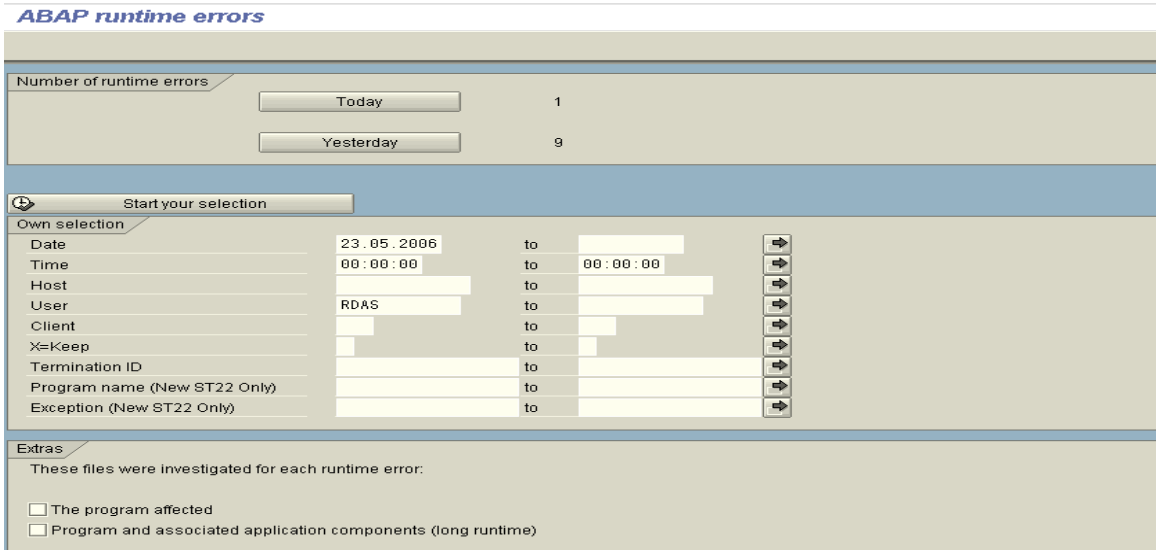
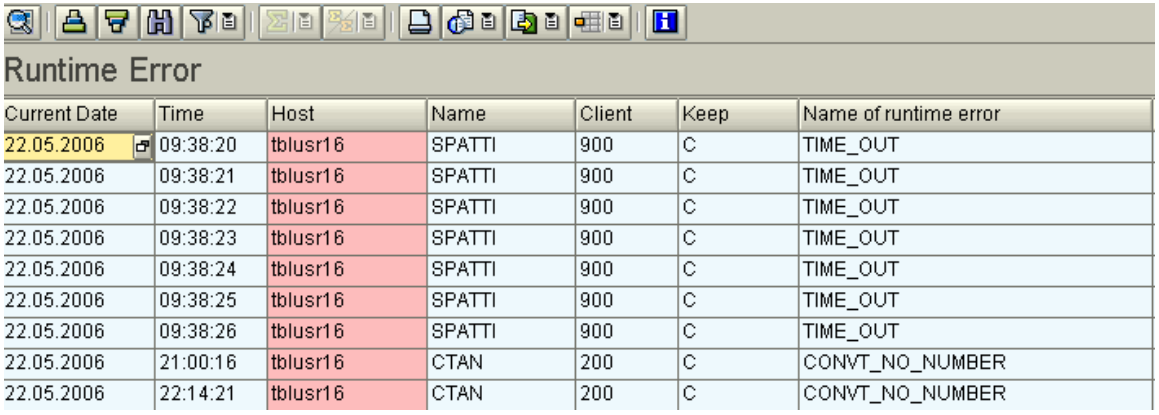


Fig-7



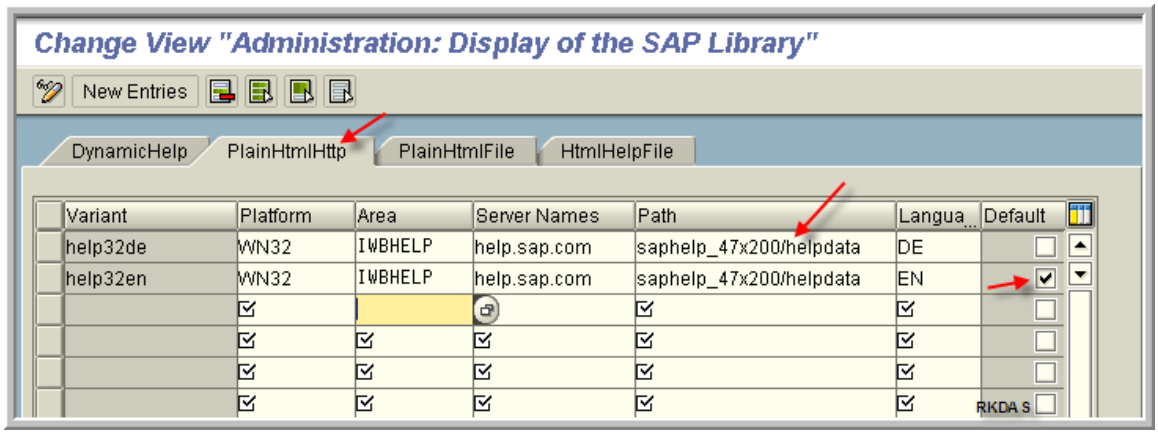
Runtime Error

Current Date	Time	Host	Name	Client	Keep	Name of runtime error
22.05.2006	09:38:20	tblusr16	SPATTI	900	C	TIME_OUT
22.05.2006	09:38:21	tblusr16	SPATTI	900	C	TIME_OUT
22.05.2006	09:38:22	tblusr16	SPATTI	900	C	TIME_OUT
22.05.2006	09:38:23	tblusr16	SPATTI	900	C	TIME_OUT
22.05.2006	09:38:24	tblusr16	SPATTI	900	C	TIME_OUT
22.05.2006	09:38:25	tblusr16	SPATTI	900	C	TIME_OUT
22.05.2006	09:38:26	tblusr16	SPATTI	900	C	TIME_OUT
22.05.2006	21:00:16	tblusr16	CTAN	200	C	CONVT_NO_NUMBER
22.05.2006	22:14:21	tblusr16	CTAN	200	C	CONVT_NO_NUMBER

Fig-8

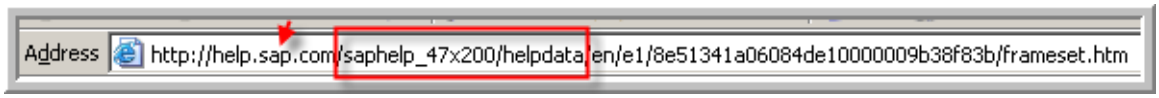
Help configuration in SAP

1. Execute SPRO ->SAP reference IMG
2. Expand General Settings
3. Execute Clock Button "Settings Variants for Help"
4. Continue
5. Click on "Plain Html http"
6. Click on NewEntries
7. Provide the information as below in Fig



8. Click Save after that

URL Information taken from.



9. Test the help by clicking on Application help from any SAP logged in screen.

Database Performance Tables/Indexes: DB02

Using this tcode Basis checks the database detail like database size, table space size, free space statistics, no of tables, table space growth, data files associated with tables and lot more. See the **Fig-17** shown below which shows over all database detail. To get more updated data, click on refresh button. Remember refreshing this take several mins.

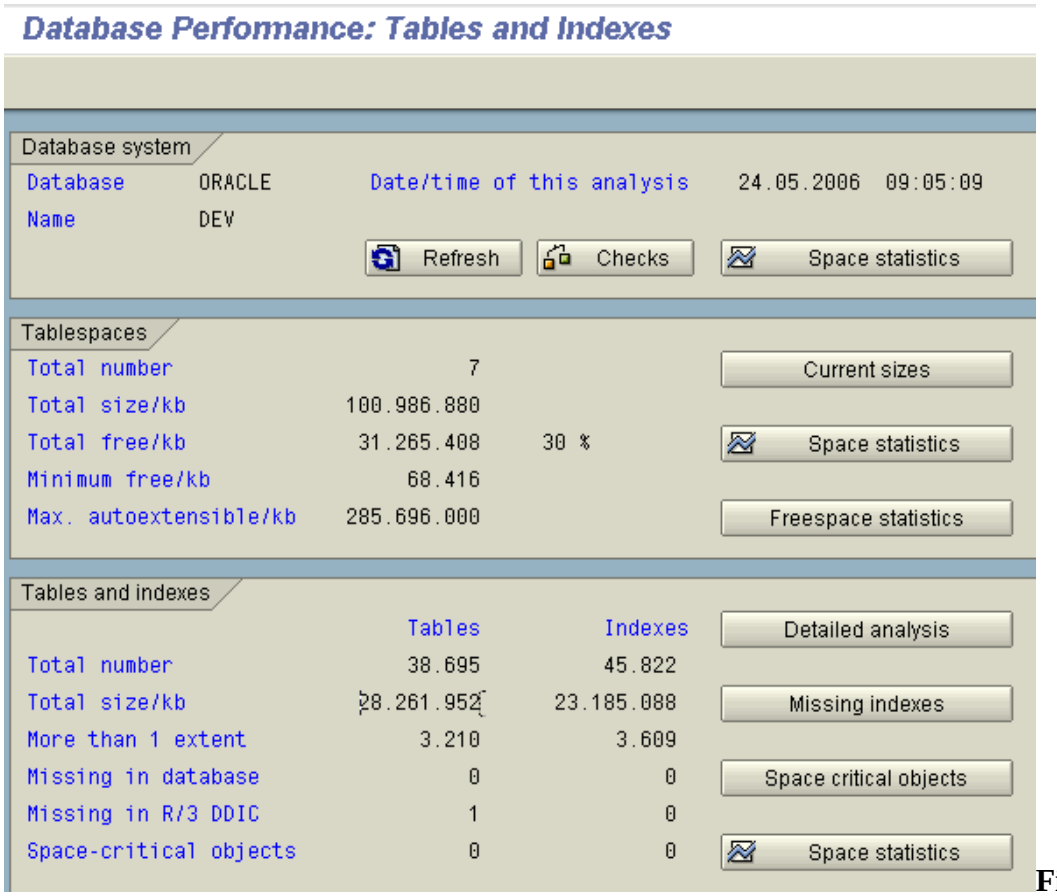
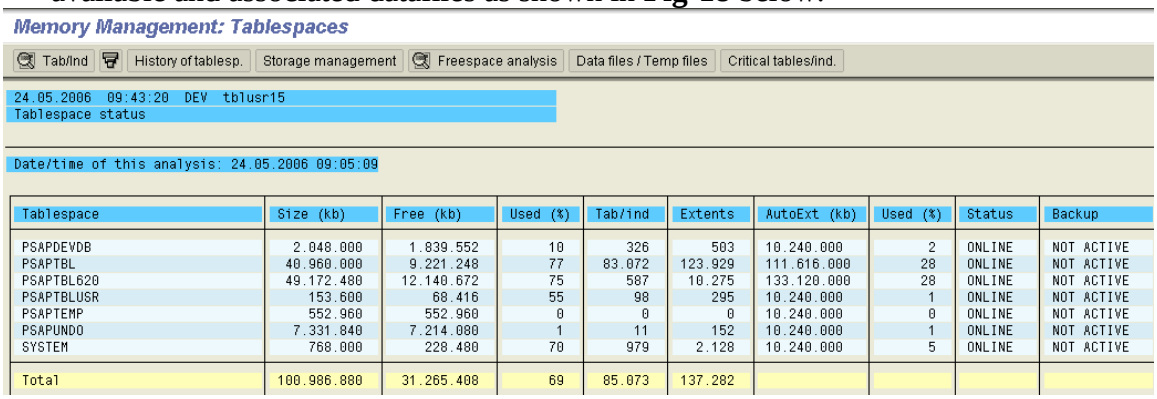


Fig-17

1. Each time you refresh this screen, look for if any space critical objects are shown in space-critical objects field.
2. Click on Current Sizes to check the tablespace size, utilization , free space available and associated datafiles as shown in **Fig-18** below.



Tablespace	Size (kb)	Free (kb)	Used (%)	Tab/ind	Extents	AutoExt (kb)	Used (%)	Status	Backup
PSAPDEVDB	2.048.000	1.839.552	10	326	503	10.240.000	2	ONLINE	NOT ACTIVE
PSAPTBL	40.960.000	9.221.248	77	83.072	123.929	111.616.000	28	ONLINE	NOT ACTIVE
PSAPTBL620	49.172.480	12.140.672	75	587	10.275	133.120.000	28	ONLINE	NOT ACTIVE
PSAPTBLUSR	153.600	68.416	55	98	295	10.240.000	1	ONLINE	NOT ACTIVE
PSAPTEMP	552.960	552.960	0	0	0	10.240.000	0	ONLINE	NOT ACTIVE
PSAPUNDO	7.331.840	7.214.080	1	11	152	10.240.000	1	ONLINE	NOT ACTIVE
SYSTEM	768.000	228.480	70	979	2.128	10.240.000	5	ONLINE	NOT ACTIVE
Total	100.986.880	31.265.408	69	85.073	137.282				

Fig-18

3. To know the associated datafiles: select the tablespace and click on Datafiles button from the menu shortcut above. See the **Fig-19** for datafile information.

DBA_DATA_FILES

24.05.2006 09:46:42 DEV
DBA_DATA_FILES

FILE_NAME	FILE_ID	TABLESPACE_NAME	BYTES	BLOCKS	STATUS
/oracle/DDB/sapdata4/tbl_1/tbl.data1	3	PSAPTBL	5242880000	640000	AVAILABLE
/oracle/DDB/sapdata4/tbl_2/tbl.data2	4	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_3/tbl.data3	5	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_4/tbl.data4	6	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_5/tbl.data5	7	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_6/tbl.data6	8	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_7/tbl.data7	9	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_8/tbl.data8	10	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_9/tbl.data9	11	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_10/tbl.data10	27	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_11/tbl.data11	29	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_12/tbl.data12	30	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_13/tbl.data13	32	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_14/tbl.data14	34	PSAPTBL	2097152000	256000	AVAILABLE
/oracle/DDB/sapdata4/tbl_15/tbl.data15	35	PSAPTBL	4194304000	512000	AVAILABLE
/oracle/DDB/sapdata4/tbl_16/tbl.data16	37	PSAPTBL	5242880000	640000	AVAILABLE

Fig-19

4. To know about tablespace history like now much data load into which tablespace on daily, weekly, Monthly basis, click on tablespace history from the menu bar. Check Fig-20 for detail of history

Tablespace History

Choose | Months | Weeks | Days | Sort

24.05.2006 09:52:59 DEV tblusr15
History of Tablespaces

Interval: 25.04.2006 - 24.05.2006 Measurements: 30 Scale: Day

Scale: Day Tablespace	Size (Kbyte) Total	Size (Kbyte) Chg/day	Free(Kbyte) Total	Used (Kbyte) Total	Used (Kbyte) Chg/day
PSAPUNDO	7.331.840	0	7.193.600	138.240	165.661
PSAPTBL	40.960.000	105.931	9.221.248	31.738.752	43.467
PSAPTBLUSR	153.600	1.766	68.416	85.184	234
PSAPTBL620	49.172.480	0	12.140.672	37.031.808	38

Fig – 20

Tablespace History

Choose | Months | Weeks | Days | Sort

25.08.2006 09:14:43 TBP tblusr16
History of Tablespaces

Interval: 17.06.2006 - 20.08.2006 Measurements: 10 Scale: Week

Scale: Week	Size (Kbyte)		Free(Kbyte)	Used (Kbyte)	
Tablespace	Total	Chg/week	Total	Total	Chg/week
PSAPTBL	69.632.000	1950.377	7.826.624	61.805.376	2.347.456
PSAPUNDO	10.240.000	0	9.562.560	677.440	331.586
PSAPTBL620	43.048.960	0	15.704.896	27.344.064	33.077
PSAPTBLUSR	716.800	31.156	317.376	399.424	11.930
SYSTEM	1.024.000	0	494.528	529.472	104

Tablespace History

Tables/indexes | Next tablespace | Previous tablespace | Months | Weeks | Days

25.08.2006 09:16:35 TBP tblusr16
History of Tablespaces

Interval: 17.06.2006 - 20.08.2006 Measurements: 10 Scale: Week

Scale: Week	Size (Kbyte)		Free(Kbyte)	Used (Kbyte)		%-Used		Tables/Indices	
Tablespace	Total	Chg/week	Total	Total	Chg/week	Total	Chg	Total	Chg/week
PSAPTBL	69.632.000	1950.377	7.826.624	61.805.376	2.347.456	88	2	83.097	4
PSAPUNDO	10.240.000	0	9.562.560	677.440	331.586	6	3	14	0
PSAPTBL620	43.048.960	0	15.704.896	27.344.064	33.077	63	0	587	0

Scale: Week	Size (Kbyte)		Free(Kbyte)	Used (Kbyte)		%-Used		Tables/Indices	
Date	Total	Delta	Total	Total	Delta	Total	Delta	Total	Delta
25.08.2006	69.632.000	0	7.826.624	61.805.376	915.072	88	1	83.097	0
19.08.2006	69.632.000	0	8.741.696	60.890.304	996.992	87	1	83.097	0
12.08.2006	69.632.000	0	9.738.688	59.893.312	1.079.232	86	2	83.097	0
05.08.2006	69.632.000	0	10.817.920	58.814.080	1.137.920	84	2	83.097	0
29.07.2006	69.632.000	0	11.955.840	57.676.160	3.095.552	82	4	83.097	0
22.07.2006	69.632.000	6144.000	15.051.392	54.580.608	1.376.832	78	5-	83.097	0
15.07.2006	63.488.000	13086720	10.284.224	53.203.776	13.513.664	83	5	83.097	37
08.07.2006	50.401.280	0	10.711.168	39.690.112	394.816	78	1	83.060	0
01.07.2006	50.401.280	0	11.105.984	39.295.296	372.736	77	0	83.060	0
24.06.2006	50.401.280	0	11.478.720	38.922.560	263.104	77	1	83.060	0
17.06.2006	50.401.280	0	11.741.824	38.659.456	0	76	0	83.060	0

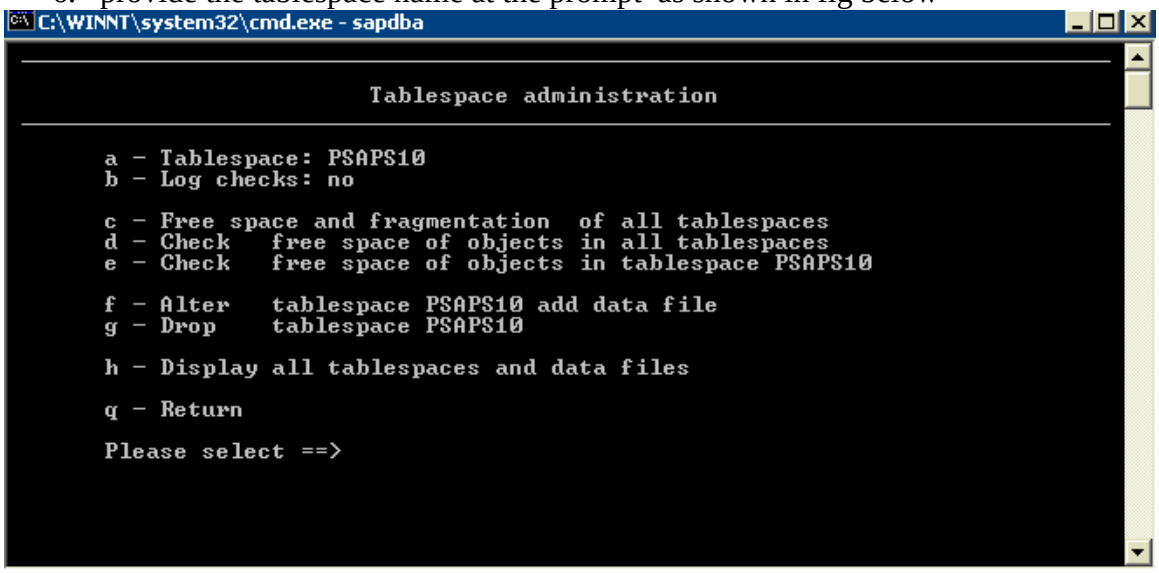
5. Now from tablespace utilization screen, If tablespace utilization is above 90% , then we have to add datafiles to the specific tablespace to bring it below 90% and will try to keep below 80%.
6. I can only view the tablespace utilization and how many datafiles associated with the tablespace but I can't add datafile from DB02.
7. I take the help of SAP provided tool called **sapdba** which you have to run from the system where your database is running by logging as ora**<sid>** user or <sid>adm user.

telnet <Server hostname>
login ora<sid>
Password
sapdba

1. execute **sapdba**
2. select option C
3. select option c
4. List all the tablespaces which are more than 90%

e.g. PSAPS10
PSAPS10620

5. select option 'a'
6. provide the tablespace name at the prompt as shown in fig below



7. select option 'f' to add datafile
8. Make sure you have enough space in the file system to add datafile

To check thespace at Unix level issue the following command
df –k |grep sapdata

In NT /2000 , go to the particular partition or drive show in screen to check if you have enough space or you want to increase space.

To increase space in particular file system or partition , consult with your system admin .

9. Select ‘c’ from the option to provide a new size to the datailfe
10. select ‘S’ to start adding datafile
11. don’t take backup of the datafile at this point if prompted
12. press ‘q’ to return to the previous menu.
13. press ‘y’ to confirm

BRTOOLS

1. Login to SAP server using <sid>adm (windows) or ora<sid> (Unix)
2. Execute ‘brtools’ from command prompt
3. Select option ‘2’ to Increase the tablespace size
4. selection option ‘5’ to resize the datafile
5. select option 3 and write ‘resize’ in the input box to resize the datafile
6. select option 4 to select the tablespace name
7. select option ‘5’ to rpovide the datafile name or datafile id
8. press ‘c’ to continue
9. Press ‘c’ again to proceed
10. select option ‘7’ to provide the new datafile size

New datafile size is the original size + new size

11.press ‘c’ to continue
11. press ‘c’ to continue
12. press ‘b’ to back
13. press ‘9’ to exit.
14. login to SAP and execute DB02 -> Refresh and check the new tablespace size .

Tablespace datafile resize is completed.

Use other file to show how sapdba screens are and how you add data file using example.

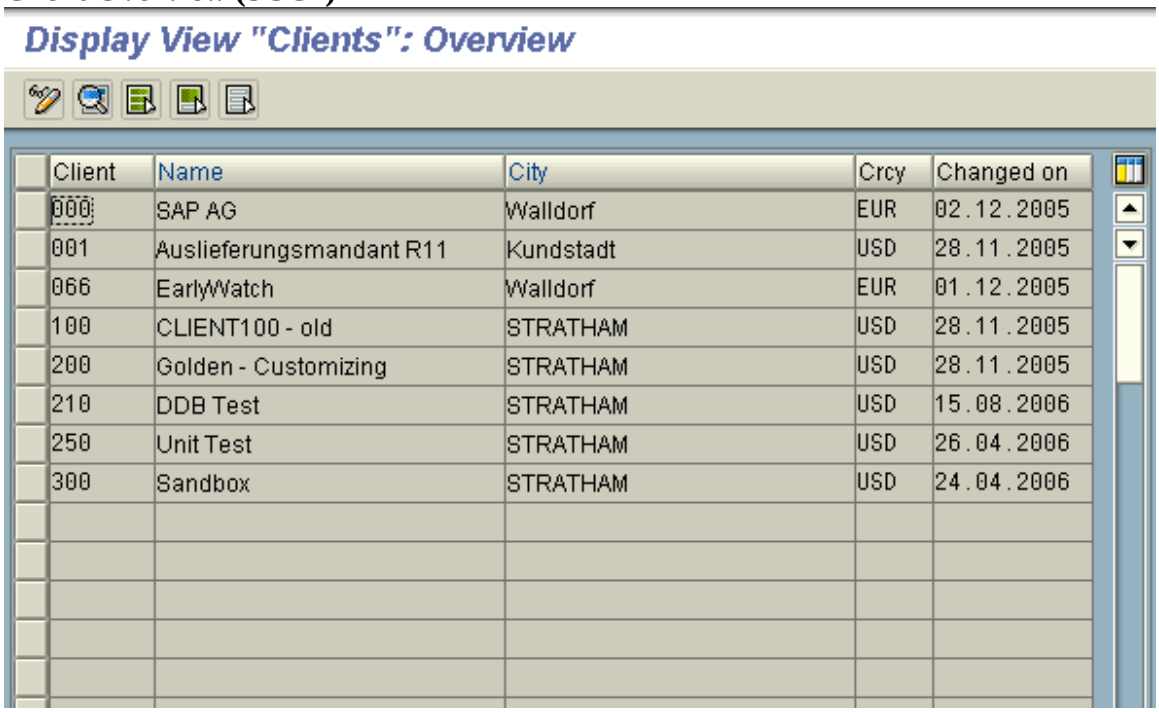
Once datafile is added, you can refresh from sapdba or you can come to DB02 again and click on Refresh button to get updated data on tablespaces.

Client Administration

A **client** is, in organizational terms, an independent unit in the R/3 System. Each client has its own data environment and therefore its own master data and transaction data, assigned user master records and charts of accounts, and specific customizing parameters.

1. Client Overview SCC4
2. Client Creation SCC4
3. Local Client Copy SCCL
4. Remote Client copy SCC9
5. Client Deletion SCC5
6. Client Export SCC8
7. Client Import SCC7

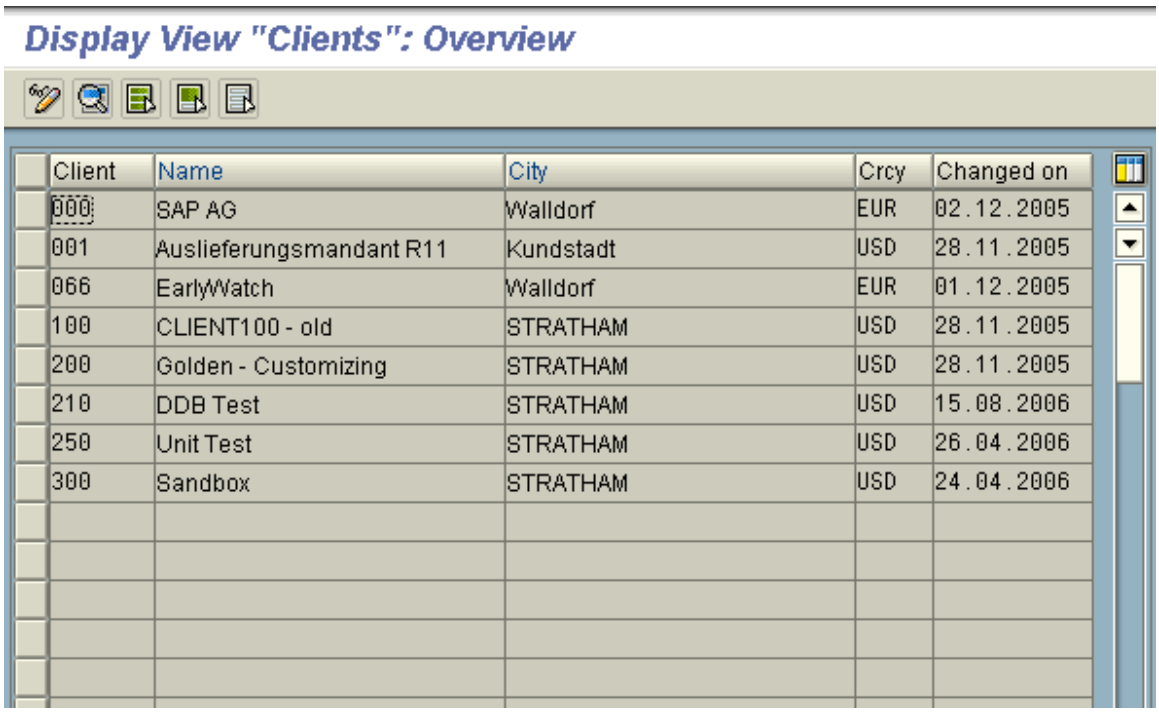
Client Overview (SCC4)



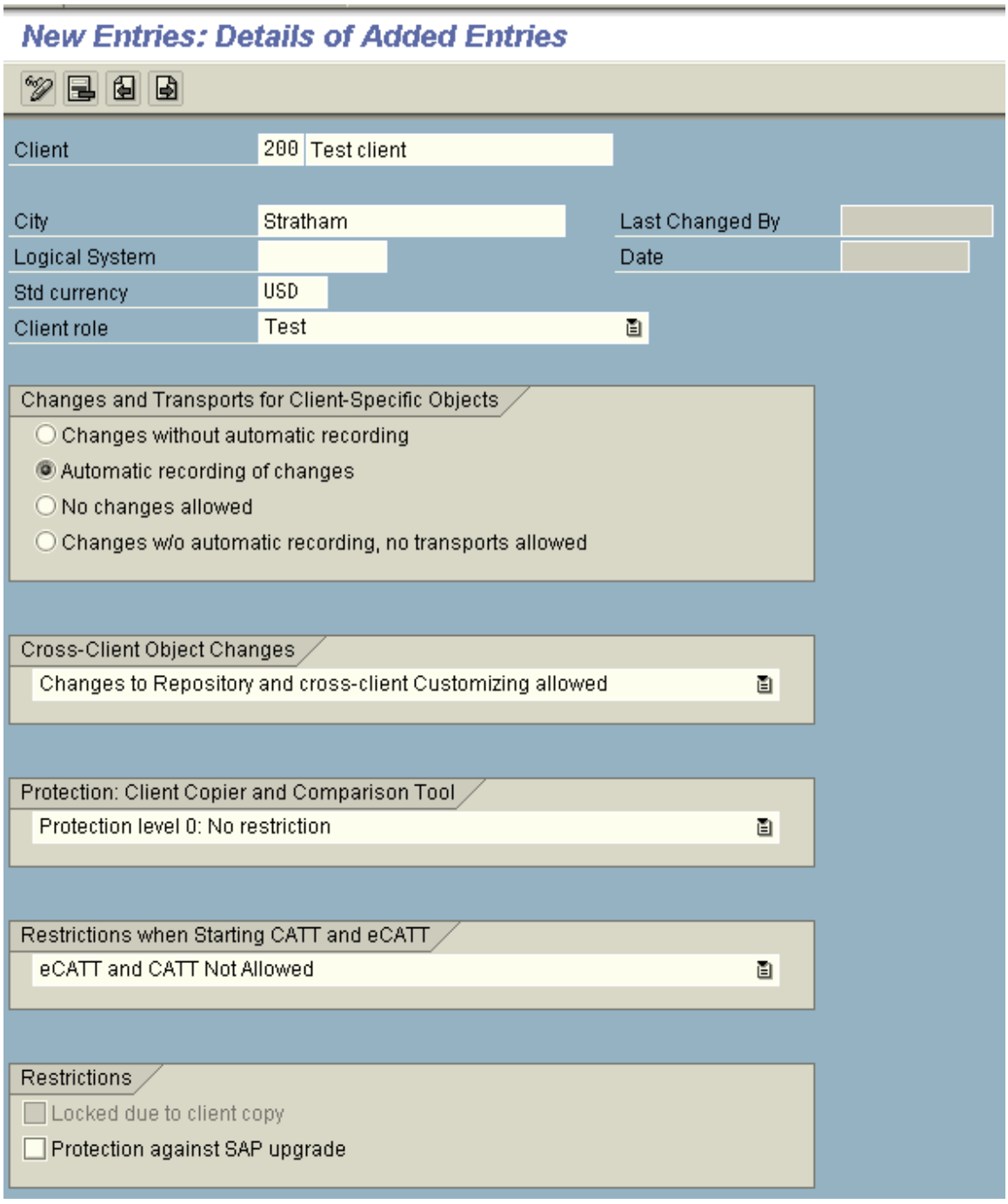
Client	Name	City	Crcy	Changed on
000	SAP AG	Walldorf	EUR	02.12.2005
001	Auslieferungsmandant R11	Kundstadt	USD	28.11.2005
066	EarlyWatch	Walldorf	EUR	01.12.2005
100	CLIENT100 - old	STRATHAM	USD	28.11.2005
200	Golden - Customizing	STRATHAM	USD	28.11.2005
210	DDB Test	STRATHAM	USD	15.08.2006
250	Unit Test	STRATHAM	USD	26.04.2006
300	Sandbox	STRATHAM	USD	24.04.2006

Creation of Client (SCC4)

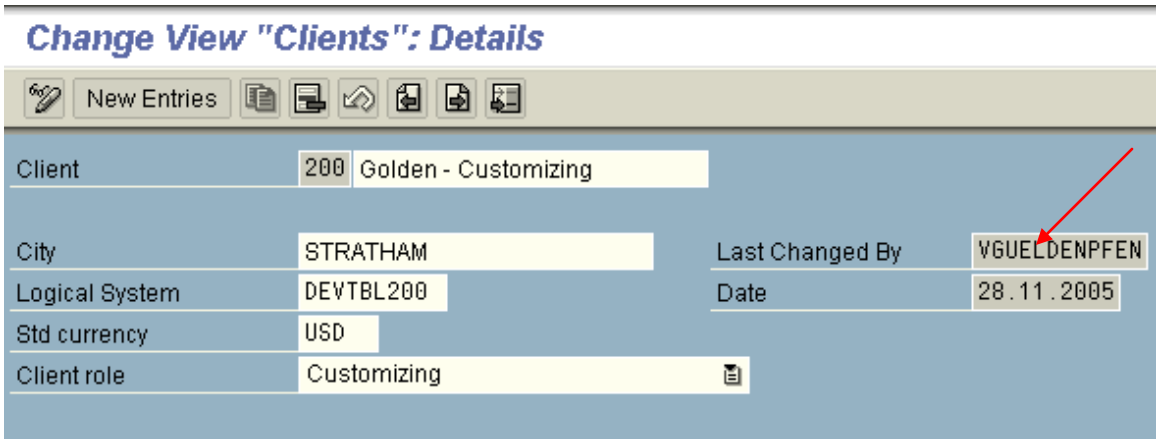
Execute SCC4 and see the screen below



Click on change button 
Click on “New Entries”
Fill up the tabs as shown below.



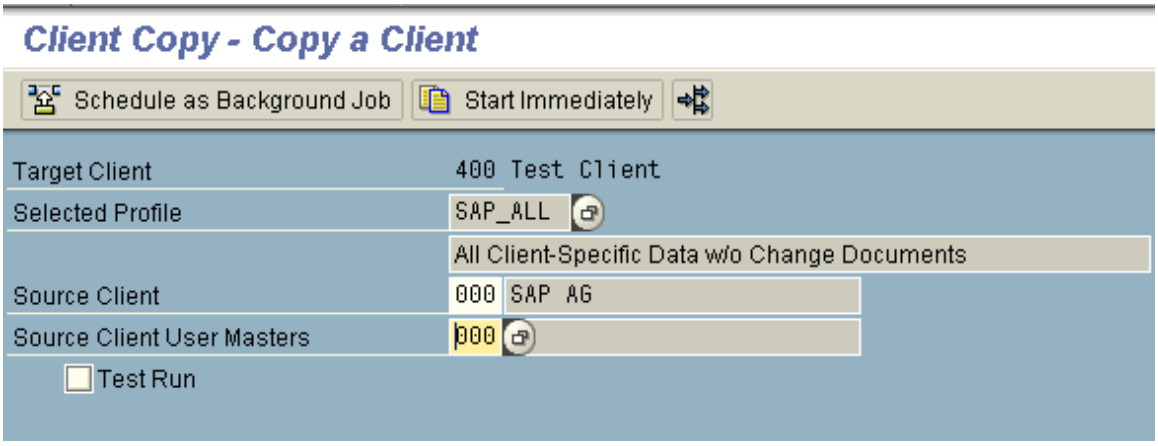
Click Save button.



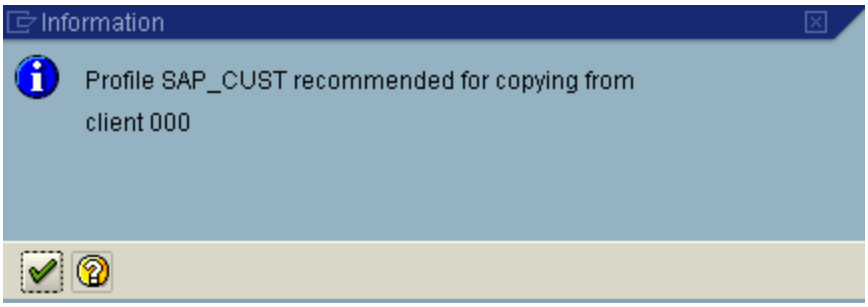
Local Client Copy (SCCL)

Pre-Requisites

1. Make sure you have enough space in PSAP<SID> tablespace to complete the client copy.
2. Create a client in 3 digit number except 000, 001 and 066
3. Check server has enough space to handle client copy before scheduling client copy. You can check this using tcode DB02.
4. Login to the new client using SAP* user and password PASS.
5. execute tcode SCCL in SAP command line
6. Select the profile you want to copy to new client, e.g. SAP_ALL
7. Select the source client e.g. 000
8. Select source client master data e.g. 000

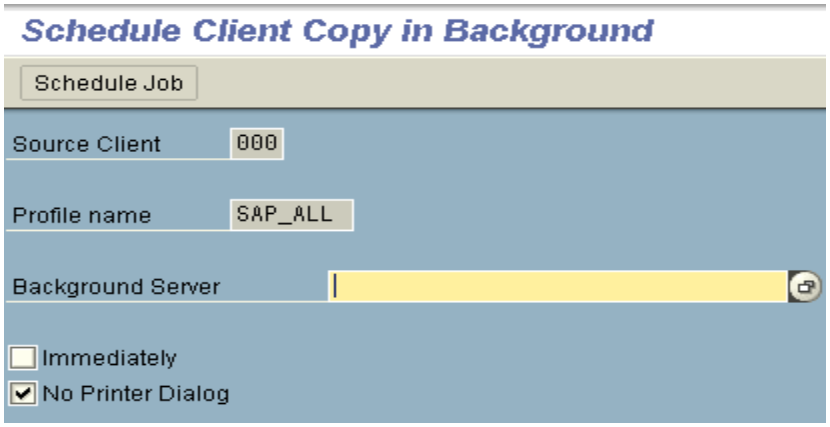


9. Now click on schedule as background job

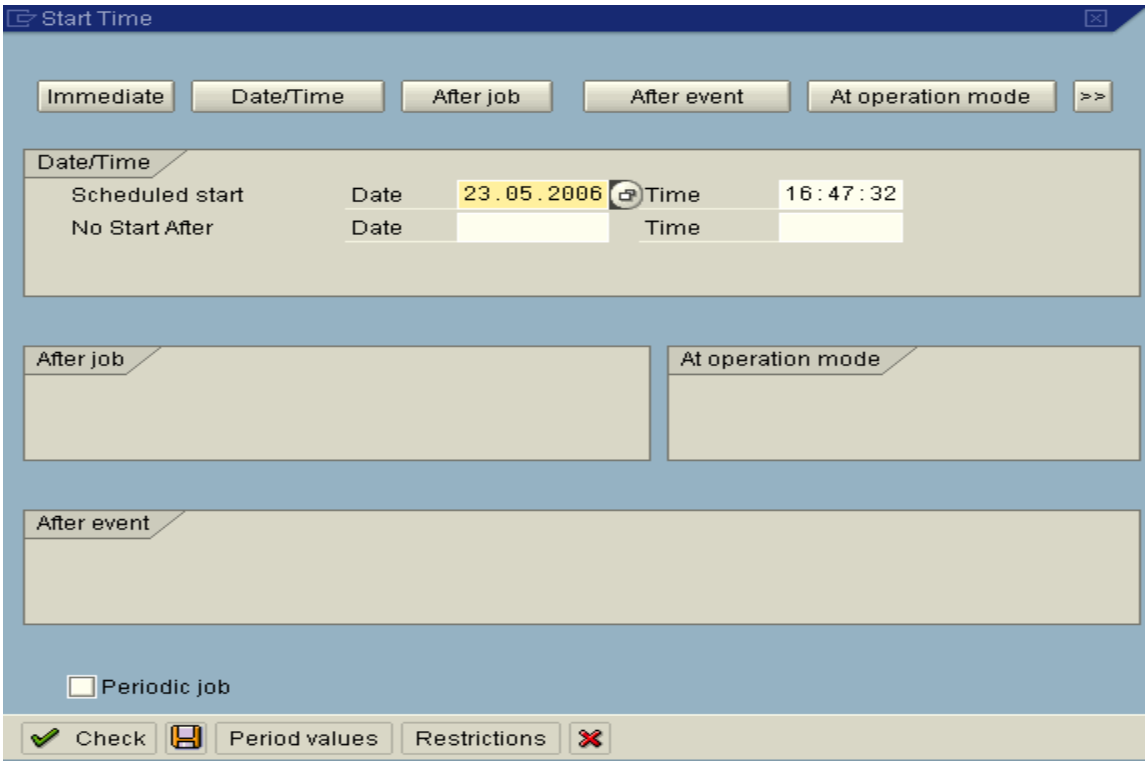


Click on continue

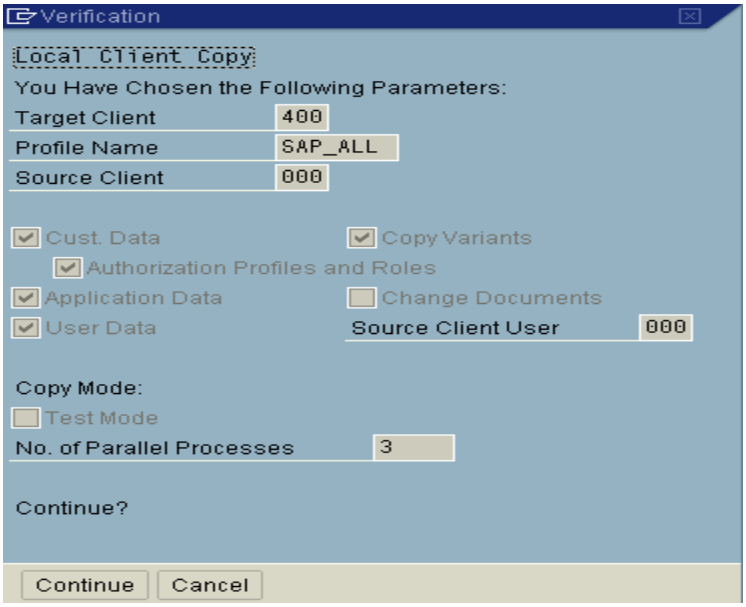
10. Select the back ground server you want to perform this action, default **leave the field blank.**



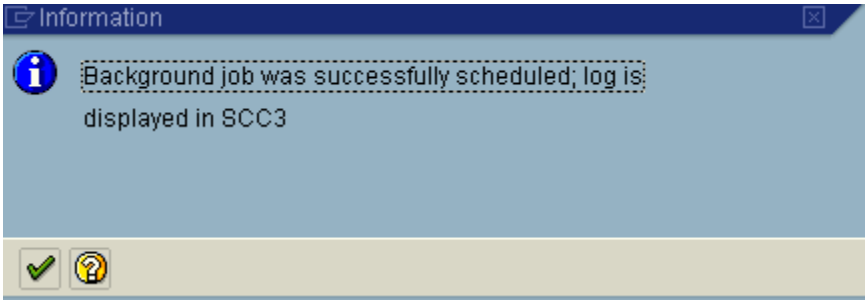
11. Now click on schedule job
12. Click on "Immediate."
13. Click check
14. click Save  button.



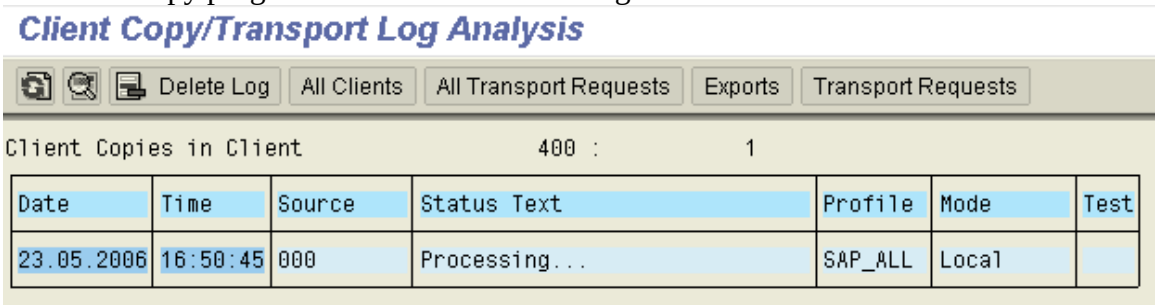
15. A summary of client copy will be shown in the screen with test run
16. Make sure test mode is not selected at this moment.
17. click on continue

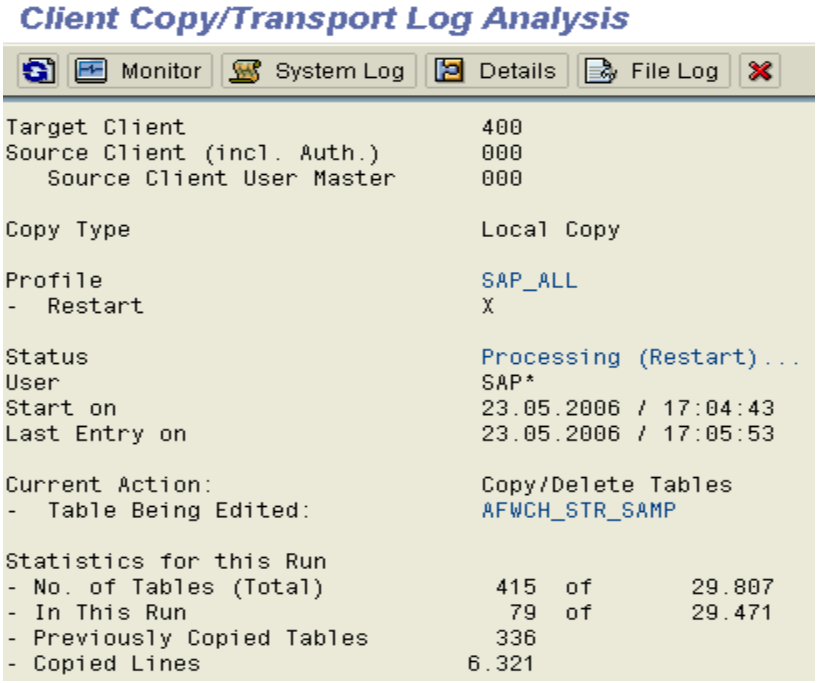


18. now the client copy is scheduled in background



19. Client copy progress can be monitored using tcode SCC3





20. Job can be also seen in SM50

If client copy fails due to any reason, you can check the log in SCC3.
Once the problem is solved, you can restart the client copy with same setting in restart mode.

Remote Client Copy (SCC9)

Remote client copy is performed in rare situation. When the client copy is done between two different SAP systems, the copy is called remote client copy.

Before remote client copy is performed, a RFC connection must be set between those systems using SM59.

1. Check RFC connection is working fine between two systems you want to perform remote client copy using SM59
2. create client in the target system you want to copy the client
3. login to target client using user SAP* and password PASS

4. execute tcode SCC9 and select the RFC for the source system
5. select the profile you want to copy like SAP_ALL
6. select source client number you want to copy
7. Select source client master data , mostly it is the same client number
8. Now click on schedule as background job.
9. Leave the background server field blank.
10. Click schedule.
11. Select Immediate from next screen.
12. Save the screen.
13. Client copy is scheduled now as a background job and client copy process started.
14. The progress can be monitored using tcode SCC3

Client Deletion (SCC5)

Client deletion is performed when the client data is corrupted or client data is no longer needed to avoid confusion.

1. Don't delete the client using SCC4 the space occupied by the client can't be regained
2. login to the client you want to delete
3. run tcode SCC5 in sap command line
4. Tick mark on remove from table T000 to perform a complete removal.
5. Now click on schedule as background job
6. leave the background server blank
7. now click on schedule job
8. click on Immediate
9. click on save
10. Client deletion is started and log can be seen in SCC3

Reorganization: Client Deleted. Space still filled up in Database Note: 35952

Data is deleted from tables when deleting a client. Some databases (for example Oracle and Informix, but not Adabas D) have the attribute that the space occupied by tables is not changed when deleting data. The cleared areas within the tables can however be filled with new data.

Soln:

This is the normal behavior of the database and not an error. If new data is stored (creation of a new client, adding further data to already existing clients), the space of the deleted client is reused.

If you want to immediately recover the cleared space, you must **reorganize** the database (or at least parts of it). There are **two reasons** for performing reorganization:

- A "large" client with a large amount of data was deleted and this amount of data will not be added to the system in the foreseeable future.
- After deleting the client, a lot of small areas (individual records) can have been deleted in the database. These small gaps are not completely recycled. Particularly after the repeated deletion of clients, the space in the database can be utilized inefficiently.

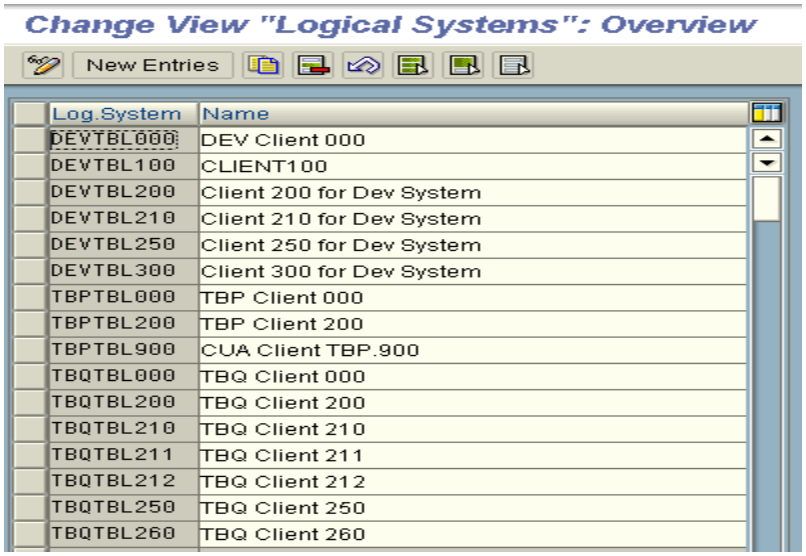
Logical System: SALE

A logical system is an application system in which the applications are coordinated to work in one common database. In SAP terms, a logical system corresponds to a client

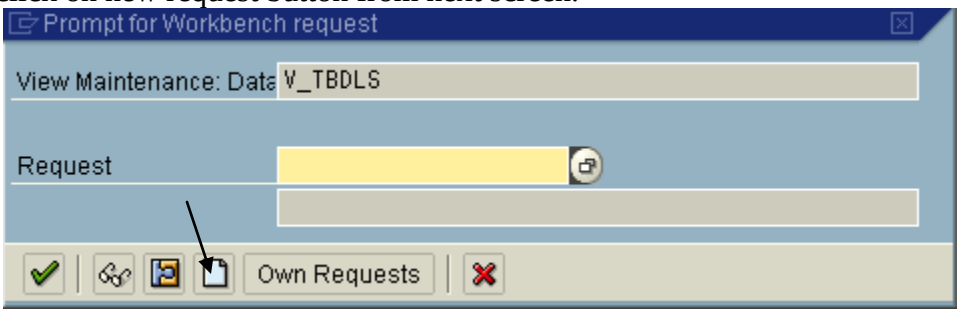
Like client number in the system, a logical system is assigned to each client to differentiate between each business data and communication for post processing of data to specific client.

To define and assign logical system to a client follow the steps below.

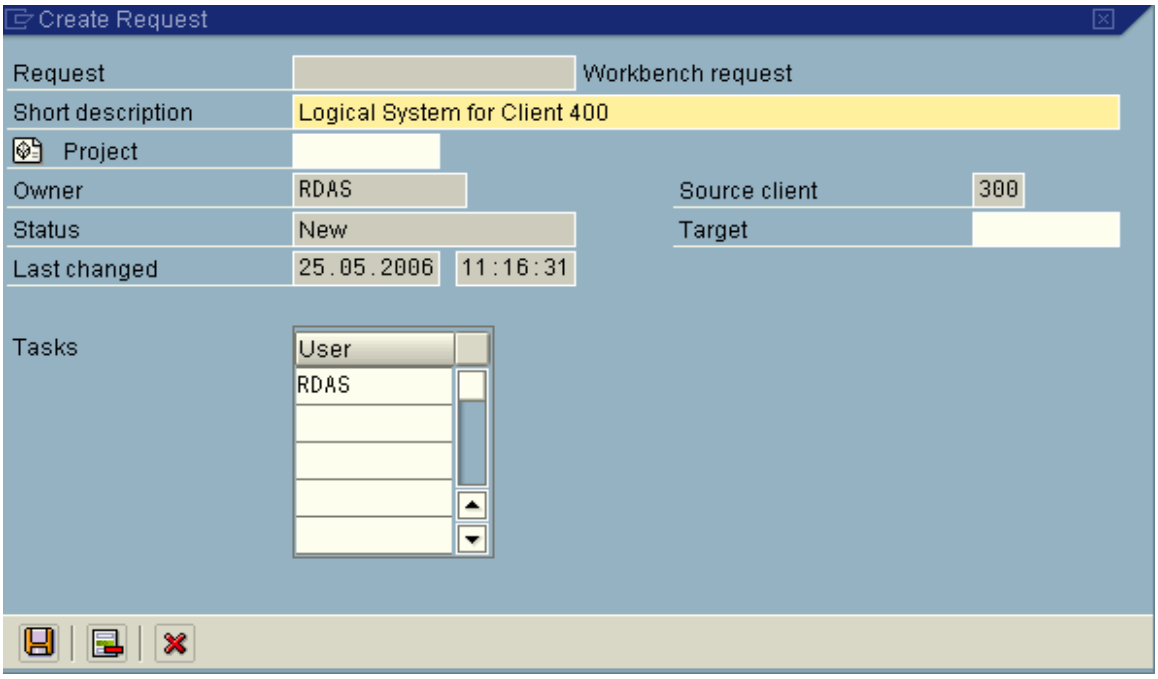
1. Login as super user other than DDIC and SAP*
2. Execute tcode SALE.
3. Expand Sending and Receiving systems
4. Expand Logical Systems
5. click on  define logical system.
6. Click on continue on next information window
7. Click on New Entries button



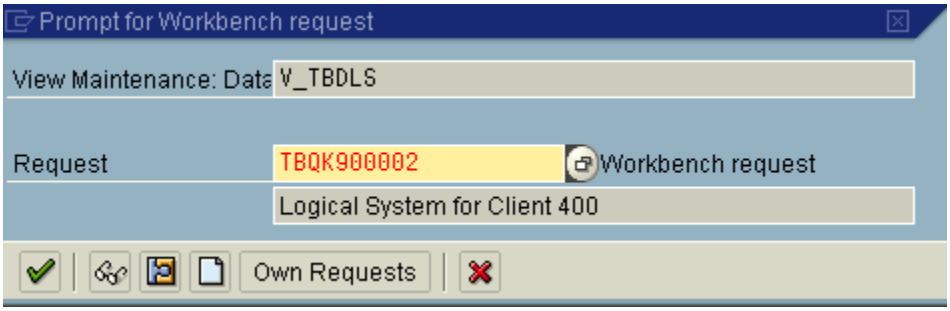
8. Provide logical system name and description for that like TBQTBL400 , TBQ Client 400
9. click on save.
10. click on new request button from next screen.



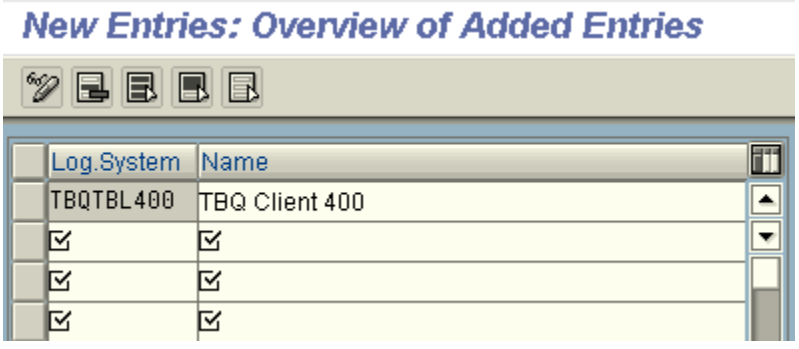
11. Provide the description as shown in Fig below



12. Click on Save.
13. A transport request is created and shown in next window. click on continue on next window.



14. The name appears as shown in fig below.



Assign logical system to client.

Once logical system is defined it can be assigned to specific client in two ways.

a. using tcode sale
b. using tcode scc4

1. Execute SCC4
2. Click on Pencil  button to open in change mode.
3. Click continue.
4. Double click on the client you want to assign the logical system (e.g. 400)
5. Click on logical system field and press F4.
6. Select the logical system you created now i.e. TBQTBL400
7. Double click on that.
8. Click on save
9. Click on continue on warning screen.
10. Now logical system is assigned to client success fully.

Note: Don't change the logical system never/ever in production if you don't know or with somebody's request.

User Management (SU01)

Like other applications, SAP has its own user management facility to create user for SAP and use those users to login to SAP at different level.
In SAP there are different types of users.

1. Dialog users
2. Communication users
3. System user
4. Service user
5. Reference user

User Type

Dialog 'A'

A normal *dialog user* is used by one person only for all types of logon.During a dialog logon, the system checks for expired and initial passwords and provides an option to change the password.

Multiple dialog logons are checked and logged if necessary.

System 'B'

You use a user of type *System* for communication without dialog within one system for RFC or for background processing within one system.

Dialog logon is not possible.

Communication 'C'

You use a user of type *Communication* for communication without dialog between systems (for RFC or CPIC service users for various applications, for example, ALE, Workflow, TMS, and CUA).

Dialog logon is not possible.

Service 'S'

A user of the type *Service* is a dialog user that is available to an anonymous, larger group of users. Generally, this type of user should only be assigned very restricted authorizations.

For example, service users are used for anonymous system access via an ITS service. Once an individual has been authenticated, a session that started anonymously using a service user can be continued as a personal session using a dialog user.

During logon, the system does not check for expired and initial passwords. Only the user administrator can change the password.

Multiple logon is allowed.

Reference 'L'

Like the service user, a *reference user* is a general user, not assigned to a particular person. You cannot log on using a reference user. The reference user is only used to assign additional authorization. Reference users are implemented to equip Internet users with identical authorizations.

On the *Roles* tab, you can specify a reference user for additional rights for dialog users. Generally, the application controls the allocation of reference users. You can allocate the name of the reference user using variables. The variables should begin with "$". You assign variables to reference users in transaction SU_REFUSERVARIABLE.

This assignment applies to all systems in a CUA landscape. If the assigned reference user does not exist in one of the CUA child systems, the assignment is ignored.

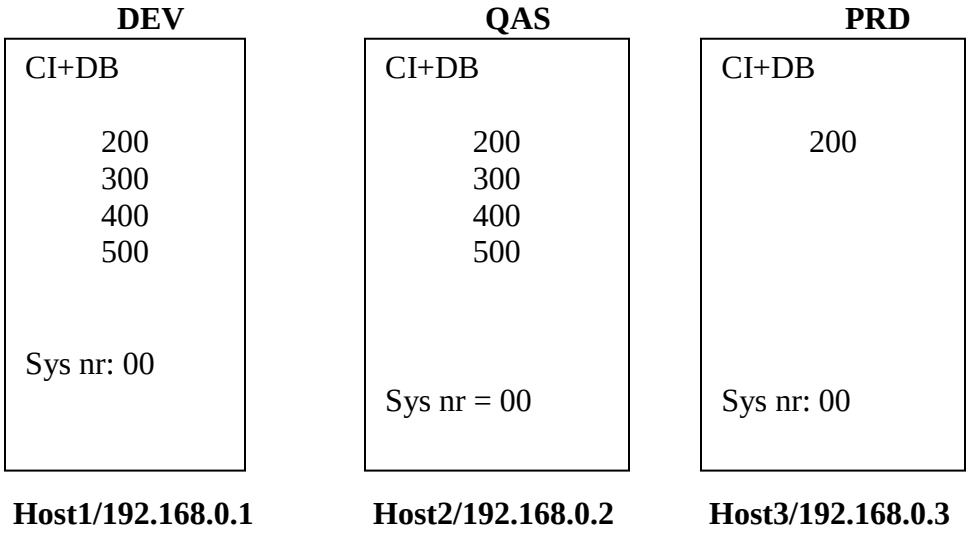
Other Supporting **Tcodes** for User Administration

SU01: User Management
PFCG: Role Maintenance (Creating Roles and Profiles)
SUGR: User Group Creation
SU10: Mass user changes (Like creating bunch of users, deleting bunch of users)
SUIM: User information system (Like finding how many roles, how many profiles)
EWZ5: Locking / unlocking all the users in once click in each client.
SU53: Authorization check (Which checks user's desired auth and report to Basis)
SU24: Maintain Auth object to transactions

SU25: Profile Generator

RFC Destination: SM59

RFC Destination is maintained to communicate between two SAP and Non-SAP systems from SAP system.
There are two terms we use called Source and Target System
Source: System from which the destination will be maintained
Target: the Destination system or the system for which the destination is maintained



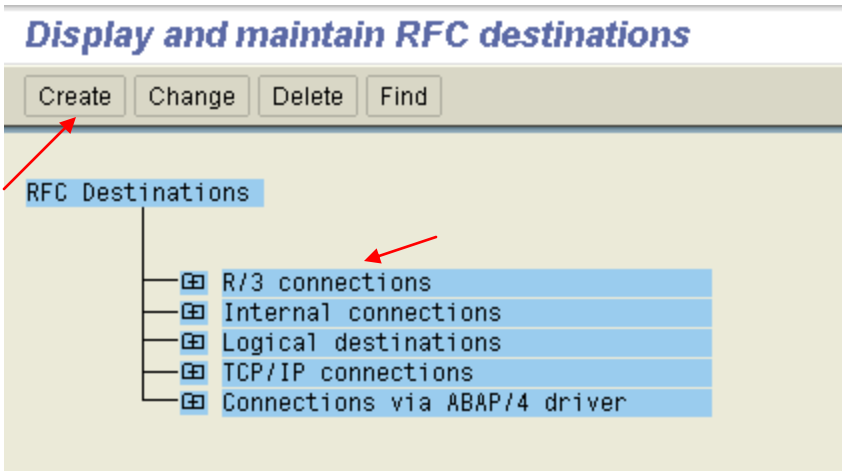
From above figure, there are three SAP systems. In order to set up a communication path between the systems , we need to use the SAP's method . This destination setup is know is RFC destination.
To set up a RFC destination , we need the Source System as well as Target System name

If Source is DEV and QAS is target, that means DEV wants to talk/reach to QAS.Following informations are needed inorder to setup the RFC destination in DEV

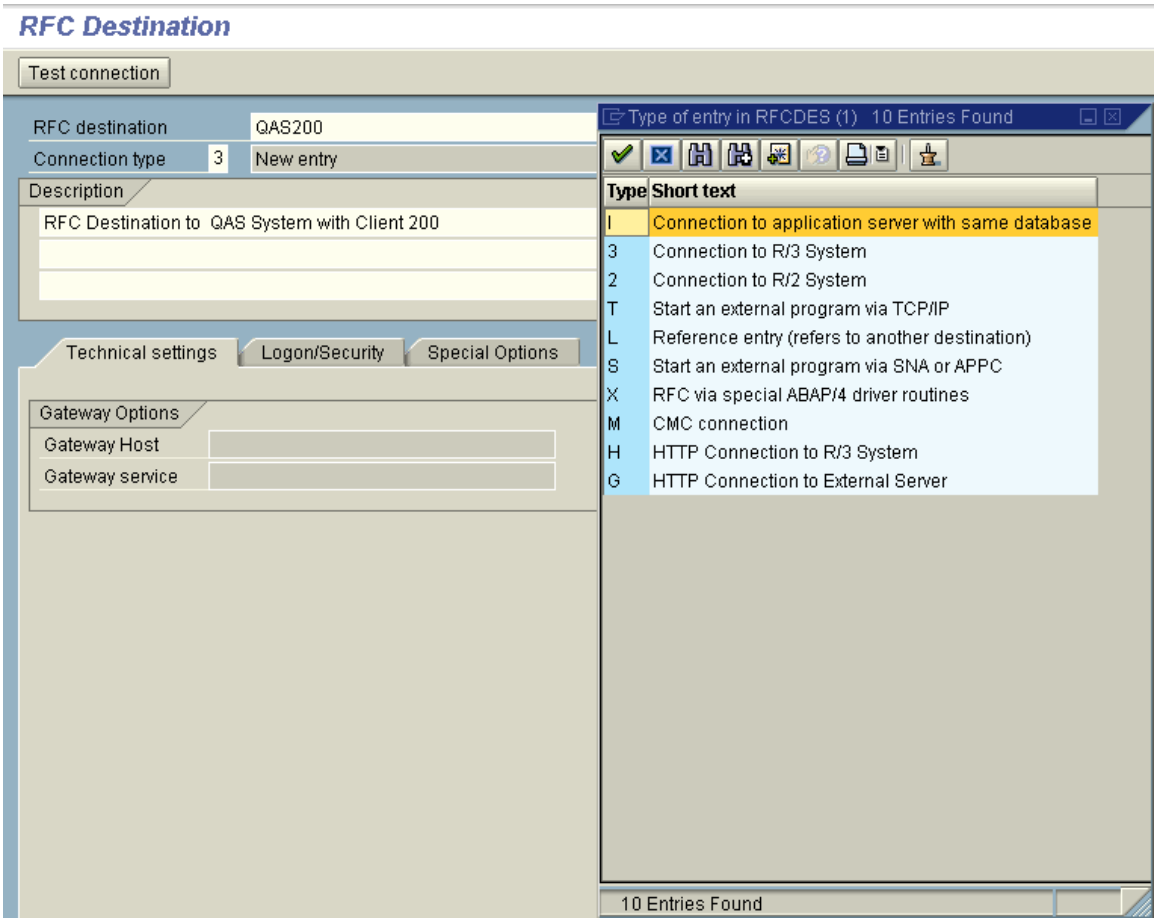
Source (DEV)
RFC dest name: QAS200

Target (QAS)
Hostname=host2
Sys nr: 00
Client = 200
Comm user: ALEADM
Password:

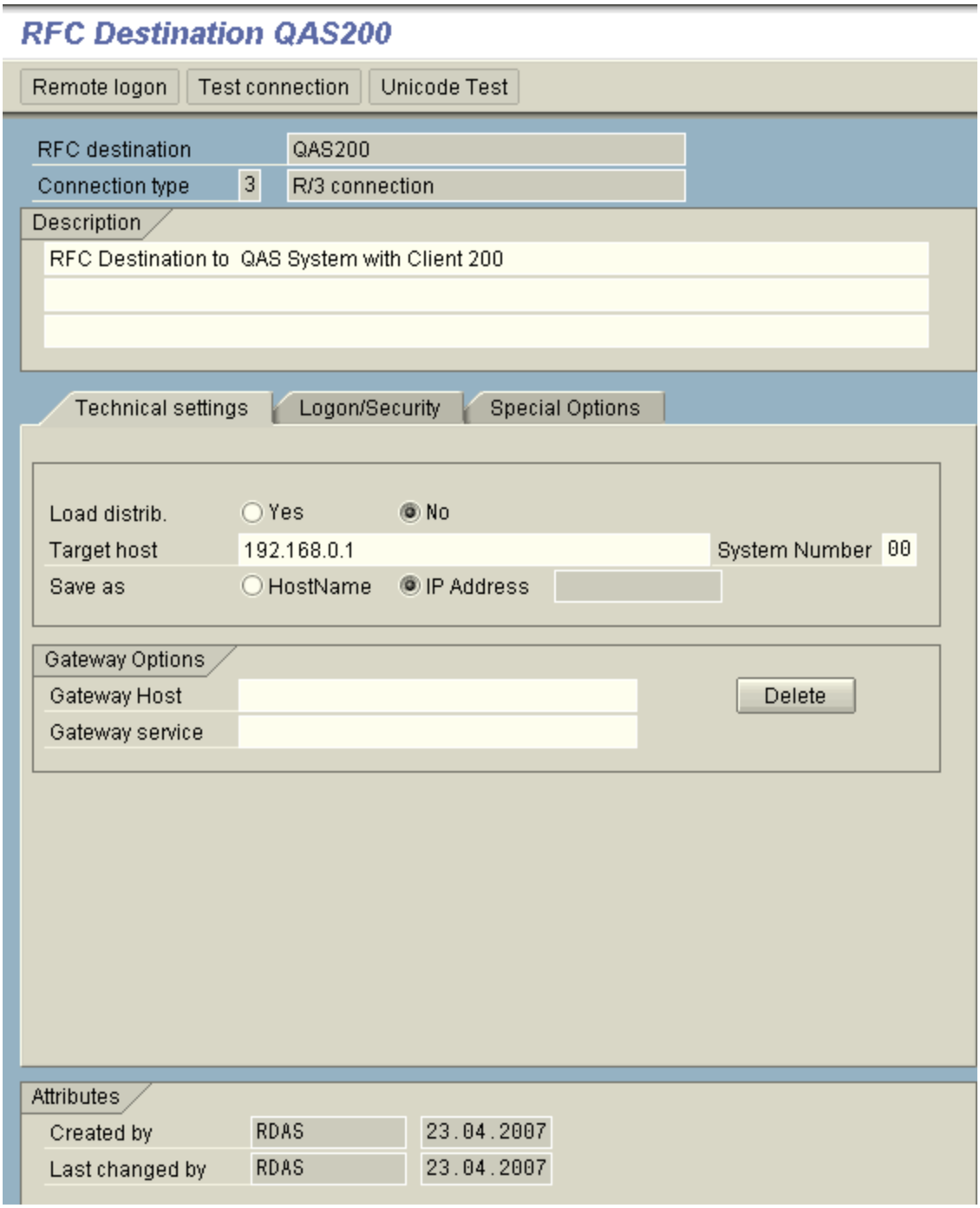
1. Login to Source system at SAP level i.e to DEV in above example
2. Execute SM59.
3. Select R/3 connection and Click on Create button



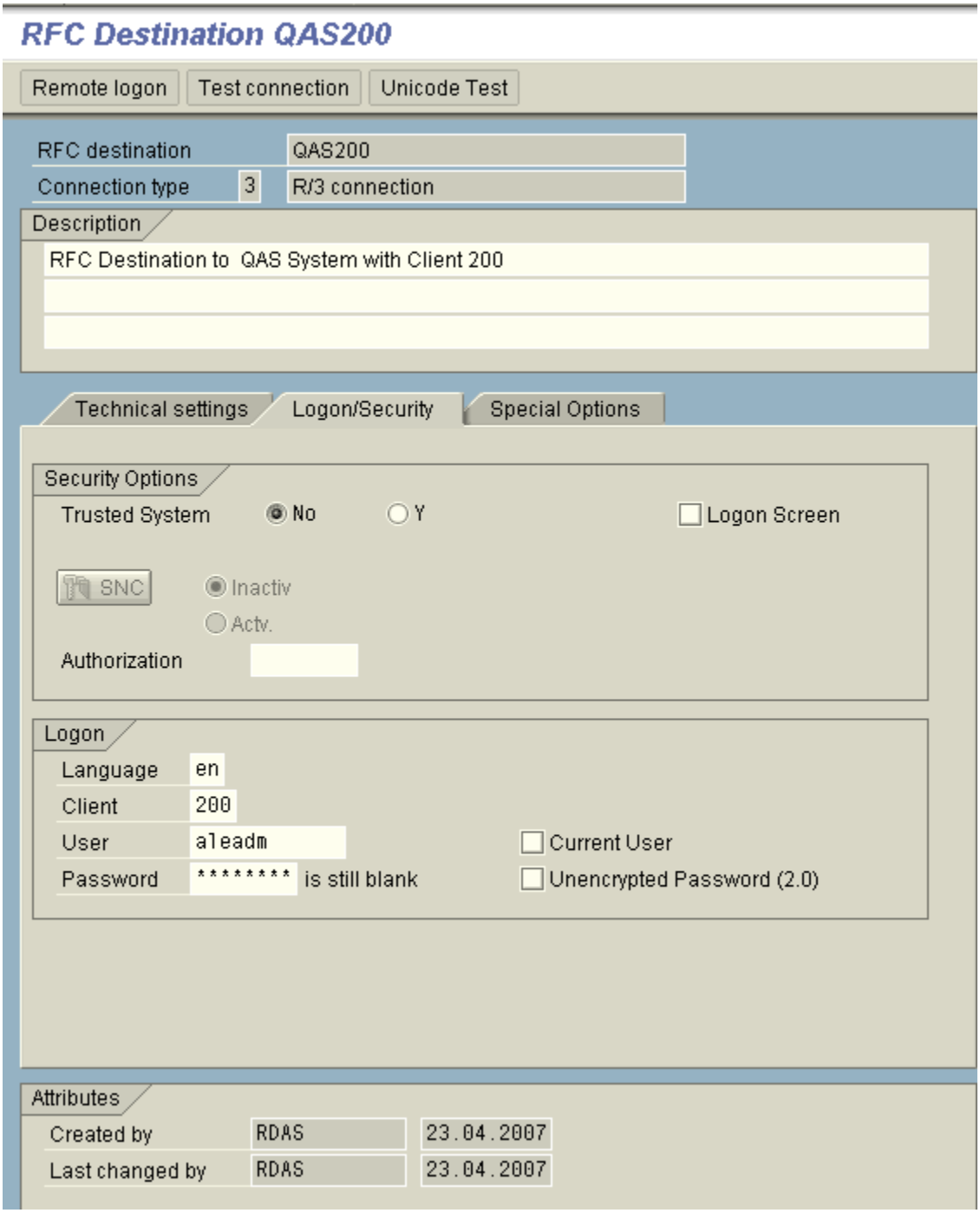
4. Select Connection type 3
5. Provide a description for the destination as below



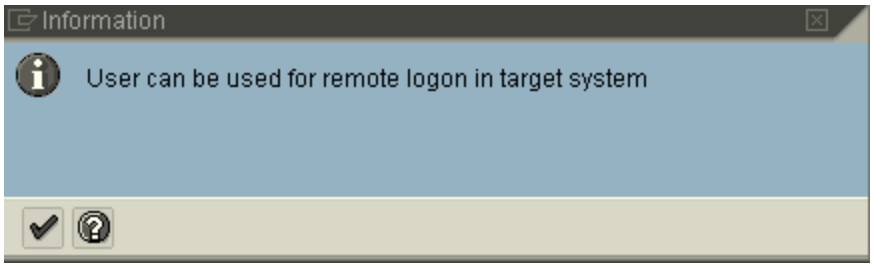
6. Save
7. Now provide the techinal Detail for the target server as below



8. Now provide the Client logon details as show below.



8. Click save.
9. Now click on Test connection . Click continue on warning message screen. Look for successful message



10. Next click on Remote Logon

If it's a background user used then your screen will be standstill
If a dialog user is used then it will open a SAP screen for the dialog user's session.
That means the user uses the username and password provided in the logon detail screena and opnes the session.

If any of the gateway host server is used, then mention the gateway host in gateway host tab.
Perform the same steps if Source = **QAS** and Target = **DEV**

System Profiles: RZ10

There are three system profiles available for SAP to work on

a. Start profile
b. Instance Profile
c. Default Profile

SAP profiles are operating system files that contain instance configuration information. SAP systems can consist of one or more instances.

The SAP profiles are stored in a special file directory. This directory can be made accessible from all hosts, depending on current requirements.

UNIX systems:/usr/sap/<SID>/SYS/profile
Microsoft Windows NT systems: \\<SAPGLOBALHOST>\sapmnt\<SID>\sys\profile\

Start Profile: START_DVEBMGS<nr>_<hostname>
E.g. START_DVEBMGS10_IDESBASIS1
When you start an SAP instance on a host, the start profile defines which SAP services are started (message server, dialog, gateway or enqueue process. for example). The startsap program is responsible for starting these service processes, and it uses a start profile to begin the startup process.

The processes that can be started include:
Application server

Message server
SNA Gateway
System log send demon
System log receive demon

Instance Profile:
Instance profiles provide an application server with additional configuration parameters to complement the settings values from the default profile. Typically, these parameter settings adapt the instance according to the desired resources. They also define the available instance resources (main memory, shared memory, roll memory and so on), and how to allocate memory to the SAP application buffers.

Below is a typical instance profile:

*#.**

#.* Instance profile BIN_DVEBMG53 *

#.* Version = 000005 *

#.* Generated by user = BLOCHING *

#.* Date generated = 04.08.1995, 11:10:35 *

#.**
INSTANCE_NAME = DVEBMG53

SAPSYSTEM = 53

SAPSYSTEMNAME = BIN

abap/buffersize = 40000

abap/programs = 600

ipc/shm_psize_10 = 15000000

ipc/shm_psize_14 = 0*

ipc/shm_psize_40 = 17000000

rdisp/PG_SHM = 1000

rdisp/ROLL_MAXFS = 16384

rdisp/ROLL_SHM = 200

rdisp/btctime = 60

rdisp/wp_no_dia = 5

rdisp/wp_no_enq = 1

rdisp/wp_no_vb = 1

rdisp/wp_no_vb2 = 1

You can choose any name for an instance profile. The SAP naming convention is as follows: **<SID>_<instancename>** or **<SID>_<instancename>_<hostname>**.
e.g. **TBQ_DVEBMGS10_TBLUSR17**
Default Profile:
If you want to assign the same parameter value for all application servers (such as the name of the database host, or the host on which the message server is running), enter it in the default profile. In general, you can list any parameter you like here.

You **cannot** choose a name for the default profile. It is always called **DEFAULT.PFL** . The default profile, like all other profiles, is located in the global profile directory of the SAP System. For example, under UNIX it is located in the directory **/usr/sap/<SID>/SYS/profile (<SID> =** SAP System name). There is always one active default profile.

Sample Default profile: **DEFAULT.PFL**

SAPDBHOST = idesbasis1
DIR_ORAHOME = /oracle/S10
rdisp/mshost = idesbasis1
rdisp/vbname = idesbasis1_S10_10
rdisp/enqname = idesbasis2_S10_10
rdisp/btcname = idesbasis2_S10_10
rdisp/sna_gateway = is0001
rdisp/sna_gw_service = sapgw00

Importing Profiles

When you first install an SAP System, upgrade to a new SAP release or add a new application server, the system automatically generates or updates SAP instance profiles at operating system

level. Unfortunately, the installation program cannot save these profiles directly to the database. You must therefore import the SAP instance profiles before you can then edited them**.**

Procedure.

1. Call the CCMS profile maintenance tool by choosing CCMS-> Configuration -> Profile Maintenance. Alternatively, call Transaction **RZ10**.
2. Choose **Utilities -> Import profiles -> of active servers**. The system imports the default profile and all start and instance profiles that are used by the SAP instances. The system checks the profiles and displays a log. The names of the profiles in the database are taken from the corresponding file names on the operating system.

If you import the instance profile /usr/sap/C11/SYS/profile/C11_D53, then the profile in the database will be called C11_D53.

Once you have finished importing the profiles, position the cursor on the Profile field and press F4 . The system displays the names of the profiles that were imported.

Change Profile Parameter:

1. Execute RZ10 -> select the profile from drop down menu -> click in extended maintenance -> click on change as shown in **Fig-9** below.

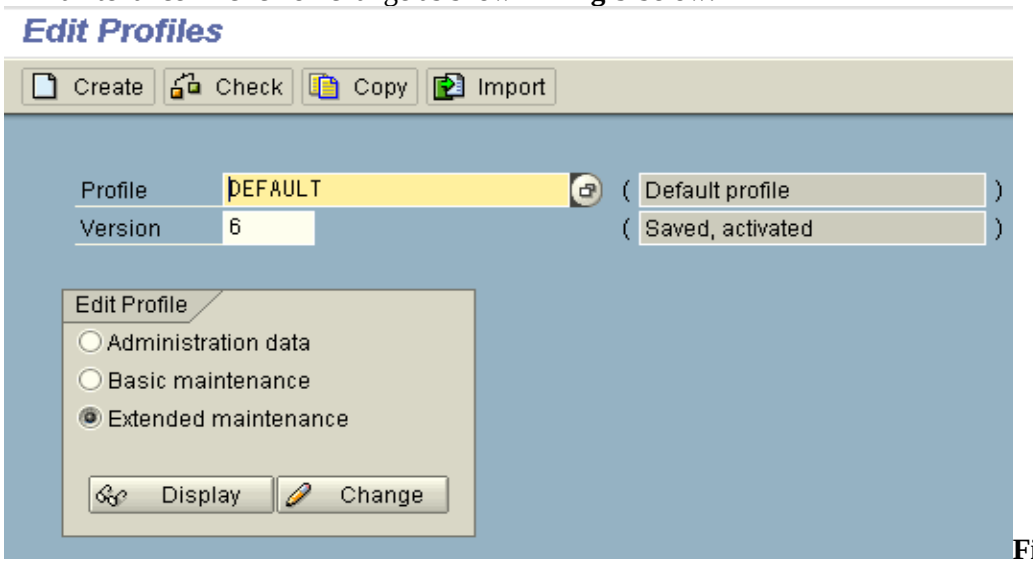


Fig-9

2. In next screen , click on create parameter**.** Parameter **.**
3. Provide the parameter name and value as shown in Fig-10

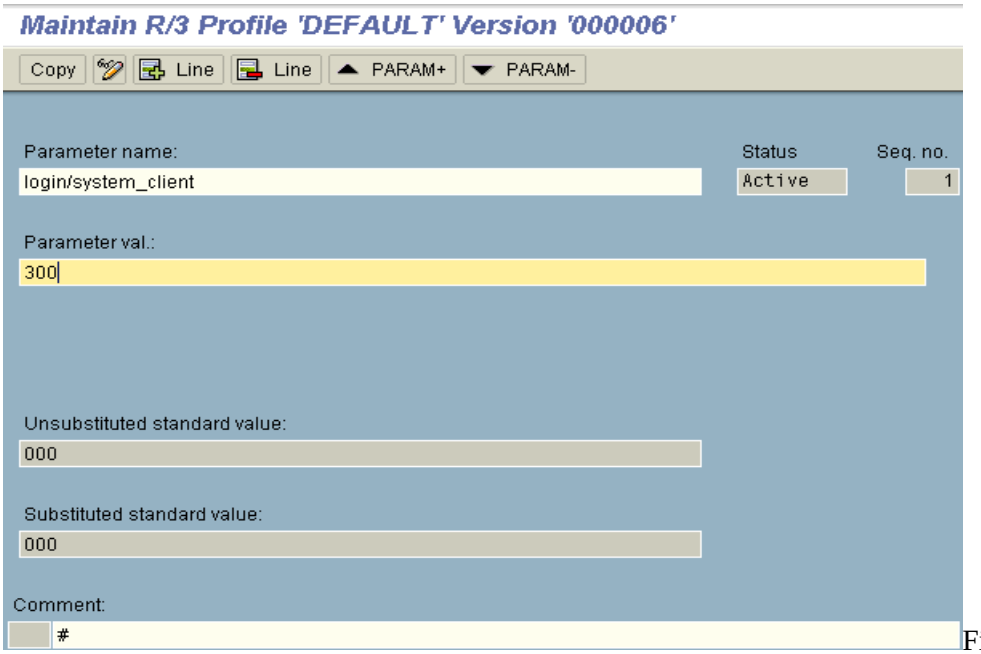


Fig-10

Here the parameter **login/system_client = 300**.
That means when any user will login, the default client will be '300' instead of '000'

4. Click on Copy button.
5. Click on Back arrow button.
6. check your new parameter is added to the profile

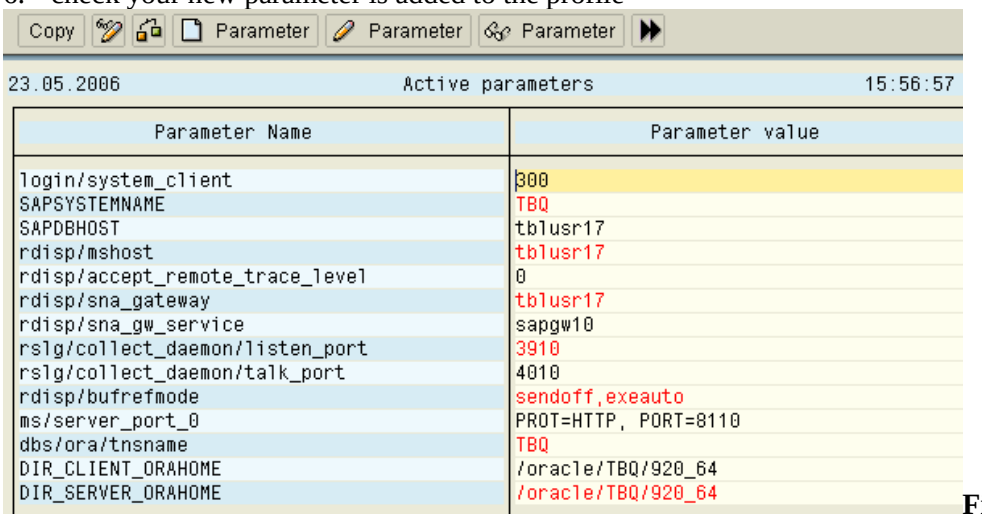


Fig-11

7. If you want to add more parameters then repeat from step-2 to step-5
8. If nothing more to add then click on button again from the profile screen.
9. Click **yes** on the screen to save the change as shown in Fig-11

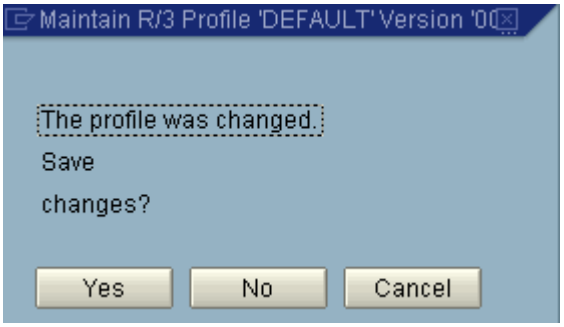


Fig-12

10. Now click on Save button from RZ10 main menu. If you see the following screen then click on "No".

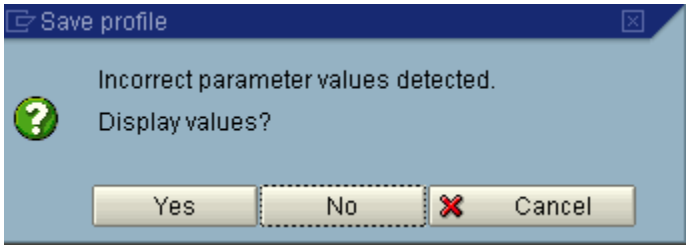


Fig-13

11. Click "Yes" on next screen.

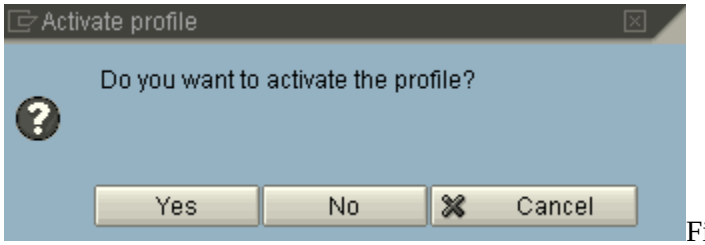


Fig-14

12. Now you got a confirmation that profile is activated as shown in **Fig-15** below.

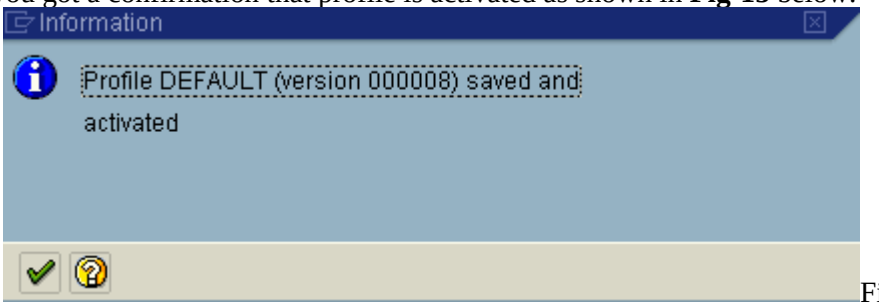


Fig-15

13. Click on Continue  button

14. Now In order to make this parameter into effect, you have to restart sap. Do not stop database and OS as shown below the warning for restart.

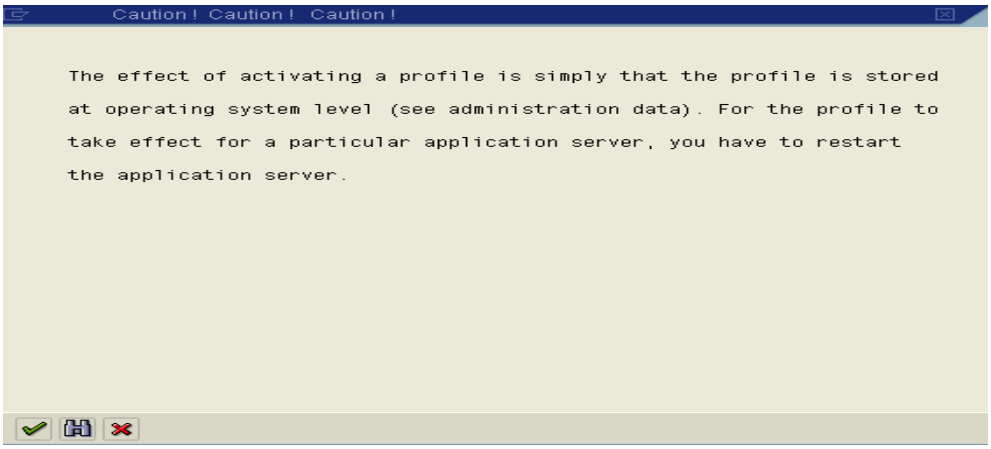


Fig-16

15. After SAP is restarted, you can see your new client 300 is the default client to login.

Explore more in
http://help.sap.com/saphelp_erp2005/helpdata/en/c4/3a6143505211d189550000e829fbbd/frameset.htm

STOP and START SAP

At Unix:

```
[/home/tbpadm]> stopsap r3

Stopping the SAP instance DVEBMGS20
-----------------------------------
 Shutdown-Log is written to /home/tbpadm/stopsap_DVEBMGS20.log
 Instance on host tblusr17 stopped
 Waiting for cleanup of resources.............
 IGS on host tblusr17 stopped
[/home/tbpadm]> startsap r3

Checking TBP Database
-----------------------------
 Database is running

Starting SAP-Collector Daemon
-----------------------------
15:34:19 17.10.2006   LOG: Effective User Id is root
*******************************************************************************
* This is Saposcol Version COLL 20.89 640 - AIX v6.15 5L-64 bit 050707
* Usage:  saposcol -l: Start OS Collector
*         saposcol -k: Stop  OS Collector
*         saposcol -d: OS Collector Dialog Mode
*         saposcol -s: OS Collector Status
* The OS Collector (PID 1331296) is already running .....
*******************************************************************************
 saposcol already running

Checking TBP Database
-----------------------------
 Database is running

Starting SAP Instance DVEBMGS20
-----------------------------
 Startup-Log is written to /home/tbpadm/startsap_DVEBMGS20.log
 Instance on host tblusr17 started
 IGS on host tblusr17 started

[/home/tbpadm]>
```

Stop SAP on Windows

1. Login as <sid>adm either by Remote desktop or physically sitting at console
2. Double click on SAPMMC icon from Desktop
3. Select the <SID> or the appserver name i.e. the hostname.
4. click on Stop symbol from top right pane menu
5. Look for **grey color**. When the color becomes gray , that means SAP is stopped

Start SAP on Windows

1. Login as <sid>adm either by Remote desktop or physically sitting at console
2. Double click on SAPMMC icon from Desktop
3. Select the <SID> or the appserver name i.e. the hostname.
4. click on Start symbol from top right pane menu
5. Look for **Green color** in the window and work processes status from WP table. All the work processes should be in **wait** status.

Logon Group (Logon Load Balancing): SMLG

Logon Group is used for logon load balancing.
Logon load balancing increases efficiency with respect to performance and the use of system resources for variously defined workgroups by distributing users across available application servers based on requirements for workgroup service and utilization.

To log on to an SAP system, the user needs to know only the name of the SAP system and the logon group. The host name and system numbers are no longer needed when you have logged on.

Recommended:

With logon load balancing and servers assigned to specific applications:

Logon Group FI/CO		Logon Group SD	
Server A FI/CO	Server B FI/CO	Server C SD	Server D SD

With logon load balancing and shared, or homogeneous, properties of servers across logon groups:

Logon Group FI/CO			Logon Group SD		
Server A FI/CO	Server B FI/CO	Server C FI/CO	Server C SD	Server D SD	Server E SD

Not recommended:

With logon load balancing and servers available to all applications:

Logon Group PUBLIC			
Server A FI/CO + SD	Server B FI/CO + SD	Server C FI/CO + SD	Server D FI/CO + SD

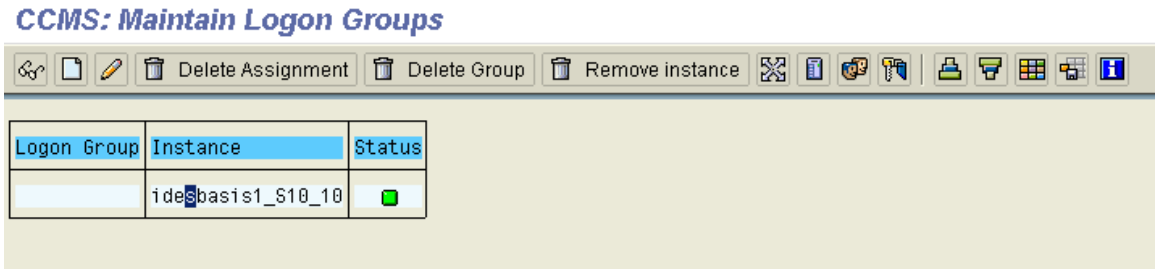
With only two servers with logon load balancing and servers assigned to specific groups:

Logon Group FI/CO	Logon Group SD
Server A	Server B

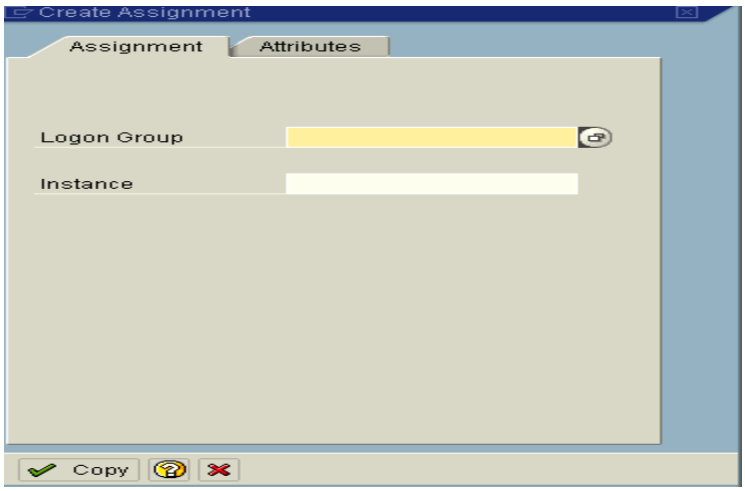
Fig- 21

Configure Logon Group

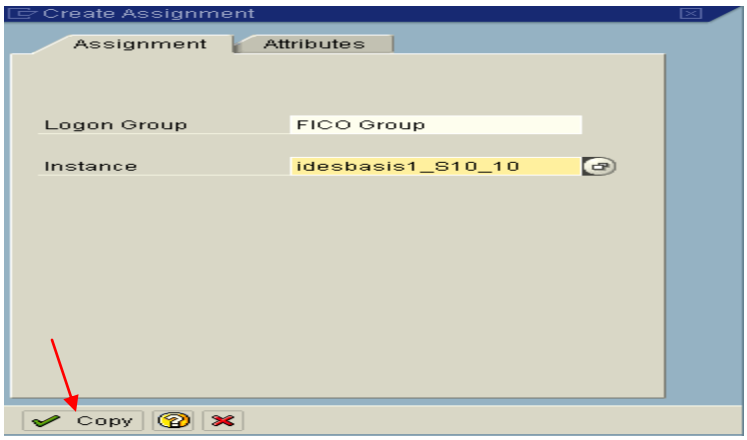
1. Execute SMLG from sap command line
2. If you are configuring a new system , then delete all the existing one which were created default while installation. Don't delete if you are adding in realtime to existing server.
3. To delete select the group -> click on Delete group -> Cehck the group name and confirm it-> logon group is deleted.
4. Create Logon Group as follows



click on Create  button

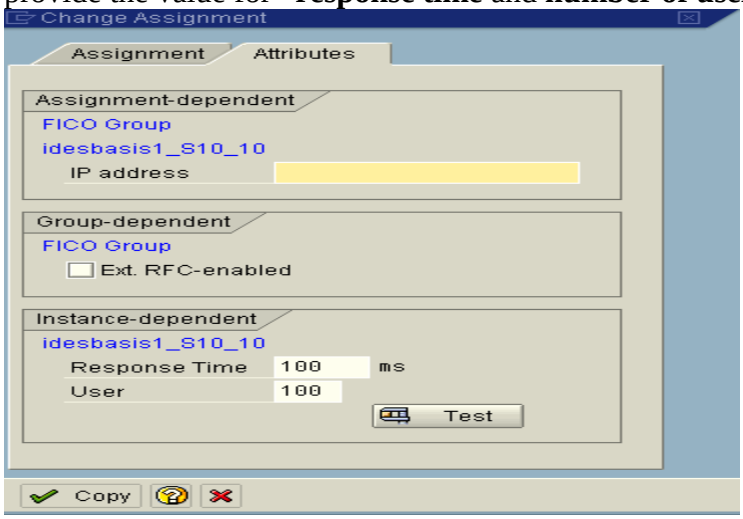


Provide he logon group name
Select the instance name for the group



clcik on Attribute button

provide the value for **response time** and **number of users**.



click on copy  button.

Click Save  .

5. Now go to saplogon menu and click on groups.

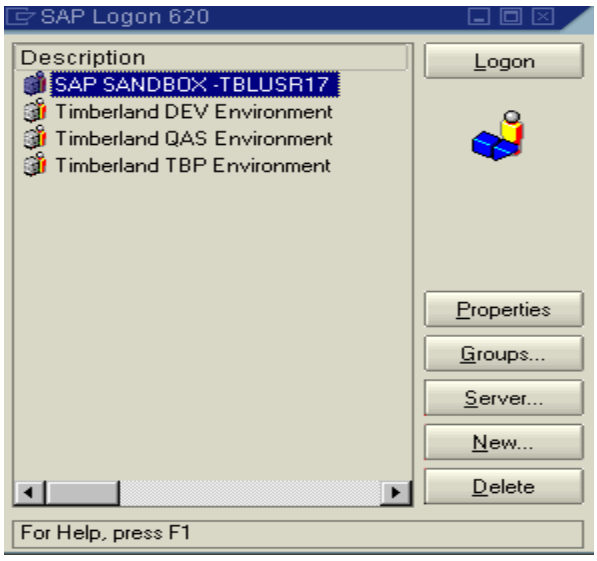


Fig- 23

6. Provide the SID name and message server name in next screen as shown in Fig-24
7. Now you can see the logon group list
8. Select the logon group and click on Add button.
9. Now you can see the logon group in the server list of you saplogon menu.
10. This logon group has to be created in each SAP users SAPlogon pad to ensure they are logging onto their logon group only.

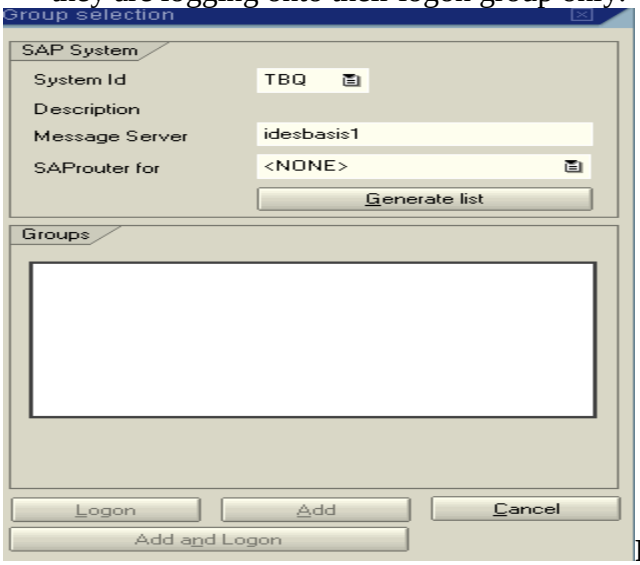


Fig-24

Operation mode (RZ04, SM63, RZ03)

An **operation mode** defines a resource configuration for the instances in your system.

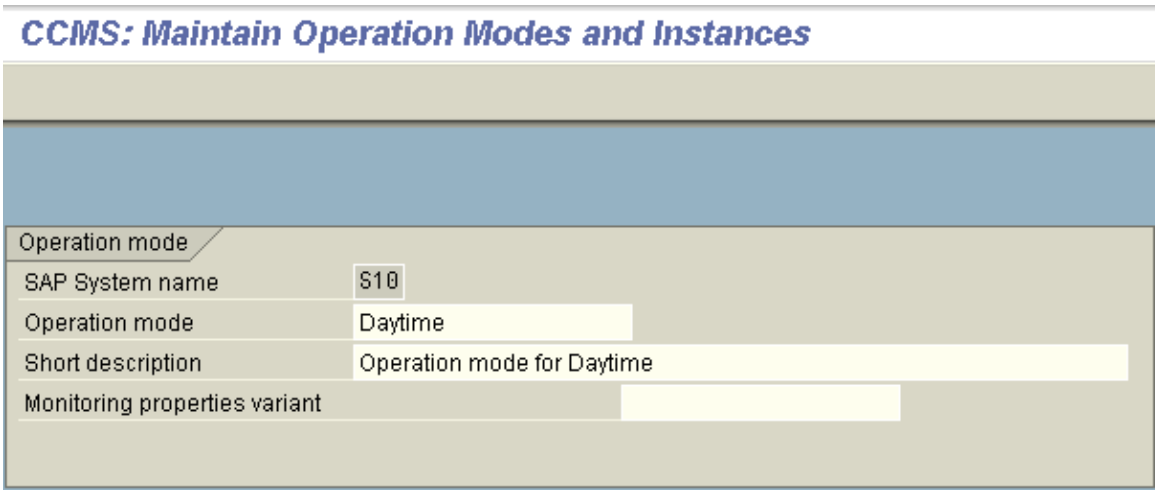
Operation mode is used when there is a requirement large no. Background jobs to be run during less workload i.e nighttime.

To use more BTC process operation mode is configured. Operation mode converts specified no of dialog processes to BTC processes during Nighttime and converts the same BTC processes to Dialog processes during Day time.
It's the way to utilize free Dialog and BTC processes to fulfill the requirement using same resource.

Define Operation Mode

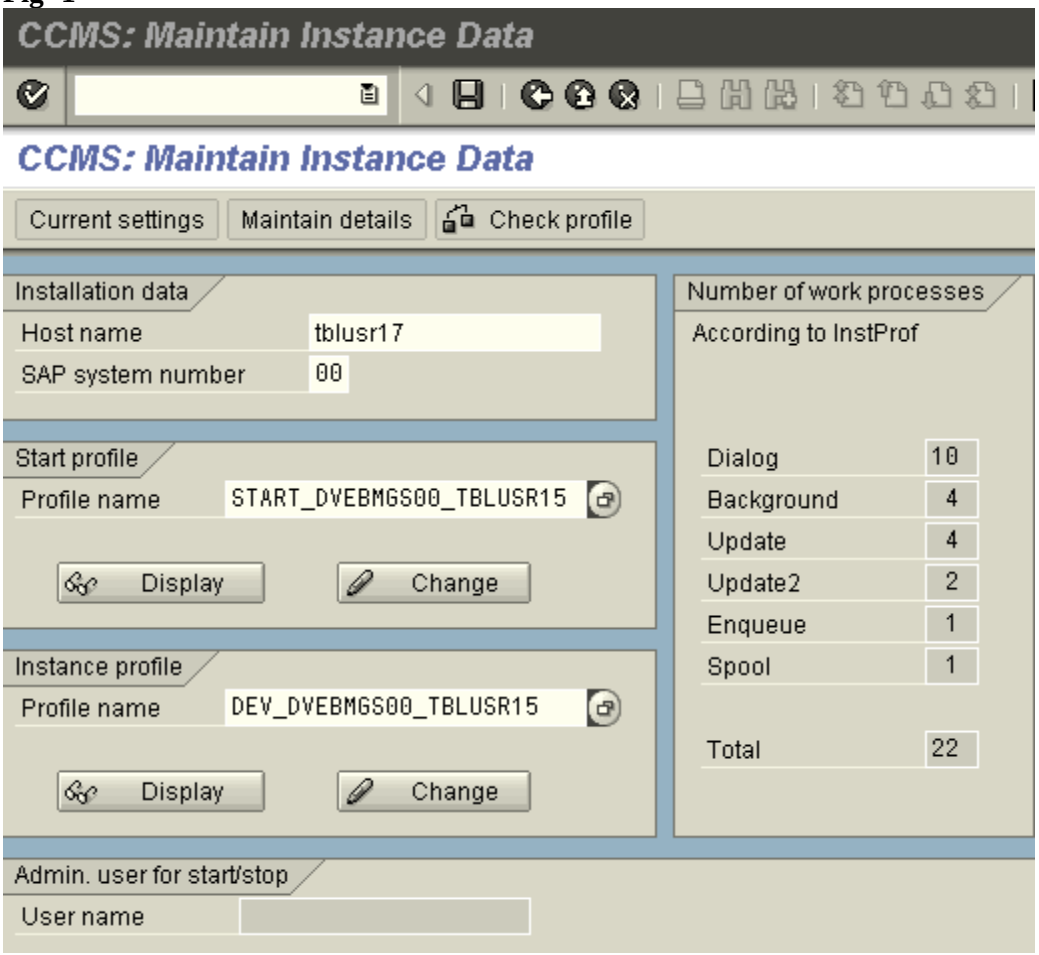
To define operation mode follow the following steps

1. execute tcode RZ04
2. check if any existing entry is there. If it is there, then select the entry, then click on operation mode from top menu bar-> Delete -> confirm to delete.
3. Repeat the step to delete all the entry shown in the screen
4. Click on create operation mode (F5) ->
   Provide an operation mode name say "Daytime"
   Provide some description about this operation mode "Day time operation mode"
   Click on save button.



5. Repeat the step 4 to create one more operation mode say "Night Time"
6. Now click on Instances/operation modes. Check if any previous entry is there. If it is there, then select the entry and click on delete Instance-> Delete Entry
7. Repeat step 6 to delete all the entries
8. Now Click on create new instance button ->
9. In the next screen, provide the information as shown in the F**ig-1** below.
10. click on save.

Fig -1



11. Now in the next screen, provide operation mode name by selecting from drop down menu i.e day time as shown in Fig-2
12. Now click on Background Process and then adjust it by using + or – sign from the buttom to adjust dialog and background process during day time.

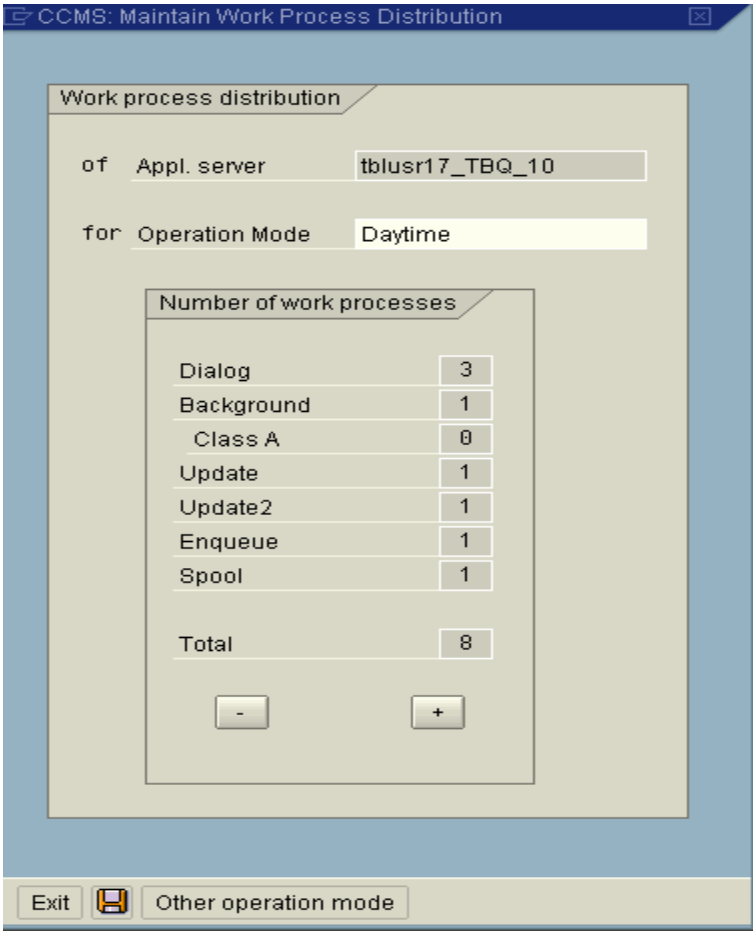


Fig-2

In above figure , operation mode is “Daytime” , dialog process is increased to 3 and background process is decreased to 1.

13. Click on save.
14. click yes on next screen.

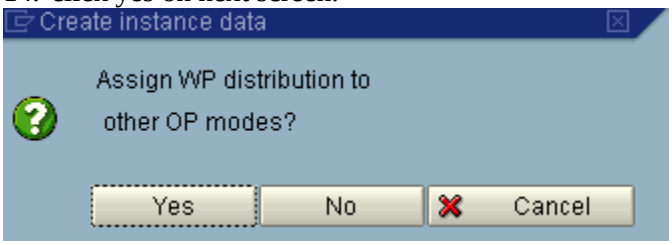


Fig-3

15. Now select the operation mode “Night time”. Adjust the dialog process and background process . This time dialog process should be less compared to background process
16. Click on save.
17. Next screen Click No

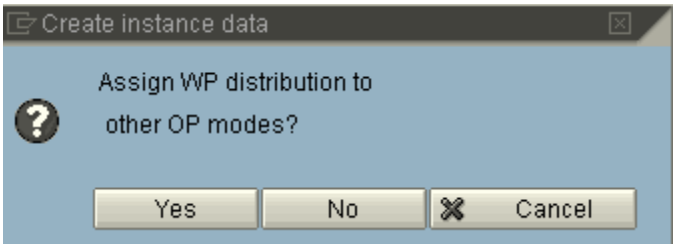


Fig-4

18. Now in Next Screen click Save.

Time period set for operation mode (SM63)

19. Now execute /OSM66
20. Select **Normal Operation (24 hours**) -> Change

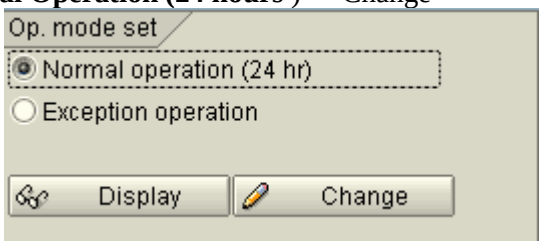


Fig-5

21. Select the time period say 6:00 am to 18:pm will be "Daytime, and 18:00 pm to 6:am will be night time.
22. Select 6:00pm ->press F2 and then select 18:00 and press F2 -> click on Assign ->provide the operation mode "Daytime"

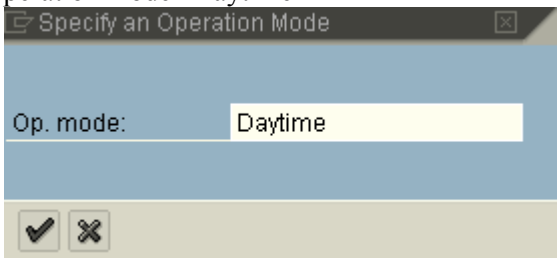


Fig-6

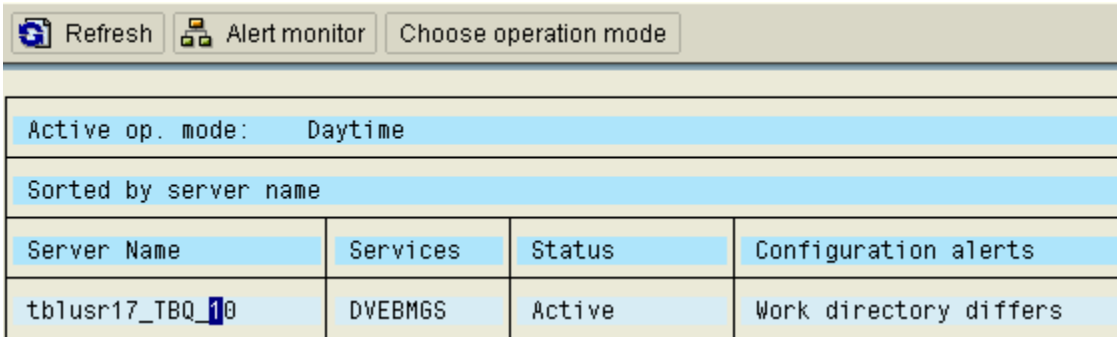
23. Click on Continue button.
24. Repeat the same step for other time period to assign to "Night Time" operation mode.
25. The figure looks like as below in **Fig-7**
26. Click on save.

Start/end time	Name of the active operation mode
00.00 - 01.00	Nighttime
01.00 - 02.00	Nighttime
02.00 - 03.00	Nighttime
03.00 - 04.00	Nighttime
04.00 - 05.00	Nighttime
05.00 - 06.00	Nighttime
06.00 - 07.00	Daytime
07.00 - 08.00	Daytime
08.00 - 09.00	Daytime
09.00 - 10.00	Daytime
10.00 - 11.00	Daytime
11.00 - 12.00	Daytime
12.00 - 13.00	Daytime
13.00 - 14.00	Daytime
14.00 - 15.00	Daytime
15.00 - 16.00	Daytime
16.00 - 17.00	Daytime
17.00 - 18.00	Daytime
18.00 - 19.00	Daytime
19.00 - 20.00	Nighttime
20.00 - 21.00	Nighttime
21.00 - 22.00	Nighttime
22.00 - 23.00	Nighttime
23.00 - 00.00	Nighttime

Fig-7

Operation mode Control: RZ03
Operation mode control panel is used when Basis wants to switch manually the opmode or start/stop the server.
Else the opmode works automatic as per configuration above.

27. Select the server name which is shown active.



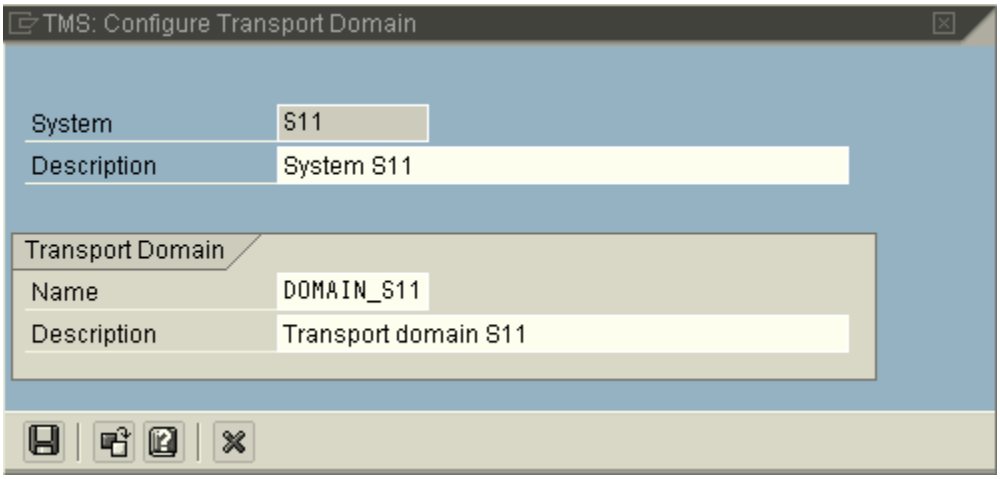
28. Click on *Choose operation mode* -> Select the operation mode you want to switch (Daytime) -> Click n choose
29. Now select the Active server.
30. Go to Control -> Switch operation mode -> Selected Server ->click yes on next screen for the operation mode you choose earlier to switch (Daytime).
31. Operation mode switch occurred.
32. Check the log of switch in System log (SM21)

Operation mode configuration is completed.

TRANSPORT MANAGEMENT SYSTEM(STMS)
(Correction and Transport System(CTS)
CTS = (SE01 + SE09 + SE10) + TMS

Domain controller configuration

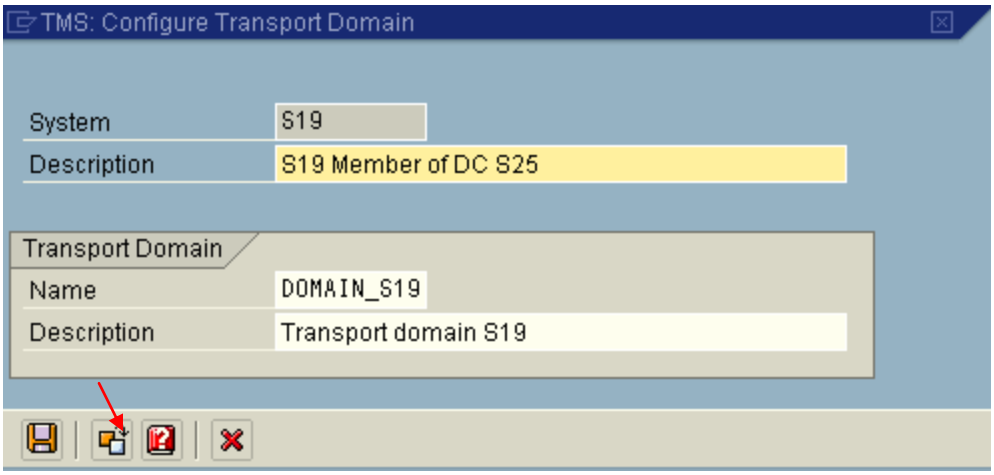
1. Login to the system to be configured as Domain Controller using DDIC/000 (e.g. S11)
2. Execute **STMS**



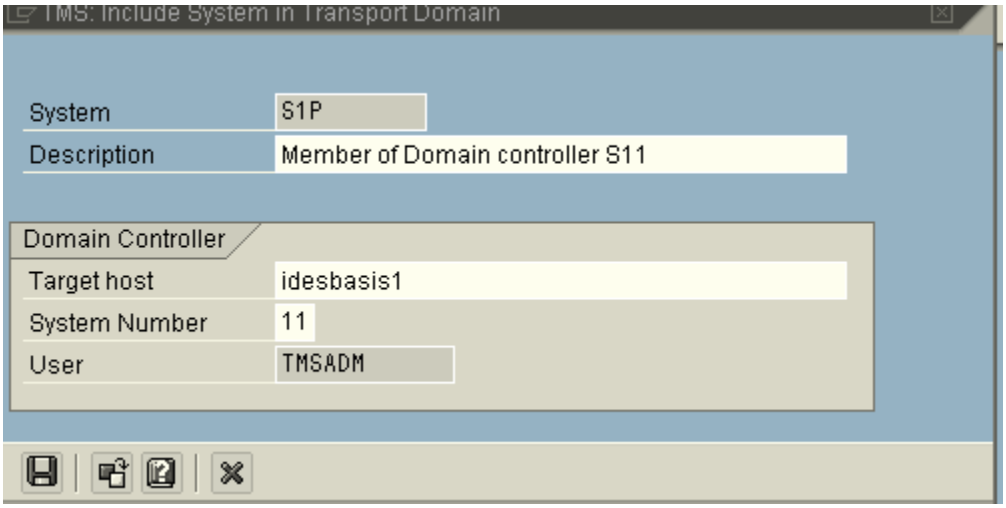
3. Provide the description for the domain controller
4. Click on Save 
5. You get the messae "you are logged onto the Domain controller"

Add Members

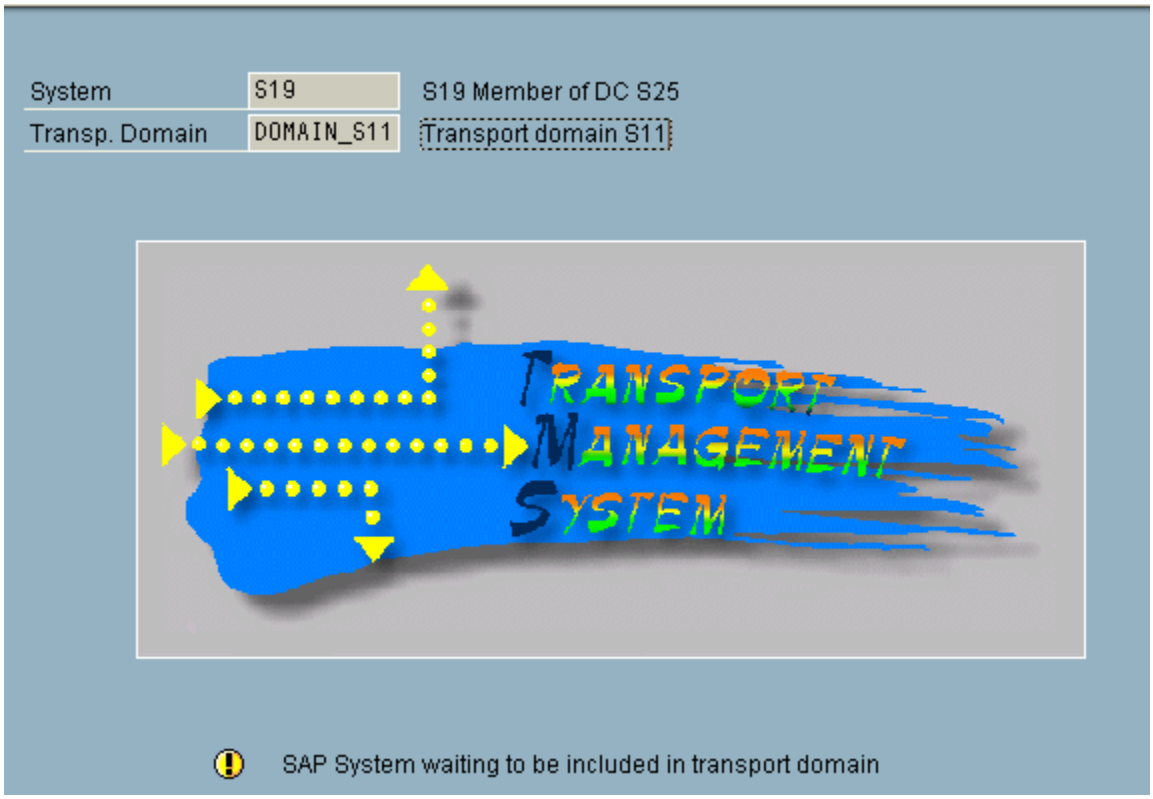
1. Login to the system to be included as member to the Domain controller using DDIC/000 (e.g. S19)
2. Execute tcode STMS
3. click on Other configuration button



4. Provide the description for the system
5. Provide the domain controller information like hostname and system number of DC in the next tab.



6. click on Save.
7. System gives message " SAP System Wiating to be included in Transport Domain."

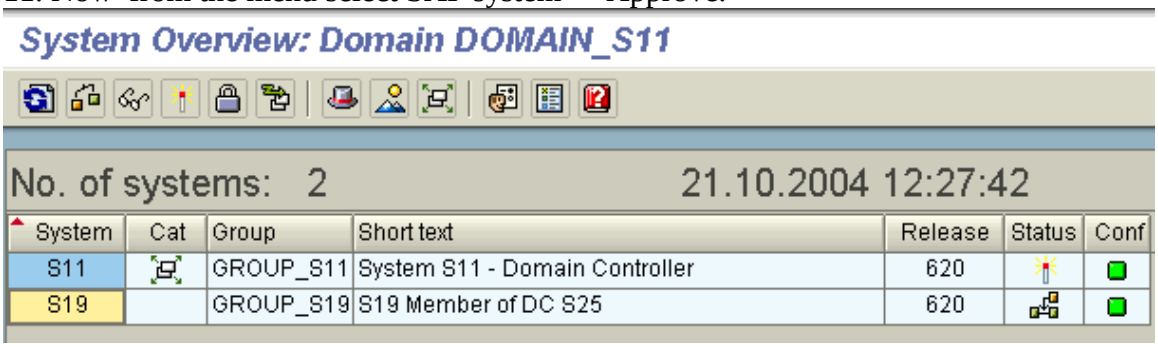


8. Now switch to domain controller system ->STMS (DDIC/000).

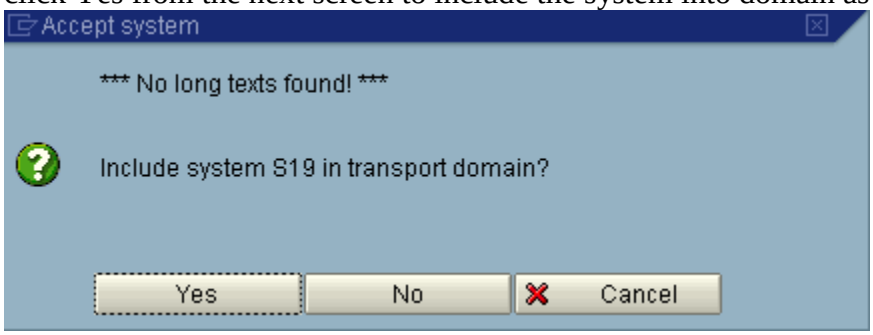
9.click on Overview -> Systems

10. Select the new member system from the list i.e. S19

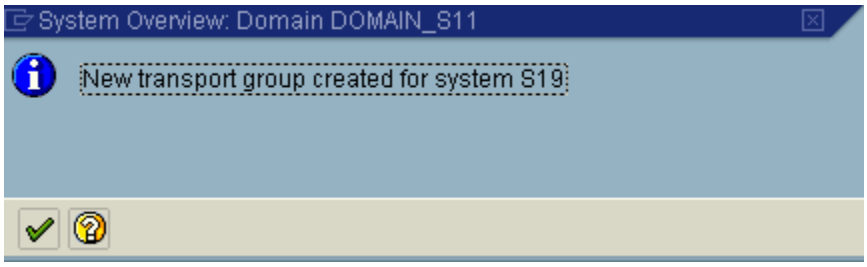
11. Now from the menu select SAP system -> Approve.



click Yes from the next screen to include the system into domain as shown in fig



click on continue button from next screen



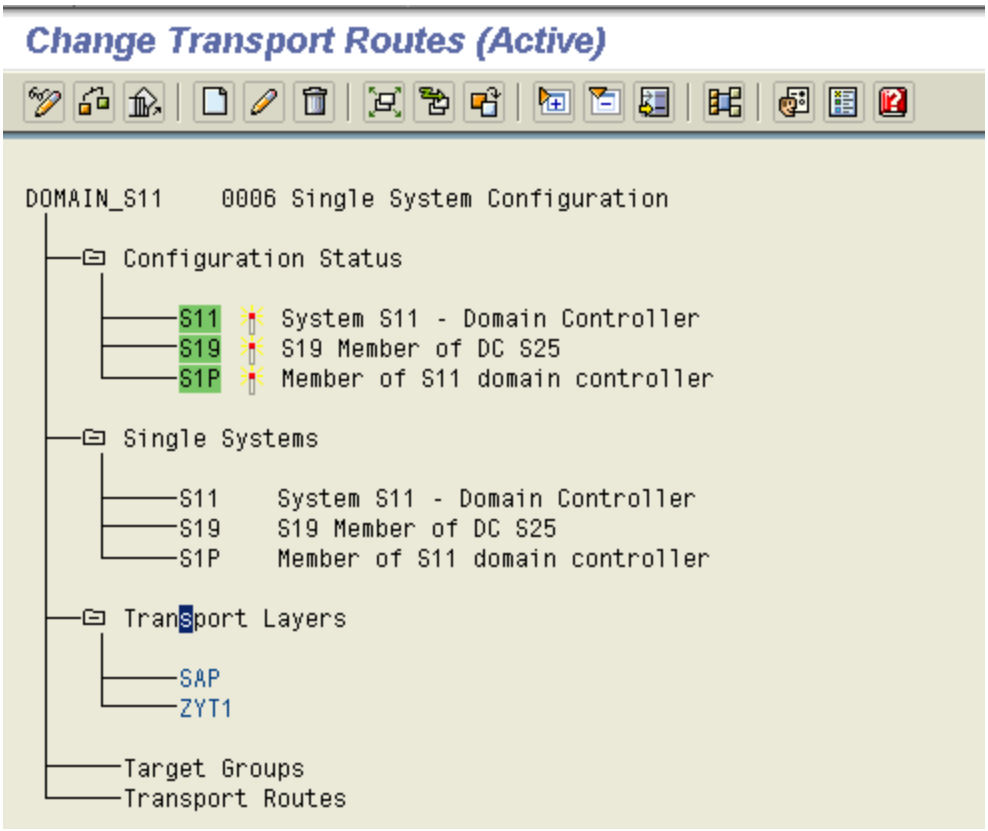
New member system is active now in TMS group.

To check it , Refresh the screen.

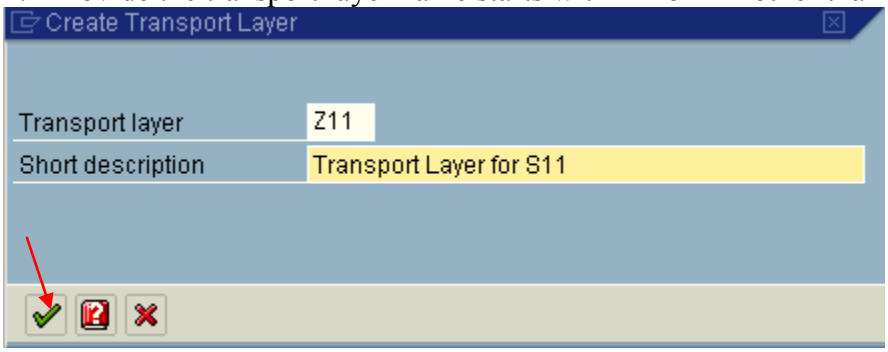
- To add another new member follow the steps from 1 – 13 .

Tranpsort Layer Creation

1. Login to Domain Controller using DDIC/000
2. Execute STMS
3. click on Overview – Transport Routes
4. Click on Transport Layers
5. click on change button 
6. click on Crate button from the menu



7. Provide the transport layer name starts with ‘Z’ or ‘Y’ other than SAP.



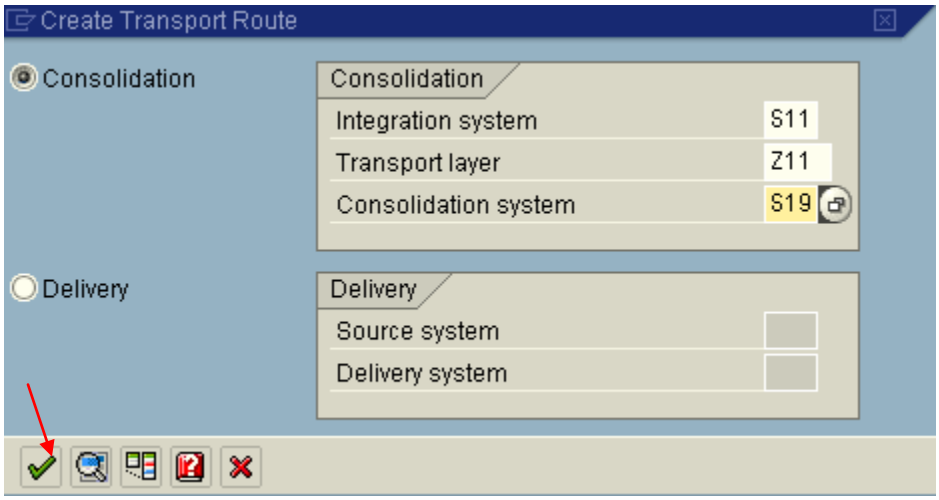
8. click on Transfer Button as marker in red arrow mark above.
9. click Save.
10. Provide the description in next screen
11. click yes to update the information to other systems
12. Transport Layer Z11 is created.

Transport Route.

a. Consolidation Route
b. Delivery Route

Consolidation Route Creation.

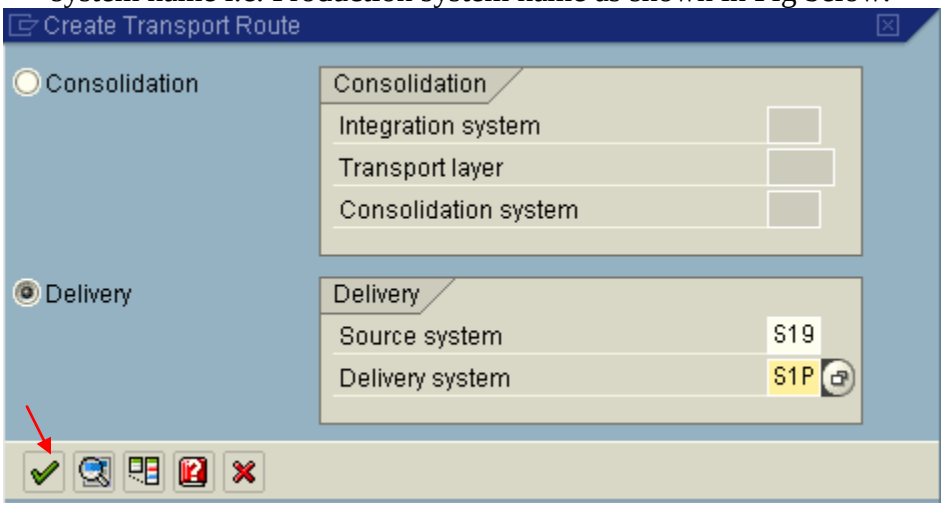
1. From the Transport Route screen, go in change mode
2. Go to Edit -> Transport route ->create from the menu
3. Select consolidation



4. Click on Transfer button as shown in above fig in Red Arrow
5. consolidation Route is created.

Delivery Route:

1. From Transport Route Screen click on Edit ->Transport Route ->create
2. Select "Delivery"
3. Provide the source system name i.e. consolidation system name and the Delivery system name i.e. Production system name as shown in Fig below.



4. Click on Transfer button as shown in Red Arrow mark in above figure
5. Delivery Route is created.
6. Click on save button.

7. confirm all screen to make the changes into system

Transport route Editors

a. Hierarchical Editor
b. Graphical Editor

From the Tranport Route menu click on Go to -> Graphical Editor / Hierarchical Editor

Domain controller config files

During domain controller configuration there are some files created at OS level as below

a. DOMAIN.CFG
b. TP_DOMAIN_<SID>.PFL

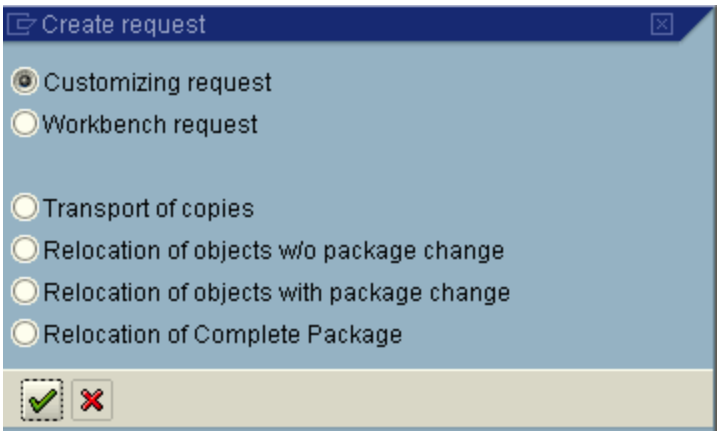
These files are located in Transport domain system at **/usr/sap/trans/bin** (unix)

Set TRANSDIR

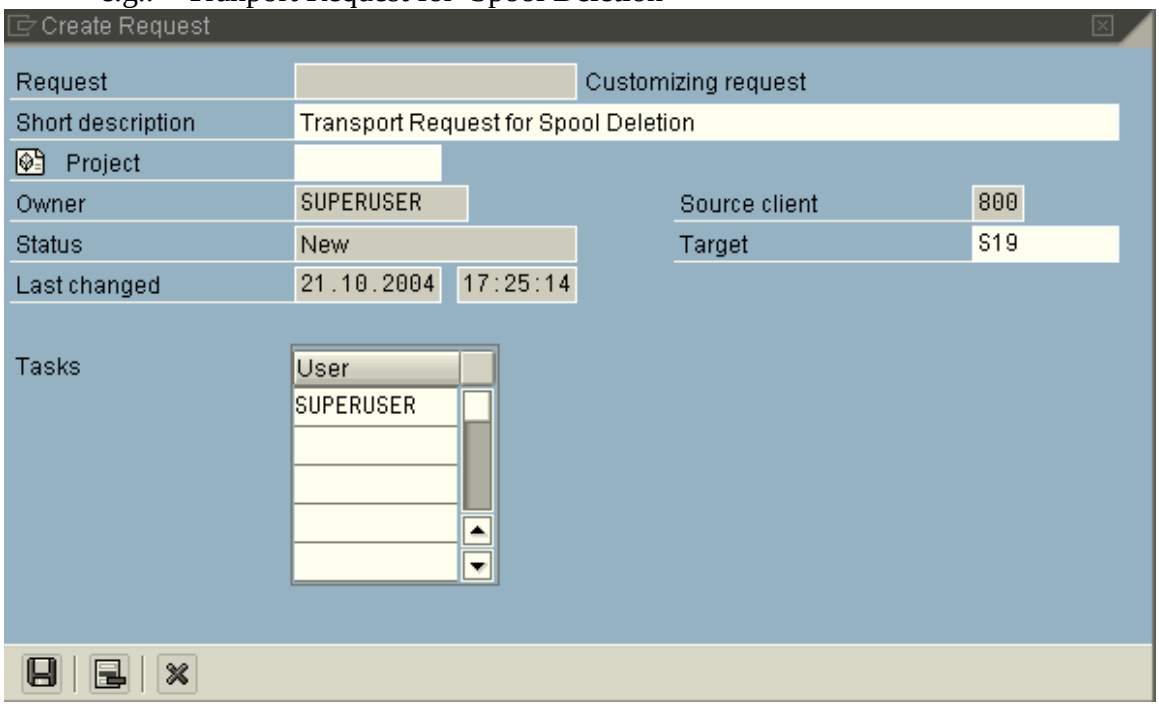
1. Login to domain controller
2. STMS -> Systems
3. Double Click on Domain controller
4. Click on Transport Tool
5. Click on change
6. Select TRANSDIR
7. Change the Path for trans folder to make it common to all other systems as below
   TRANSDIR = \\idesbasis1\sapmnt\trans
   Idesbasis1 = hostname of Development system or domain controller where Transport Request gets created
   sapmnt = is the share name of **sap** folder in c:\usr\sap
8. click on Save
9. Click yes to update to all other systems.

Creating Transport Request (SE09)

1. Login to Development System using any user id other than DDIC and SAP* user and other than 000 client.
2. Execute SE09
3. Click on Create button
4. Select customizing Request



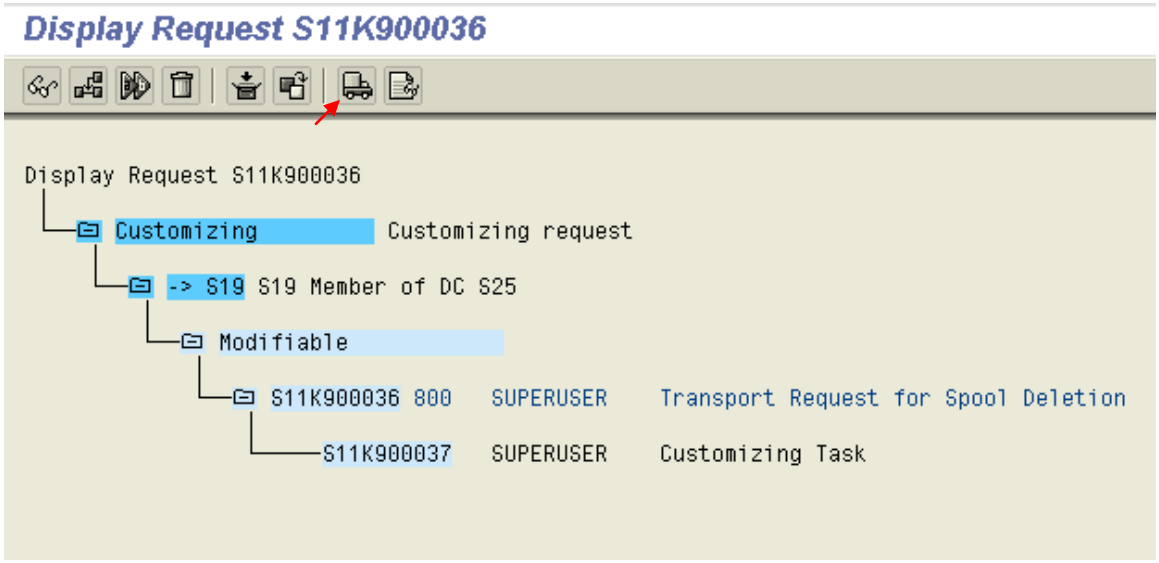
5. click on Continue button
6. Provide a description for the Transport Request
   e.g.. Tranport Request for Spool Deletion



7. click on Save.
8. You get the Request Created

Release The Request.

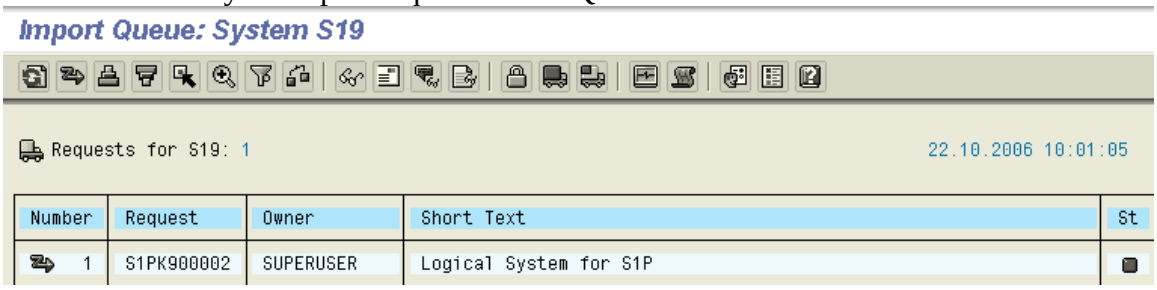
1. Select the Request from SE09 screen
2. Expand the Request
3. Select the Task number
4. Click on Release button from the top menu i.e truck sign as shown in Fig below



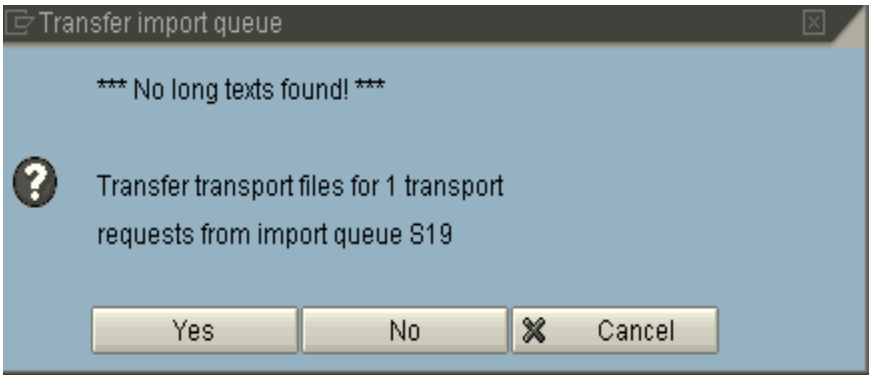
Repeat the same steps to release the Request.

TP Import

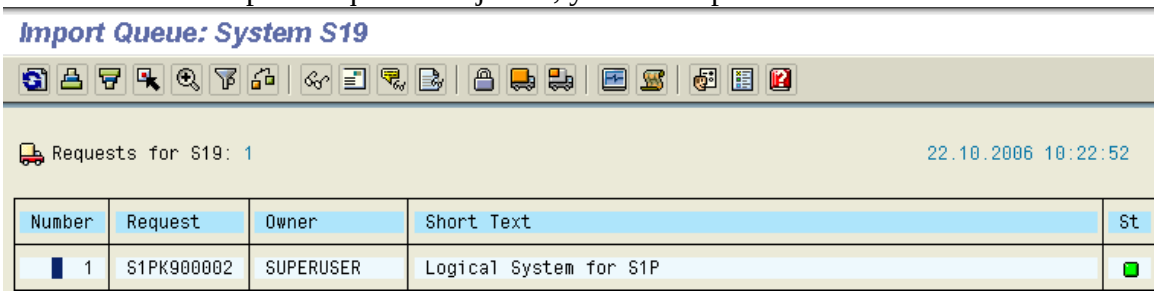
1. Login to target system at SAP level
2. Execute STMS
3. Go to overview -> Imports
4. Click on Refresh button
5. Select Your System from the List
6. Double click on the system.
7. See how many Transport requests are in Queue



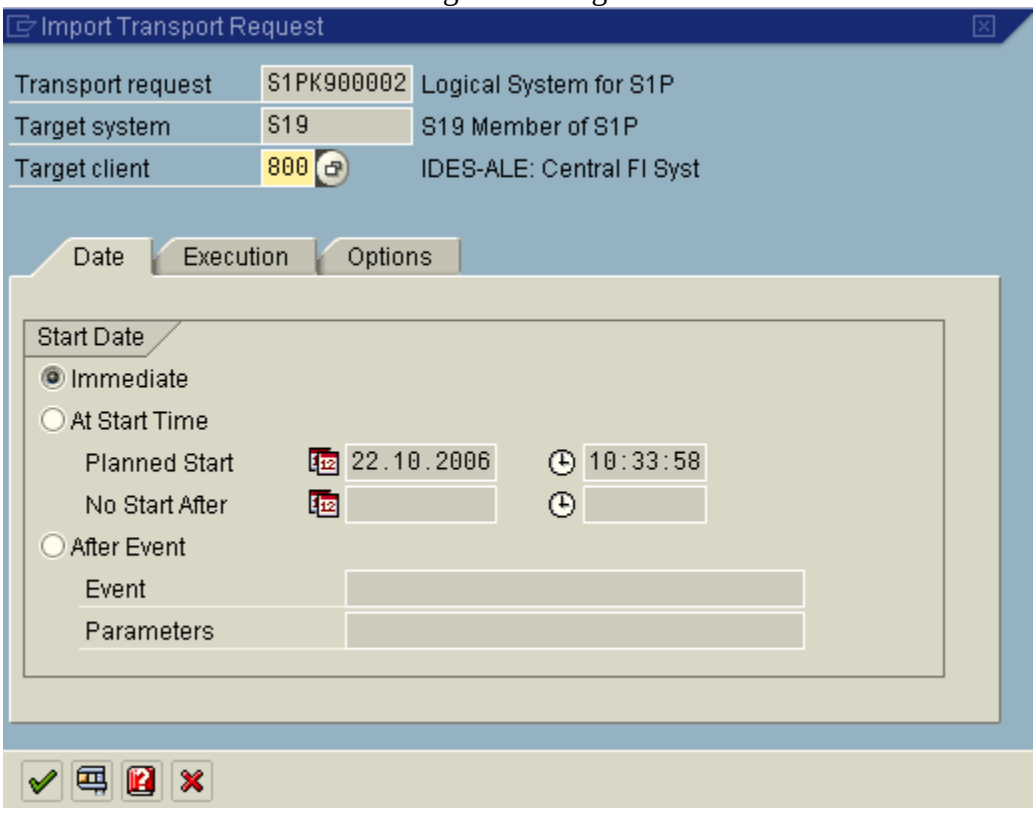
8. Select the TP number - click on Adjust Import Queue.



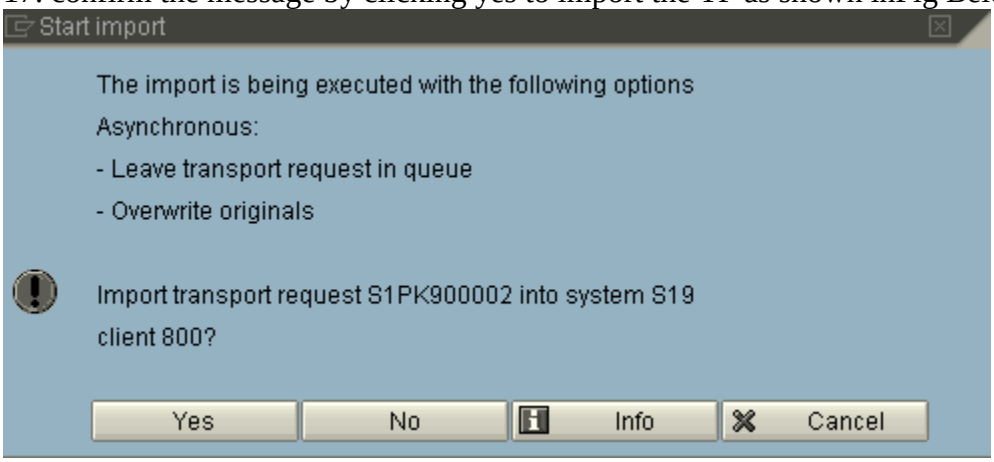
9. Click yes to transfer the datafile and Cofile to the target system
10. After the Transport Request is adjusted, you can import the TP



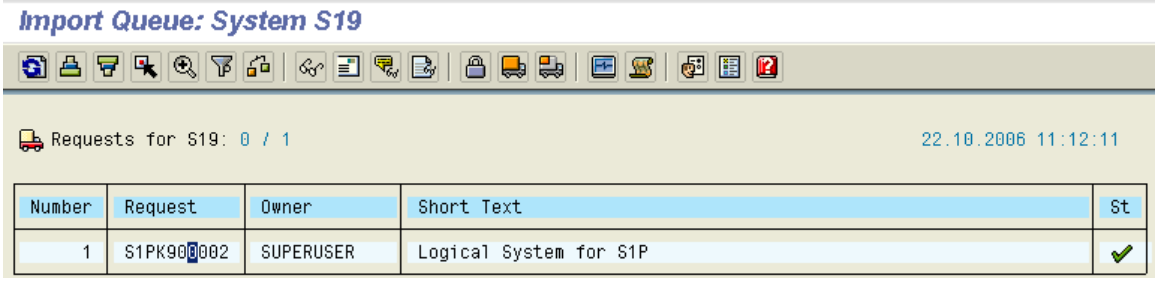
11. Select the Request -> click on Truck Sign to Import the request.
12. From next screen select the target client e.g. 800



13. Select Immediate from the Date if the TP has to be imported immediately.
14. Leave the Execution part in, as it is i.e. Asynchronous Method.
15. From options tab select **overwrite originals**
16. click on continue button.
17. confirm the message by clicking yes to import the TP as shown inFig Below.



18. TP is imported and the symbol 



Command line Import

1. Login as sidadm on target system
2. cd /usr/sap/trans/bin
3. tp addtobuffer <TP_number>
4. tp import <TP_number> <SID> client <client_number> u1

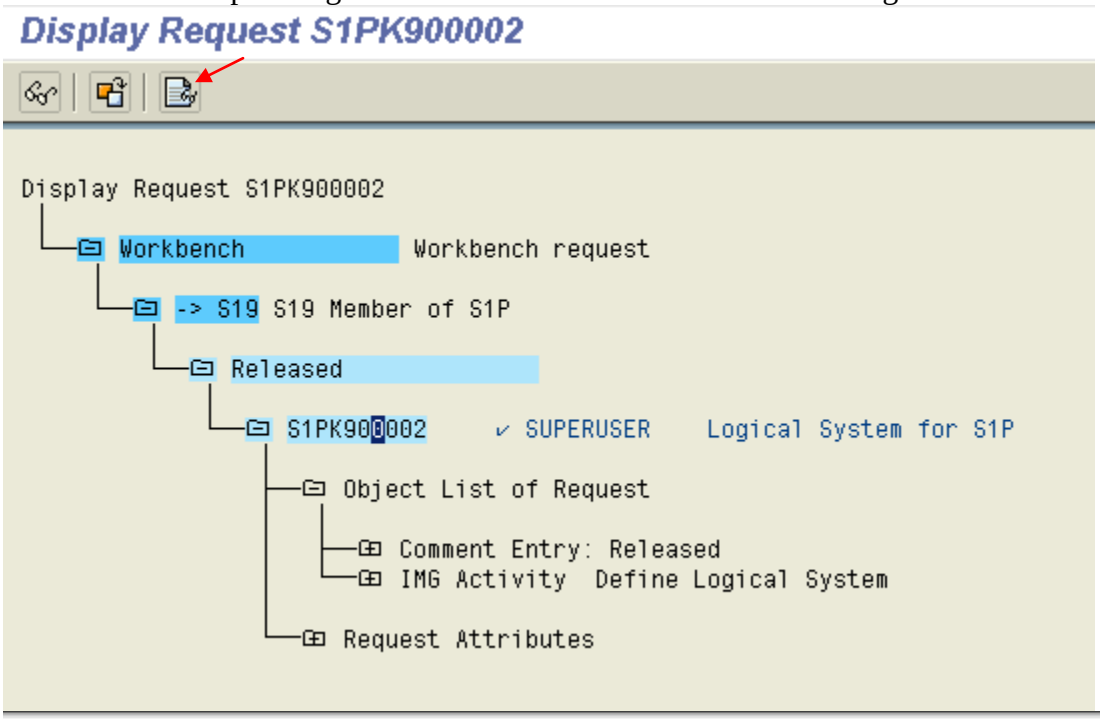
Look for error code **0 or 4**
If **RC =8** , ocntact the tp owner to check the objects in the TP and correct it
Once get the correction TP , re-import it

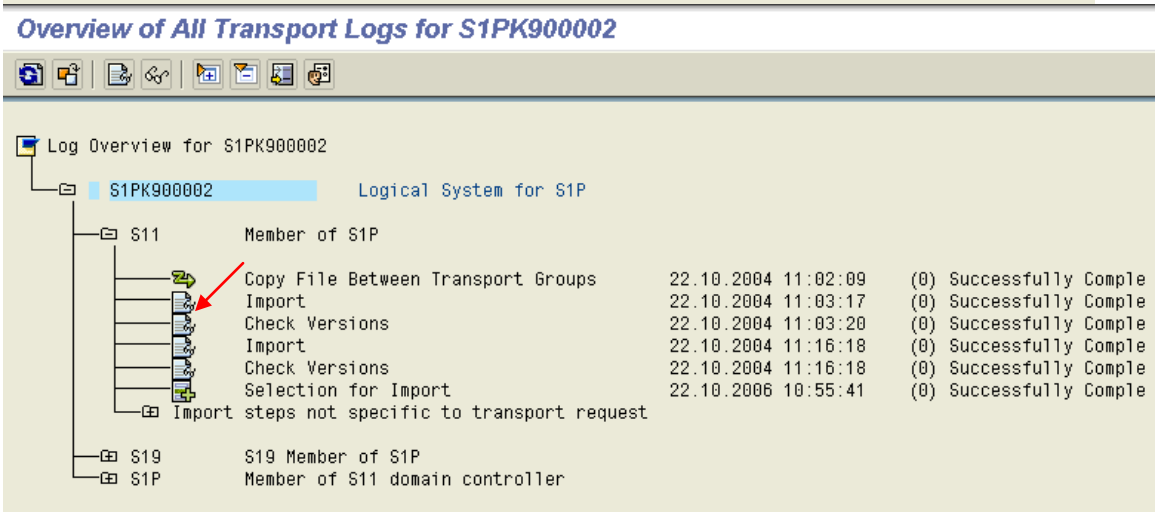
If **tp > 8** , Basis has to solve the problem
Error may be lying at datafile and cofile level
Check the permissions of the datafile and cofile

Check the ownership of the datafile and cofile
Check the date of creation of the datafile and cofile

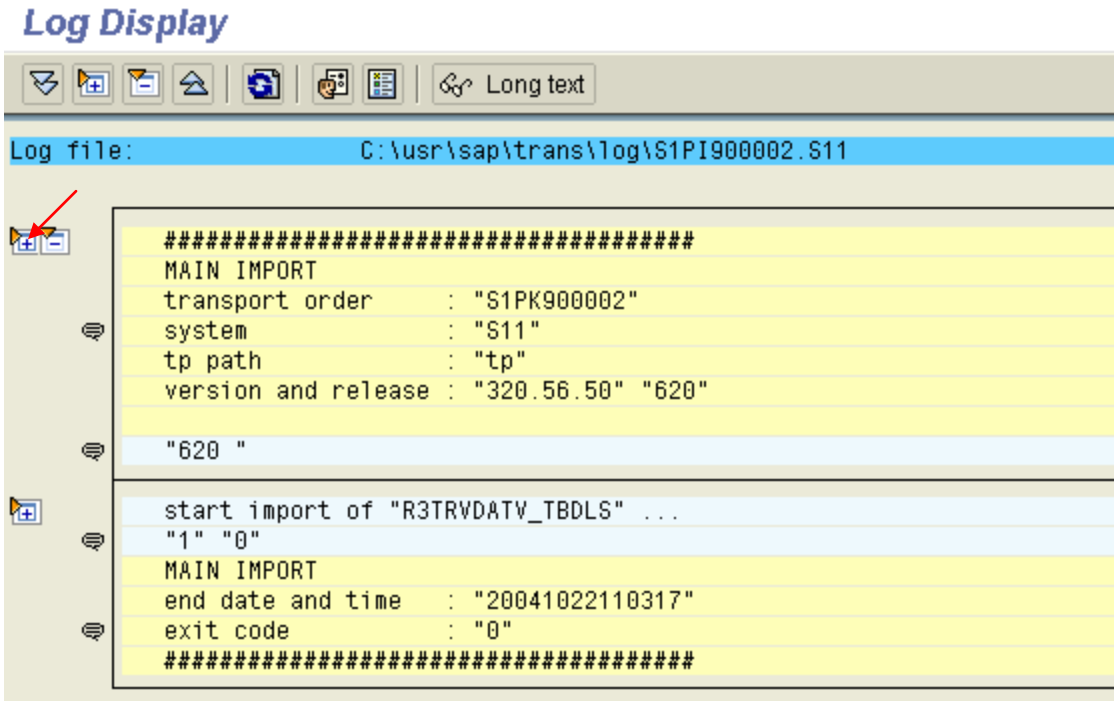
Once the problem is corrected, reimport the TP.
Transport Logs at SAP level.

1. Login to the target system at SAP level using your userid
2. Execute SE09
3. Press F5 to display the individual request.
4. Provide the desired request number in the Request field e.g. S1PK900002
5. Continue
6. Select the TP
7. Click on transport Log button as shown in Red Arrow mark in Fig below.





Select the system from the list and expand it
Click on Log button beside to Imports to display more about logs
Expand the + sign as shown below in red Mark pointer to see more logs about the TP



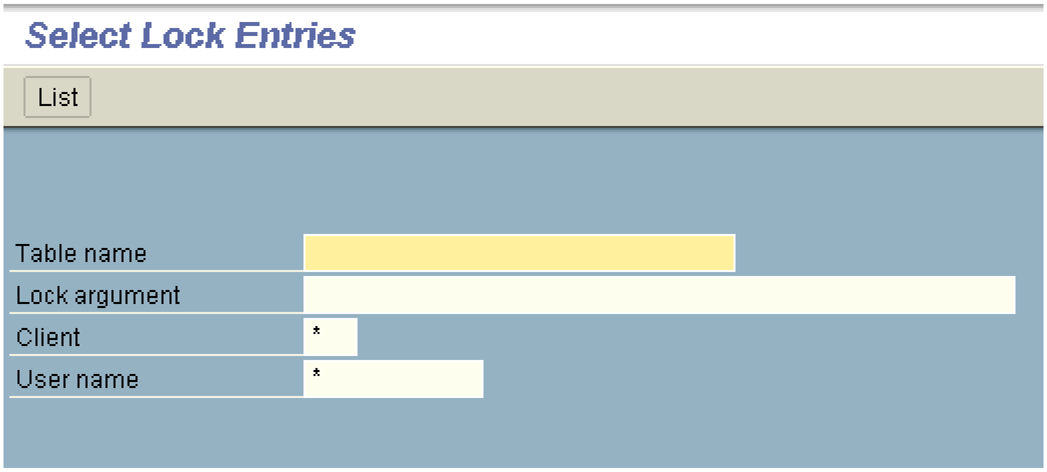
Lock Entries: SM12

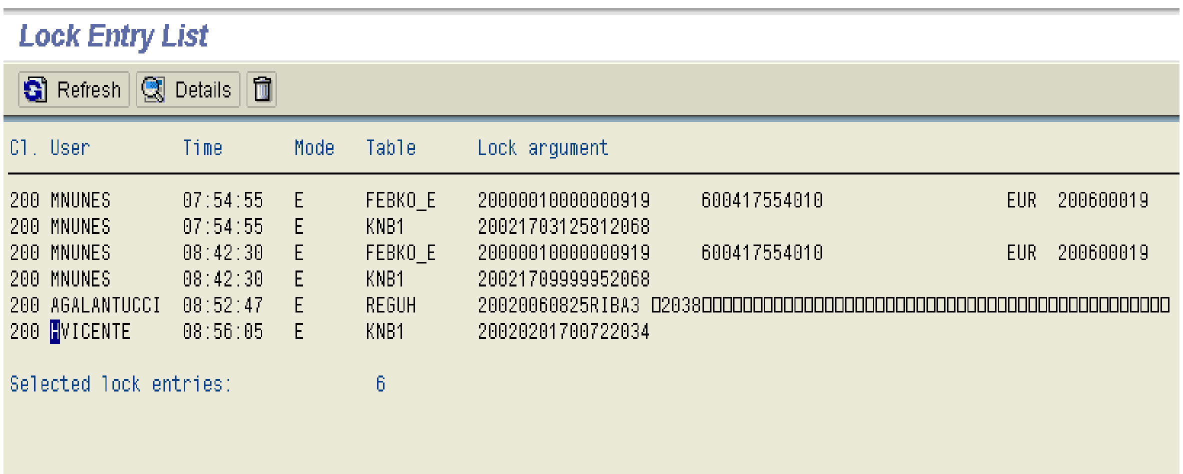
WP: Enqueue

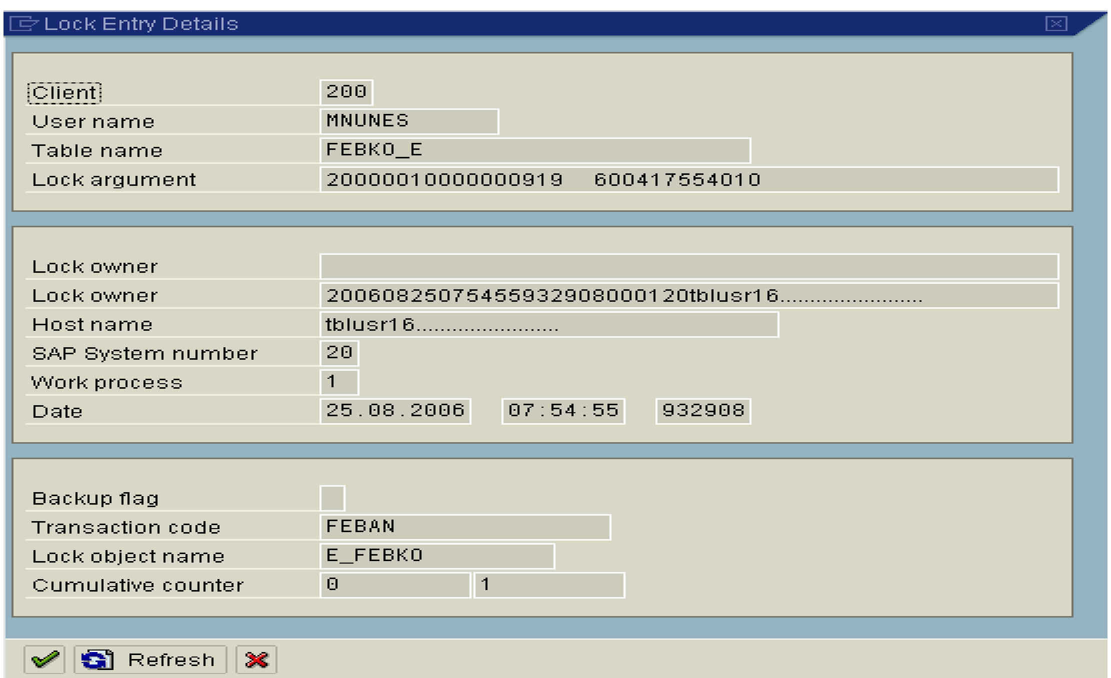
SAP lock entries for current transactions can be seen here. When ever any DDL/ DML operations start, SAP put a lock into those transactions in order to keep it safe from overwritten. Locks are released when ever user exits or user finishes his/her operation/transaction.
If for some more reason, locks cannot be released by SAP, it is displayed here with the date it was locked.

Note: The locks which are more than 24 hours old should be deleting from the system to allow other users to work efficiently.

Below fig shows how the lock entries look like in a running environment.
Select the lock entries by putting the selection criteria as below so that you get the lock entries for all at once.


Select Lock Entries
List
Table name
Lock argument
Client *
User name *


Lock Entry List
Refresh
Details
Cl. User Time Mode Table Lock argument
200 MNUNES 07:54:55 E FEBKO_E 20000010000000919 600417554010 EUR 200600019
200 MNUNES 07:54:55 E KNB1 20021703125812068
200 MNUNES 08:42:30 E FEBKO_E 20000010000000919 600417554010 EUR 200600019
200 MNUNES 08:42:30 E KNB1 20021709999952068
200 AGALANTUCCI 08:52:47 E REGUH 20020060825RIBA3 02038
200 HVICENTE 08:56:05 E KNB1 20020201700722034
Selected lock entries: 6


Lock Entry Details
Client 200
User name MNUNES
Table name FEBKO_E
Lock argument 20000010000000919 600417554010
Lock owner
Lock owner 20060825075455932908000120tblusr16.......................
Host name tblusr16.......................
SAP System number 20
Work process 1
Date 25.08.2006 07:54:55 932908
Backup flag
Transaction code FEBAN
Lock object name E_FEBKO
Cumulative counter 0 1
Refresh

Background Job management (SM36/SM37)

SAP Standard Jobs from Basis Point of View

Job name	Program	Variant	Repeat int.
SAP_REORG_JOBS	RSBTCDEL2	yes	daily
SAP_REORG_SPOOL	RSPO0041/1041	yes	daily
SAP_REORG_BATCHINPUT	RSBDCREO	yes	daily
SAP_REORG_ABAPDUMPS	RSSNAPDL	yes	daily
SAP_REORG_JOBSTATISTIC	RSBPSTDE	yes	monthly
SAP_COLLECTOR_FOR_JOBSTATISTIC	RSBPCOLL	no	daily
SAP_COLLECTOR_FOR_PERFMONITOR	RSCOLL00	no	hourly
SAP_COLLECTOR_FOR_NONE_R3_STAT COLLECTOR	RSN3_STAT_	no	hourly
SAP_REORG_PRIPARAMS	RSBTCPRIDEL	no	monthly
SAP_REORG_XMILOG	RSXMILOGREORG	yes	weekly
SAP_CCMS_MONI_BATCH_DP TOOL_DISPATCHING	RSAL_BATCH_ ..	no	hourly
RSPO1043	RSPO1043	yes	daily
RSTS0024	RSTS0024	yes	daily

For more info in this follow the below link

http://groups.google.com/group/mysapbasis/browse_thread/thread/0720c4b2f881434b

Update Management: SM13

Use Update Management (transaction SM13) to check the following:

- Is the update active? If not, was it deactivated by the system or by a user?
- Have any updates been canceled (with status Error)? (Make sure that you enter "*" in the user field.)
- Is there a long queue of pending updates older than 10 minutes?

Monitoring

The graphical Alert Monitor (transaction RZ20) automatically issues warnings about all update problems.
The Alert Monitor is always likely to be active as a standard component of your computer desktop. (The monitor should be started in a separate session since it blocks the SAP session in which it is started).

Error Analysis

If canceled updates (status Error) are output in the Update Requests screen, or if update problems are reported in the Alert Monitor, you can determine the cause of the error using Update Management and the system log.

Repeating Canceled Updates

Whenever update problems occur, you should check the Update Requests screen (transaction **SM13**) for canceled updates. Canceled updates are assigned the status Error in the list.
It is essential to repeat canceled updates, otherwise data is not written to the database and is lost.

Deactivating and Reactivating Updates

When a serious error occurs in the database, the SAP System automatically deactivates the Update System (see Automatic Update Stop in the Event of Database Problems). Serious database errors require action on the part of the database administrator. Stopping updates automatically prevents updates from being processed and then being prematurely canceled on account of the database problem. This makes it easier to clean up the Update System once the error has been eliminated.

Note: Update deactivation should only be used as a last resort. It suspends all user transactions in the SAP System until update reactivation.

Prerequisites
If you can answer any of the following questions in the affirmative, you can manually stop the update if it has not already been automatically stopped.

- Has the Alert Monitor just informed you of an update problem? Does this problem impact all updates?
- Have you noted a problem affecting the entire system, for example, a warning relating to a serious database problem reported by the Alert Monitor?

Procedure

- Start Update System Administration. To do this, choose Tools ->Administration-> Monitor-> Update. Alternatively enter transaction code **SM13**.

- Check if the update is active. One of the following messages is output at the bottom of the initial screen of the Update System:
  Update is active
  Update is deactivated
- If update is active, deactivate it. To do this, choose Administration. Then click the pushbutton Deactivate next to the line Status Update is active.
- The status message changes. You and all other SAP users are informed of deactivation by a message.
- When you have resolved the problem, reactivate the Update System. Proceed in the same way as for deactivation, and then choose Activate.
- To deactivate and activate updates, you can also directly call transaction **SM14**, and then click the appropriate pushbutton on the initial screen.

Result

- Deactivation causes all active transactions in your system to be suspended. During this time, users cannot create updates, and can only resume their work when you reactivate the Update System.
- Background jobs are also automatically suspended.
- If it is not necessary to restart the SAP System; users can resume their work without loss of data after update reactivation. Processing of suspended jobs can also resume.
- The suspension of processing is indicated in the SAPGUI status bar on each terminal.

BRTOOLS

B= Backup R=Recovery

a) BRTOOLS- To add/resize/db admin tasks
b) BRBACKUP- To perform SAP backup of data file/parameter files
c) BRARCHIVE- To perform backup of offline archive log files
d) BRRESTORE- Restore database
e) BRRECOVER- Recover Database
f) BRCONNECT- Perform daily DBA activities like check task/ indexes/ clean up
g) BRPACE- Space management

BACKUP OF SAP DATABASE

BRTOOLS

BRTOOLS is the tool provide by SAP and is widely used from SAP 4.7E onwards which replaces the utilization sapdba tool used before . BRTOOL provides some of the extra features than sapdba and makes System Adminitrators easy to use.

BRTOOLS consists of following utilities.

BRBACKUP : Used for SAP backup
BRARCHIVE : Used for Archive log backup
BRRESTORE : Used for Restoring Data
BRRECOVER : Used for Recovering Database
BRSPACE : used to manage space in your database
BRCONNECT: All DB13 tasks are performed using BRCONNECT.
BRTOOLS: performs all the above BR* functions at command level.

Backup Strategy

1. What is the database size in my SAP systems (DEV, QAS, and PRD)
   Check the space using DB02.

2**. Media**?
   Generally there are two medias frequently used in the real time.
   a. TAPE drive
   b. Hard disk drive (HDD)
   Based on your comfortability and talking to your System admin you have to decide which one is better to use.

3. **Level of backup**
   In real time we use two levels of backups generally
   a. DISK-to -DISK
   b. DISK-to-TAPE
   First level backup will be performed to local disk of server as it is faster and server will not be busy for long time
   2nd level is backup is performed as per the available time and before the next backup starts.

4. **Time of Backup**
   Find out when is the server idle time or when server is less load. This time is more critical when your server is used by diff users from diff geographical region.
   So you have to find the time when there are very less users load to server so that server doesn't go into hand position.

5. **Frequency** : Hourly/Daily / Weekly/Monthly / Quarterly
   Recommended: DEV , QAS, PRD daily full online backup
   Recommended Weekly on DEV and QAS , Monthly/Quarterly on Prodction (PRD

6. **Type of backup**
   a. Online (Recommended: DEV , QAS, PRD daily full online backup)
   b. Offline (Recommended Weekly on DEV and QAS , Monthly/Quarterly on Prodction (PRD))

7. **Backup mode** (All, Full, Tablespace, Incremental etc.)
   All : This is higly recommended

8. **Scheduler**

Scheduler is the software or utility provided by most of Operating systems. In order to perform backup automaticlly without running daily manually the command ,we take the help of scheduler to perform the backup either daily /weekly/Monthly

Unix: There is scheduler available in Unix called " **Crontab**" . In order to put backup into scheduler you have to write a script which will have your backup command.

This script generally an excuatable file called **.sh** file

and call this .sh file using crontab.

Take the help of your Unix admin guy to setup this because to configure crontab u need user "root" access.

NT: There is a scheduler available in Windows called "Scheduled Task"

Similarly you put your command into an excutable file like .bat file or .exe file

And call this executable file from Schdule Task

Backup Parameter files

1. **init<SID>.sap** (ex. initS10.sap where S10 is the SID)
2. init<SID>.dba

Location of the parameter file

Unix: $ORACLE_HOME/dbs
NT : %ORACLE_HOME/database

How to check ORACLE_HOME

Unix: type **env** (At command prompt and look for the value of ORACLE_HOME)
NT: type **set** (at command prompt and look for the value of ORACLE_HOME)

Unix: ORACLE_HOME = /oracle/<SID>/920_64/

Users responsible or authenticated to perform backup

1. <SID>adm (windows)
2. ORA<SID> (Unix)

Command used for backup of data

Unix:

brbackup –u / -c –q check –m all –t online –p $ORACLE_HOME/dbs/init<SID>.sap
brbackup –u / -c –m all –t online –p $ORACLE_HOME/dbs/init<SID>.sap

Here **– u /** indicates theat user is authenticated at OS level

Windows

brbackup -c –q check –p %ORACLE_HOME%\database\init<SID>.sap
brbackup -u / -c –q check –p %ORACLE_HOME%\database\init<SID>.sap (in 640)
brbackup -c –p %ORACLE_HOME%\database\init<SID>.sap
brbackup -u / -c –p %ORACLE_HOME%\database\init<SID>.sap (in 640)

-c : indicates no operator confirmation required during backup
-t : type of backup e.g online or offline or some other type
-m : Backup mode All or Full or some other

-m and -t will not be required if you are using this option already in your backup parameter file.
for more brbackup option follow the below link.

http://help.sap.com/saphelp_erp2005/helpdata/en/79/5e0540a054e469e10000000a155106/frameset.htm

Backup Contents:

When we perform a backup using "BRBACKUP" command that means we are performing a databackup of SAP server.
The BRBACKUP backs up the following files during the backup

a. Datafiles (All datafiles of Tablespaces execpt the tablespaces Temporary , ROLLBACK/SAPUNDO)
b. Parameter files (init<SID>.sap, init<SID>.dba, init<SID>.ora , back<SID>.log , <file_name>. and or .afd files
c. Control files

Backup Log:

After running backup , you want to check the backup log whether it was successfully completed or not

a. use tcode **DB12** at SAP level to check the backup log status
b. at OS level open the file from **/oracle/<SID>/sapbackup**/<filename>.and and read the whole file or at the end of the file to see the backup log status

There are two files updated at Os level in /oracle/<SID>/sapbackup directory
a. back<SID>.log which shows the only status of backup
b. *.and or *.afd file which gets created for each backup and contains the whole details about the backup
DB12 reads *.and or *.afd files from Os level when we check at SAP level.

Backup Return Codes

0000: Backup Completed successfully
0001: Backup Completed successfully with Warnings
0003: Backup terminated due to errors (check the log detail to find out detail of error)
0005: Bakcup terminated due to errors (check the log file detail to find out the detail of error)
9999: Backup is currently running or in progress

BRARCHIVE

As we see in brabackup , the whole datafiles , control files and parameter files are backed up to tape/disk
Similarly BRARCHIVE is used to perform the backup for offline archived logs which are generated during database operation and gets stored in **/oracle/<SID>oraarch**
During busy hours or high load on database , oracle creates lot of archive logs and stores in ORAARCH .
If lot of archives gets generated during some time when we are not alert , then /oracle/<SID>/oraarch folder gets filled and causes database to hang position
In order to avoid this hung situation, SAP recommeds to move these offile archived log files from /oracle/<SID>/oraarch folder to another location either locally or remotely to save these offline redologfiles to backup into tape later when general backup runs for system.

Arhive backup should run **every hour** and has to put into a scheduler to run every hour
Use the following command to perform archive log backup using **-sd** option

brarchive –u / -c –q check -p $ORACLE_HOME/dbs/init<SID>.sap –sd

brarchive –u / -c –p $ORACLE_HOME/dbs/init<SID>.sap –sd

-sd : save and delete
When SAP moved the file from /oracle/<SID>/oraarch location to another location in disk using BRARCHIVE command, Brarchive makes sures that the file is saved in destination successfully and the performs the delete option.

What to do if Backup terminated in the middle or terminated manually?

If backup terminates due to some problem, the tablespaces which was in backup mode, doesn't come back to end backup mode.
So when you rerun the backup or backup job is re-submitted it throws error stating that tablespaces are already in backup mode.

So to bring the tablespace from begin backup mode to end backup mode follow the following steps.

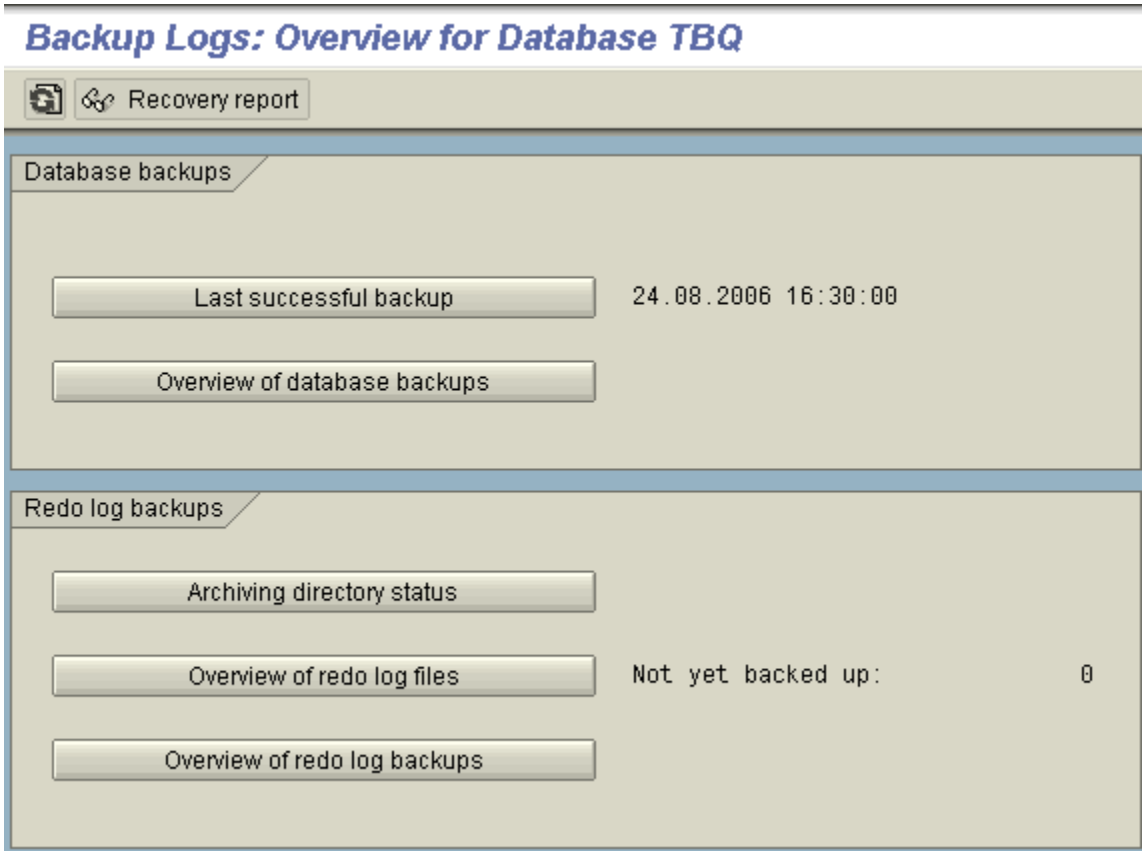
Before:
SQL> select* from v$backup where status= ‘ACTIVE’;
The above statement checks how many tablespaces are in backup mode and listed them out with STATUS = ACTIVE.

SQL> alter tablespace <tablespace_name> end backup;

After:
SQL> select* from v$backup where status=’ACTIVE’;

If nothing comes up, then all tablespaces are normal. If any tablespace name come up then issue the above command to bring that tablespace into end backup mode.

Backup Log: DB12



Overview of database backups

Backup Logs: Database Backups for Database TBP

Logs of the database backups

System ID: TBP Database: ORACLE

Database host: tblusr16 Day, time 25.08.2006 09:29:08

Backup function	Start of backup	End of backup	RC	Log
all, online, disk	24.08.2006 16:30:01	24.08.2006 18:31:12	0000	bdtireyb.and
all, online, disk	23.08.2006 16:30:00	23.08.2006 18:33:53	0000	bdtimhcy.and
all, online, disk	22.08.2006 16:30:01	22.08.2006 18:30:42	0000	bdtihjhx.and
all, online, disk	21.08.2006 16:30:00	21.08.2006 18:36:15	0000	bdticlmu.and
all, online, disk	20.08.2006 16:30:00	20.08.2006 18:31:00	0000	bdthxnrs.and
all, online, disk	19.08.2006 16:30:00	19.08.2006 18:36:16	0000	bdthspwq.and
all, online, disk	18.08.2006 16:30:00	18.08.2006 18:29:14	0000	bdthnsbo.and
all, online, disk	17.08.2006 16:30:00	17.08.2006 18:29:58	0000	bdthiugm.and
all, online, disk	16.08.2006 16:30:01	16.08.2006 18:33:05	0000	bdthdwll.and
all, online, disk	15.08.2006 16:30:01	15.08.2006 18:30:16	0000	bdtgyyqj.and
all, online, disk	14.08.2006 16:30:00	14.08.2006 18:32:33	0000	bdtguavg.and
all, online, disk	13.08.2006 16:30:00	13.08.2006 18:29:56	0000	bdtgpdae.and
all, online, disk	12.08.2006 16:30:00	12.08.2006 18:32:45	0000	bdtgkffc.and
all, online, disk	11.08.2006 20:47:39	11.08.2006 22:51:43	0000	bdtggegp.and
all, online, disk	10.08.2006 21:15:15	10.08.2006 23:14:57	0000	bdtgbixf.and
all, online, disk	10.08.2006 21:10:01	10.08.2006 21:10:05	0003	bdtgbild.and
all, online, disk	10.08.2006 16:30:00	11.08.2006 00:07:50	9999	bdtgajoy.and
all, online, disk	09.08.2006 16:30:01	09.08.2006 18:32:15	0000	bdtfvltx.and
all, online, disk	08.08.2006 16:01:01	08.08.2006 17:59:44	0000	bdtfqljx.and
all, online, disk	08.08.2006 16:00:00	08.08.2006 16:00:01	0003	bdtfqlho.and
all, online, disk	07.08.2006 16:00:00	07.08.2006 17:58:38	0000	bdtflnmm.and
all, online, disk	06.08.2006 16:01:00	06.08.2006 17:59:52	0000	bdtfgpts.and
all, online, disk	06.08.2006 16:00:00	06.08.2006 16:00:00	0003	bdtfgprk.and
all, online, disk	05.08.2006 16:00:01	05.08.2006 17:57:03	0001	bdtfbrwj.and
all, online, disk	04.08.2006 16:00:00	04.08.2006 17:57:19	0000	bdtewubg.and
all, online, disk	03.08.2006 16:00:01	03.08.2006 17:59:27	0000	bdterwgf.and
all, online, disk	02.08.2006 16:00:00	02.08.2006 18:01:54	0000	bdtemylc.and

```
[/oracle/TBP/sapbackup]> ls -lRt|more
total 71080
-rwxrwxrwx   1 oratbp   dba          57392 Aug 24 18:31 backTBP.log
-rw-r--r--   1 oratbp   dba          28895 Aug 24 18:31 bdtireyb.and
-rw-r--r--   1 oratbp   dba          28895 Aug 23 18:33 bdtimhcy.and
-rw-r--r--   1 oratbp   dba          28895 Aug 22 18:30 bdtihjhx.and
-rw-r--r--   1 oratbp   dba          28894 Aug 21 18:36 bdticlmu.and
-rw-r--r--   1 oratbp   dba          28894 Aug 20 18:31 bdthxnrs.and
-rw-r--r--   1 oratbp   dba          28894 Aug 19 18:36 bdthspwq.and
-rw-r--r--   1 oratbp   dba          28894 Aug 18 18:29 bdthnsbo.and
-rw-r--r--   1 oratbp   dba          28894 Aug 17 18:29 bdthiugm.and
-rw-r--r--   1 oratbp   dba          28894 Aug 16 18:33 bdthdwll.and
-rw-r--r--   1 oratbp   dba          28894 Aug 15 18:30 bdtgyyqj.and
-rw-r--r--   1 oratbp   dba          28894 Aug 14 18:32 bdtguavg.and
-rw-r--r--   1 oratbp   dba          28894 Aug 13 18:29 bdtgpdae.and
-rw-r--r--   1 oratbp   dba          28893 Aug 12 18:32 bdtgkffc.and
-rw-r--r--   1 oratbp   dba          28888 Aug 11 22:51 bdtggegp.and
-rw-r--r--   1 oratbp   dba          28889 Aug 10 23:14 bdtgbixf.and
-rw-r--r--   1 oratbp   dba           2149 Aug 10 21:10 bdtgbild.and
```

Tail back<SID>.log

```
[/oracle/TBP/sapbackup]> tail backTBP.log
bdtgyyqj and  2006-08-15 16.30.01  2006-08-15 18.30.16  0         4.3731:1     34     33     0
077         323266640     10080         323291521  ALL          online          disk
 6.40 (11)
bdthdwll and  2006-08-16 16.30.01  2006-08-16 18.33.05  0         4.3609:1     34     33     0
105         324297582     10111         324333296  ALL          online          disk
 6.40 (11)
bdthiugm and  2006-08-17 16.30.00  2006-08-17 18.29.58  0         4.3506:1     34     33     0
135         325219009     10137         325240597  ALL          online          disk
 6.40 (11)
bdthnsbo and  2006-08-18 16.30.00  2006-08-18 18.29.14  0         4.3499:1     34     33     0
156         326208559     10157         326396746  ALL          online          disk
 6.40 (11)
bdthspwq and  2006-08-19 16.30.00  2006-08-19 18.36.16  0         4.3444:1     34     33     0
181         326857403     10185         327061859  ALL          online          disk
 6.40 (11)
bdthxnrs and  2006-08-20 16.30.00  2006-08-20 18.31.00  0         4.3366:1     34     33     0
195         328094156     10196         328804919  ALL          online          disk
 6.40 (11)
bdticlmu and  2006-08-21 16.30.00  2006-08-21 18.36.15  0         4.3300:1     34     33     0
217         329426754     10223         329477469  ALL          online          disk
 6.40 (11)
bdtihjhx and  2006-08-22 16.30.01  2006-08-22 18.30.42  0         4.3238:1     34     33     0
240         330340874     10242         330357424  ALL          online          disk
 6.40 (11)
bdtimhcy and  2006-08-23 16.30.00  2006-08-23 18.33.53  0         4.3130:1     34     33     0
270         331125174     10276         331157295  ALL          online          disk
 6.40 (11)
bdtireyb and  2006-08-24 16.30.01  2006-08-24 18.31.12  0         4.3129:1     34     33     0
306         331800686     10309         331830999  ALL          online          disk
 6.40 (11)
[/oracle/TBP/sapbackup]>
```

Overview of Redolog History :

Backup Logs: Redo Log History for Database TBP

Redo log history
System ID: TBP Database: ORACLE
Database host: tblusr16 Day, time 25.08.2006 09:40:32

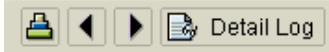
RedoNo.	Time created	Tape name	Pos.	Backup time	Backint ID	Offline redo log file name
10337	25.08.2006 09:11:19			Active redo log		
10336	25.08.2006 08:16:59					
10335	25.08.2006 06:22:06	#DISK	0001	25.08.2006 09:00:06		/hotbackup/TBP/archbackup/TBParch1_10335.dbf.Z
10334	25.08.2006 04:15:44	#DISK	0001	25.08.2006 07:00:05		/hotbackup/TBP/archbackup/TBParch1_10334.dbf.Z
10333	25.08.2006 03:38:47	#DISK	0001	25.08.2006 05:00:08		/hotbackup/TBP/archbackup/TBParch1_10333.dbf.Z
10332	25.08.2006 02:00:14	#DISK	0001	25.08.2006 04:00:07		/hotbackup/TBP/archbackup/TBParch1_10332.dbf.Z
10331	25.08.2006 00:30:23	#DISK	0019	25.08.2006 03:01:27		/hotbackup/TBP/archbackup/TBParch1_10331.dbf.Z
10330	25.08.2006 00:19:10	#DISK	0018	25.08.2006 03:01:23		/hotbackup/TBP/archbackup/TBParch1_10330.dbf.Z
10329	25.08.2006 00:05:13	#DISK	0017	25.08.2006 03:01:18		/hotbackup/TBP/archbackup/TBParch1_10329.dbf.Z
10328	24.08.2006 23:57:51	#DISK	0016	25.08.2006 03:01:15		/hotbackup/TBP/archbackup/TBParch1_10328.dbf.Z
10327	24.08.2006 23:56:05	#DISK	0015	25.08.2006 03:01:10		/hotbackup/TBP/archbackup/TBParch1_10327.dbf.Z
10326	24.08.2006 23:54:22	#DISK	0014	25.08.2006 03:01:05		/hotbackup/TBP/archbackup/TBParch1_10326.dbf.Z
10325	24.08.2006 23:52:34	#DISK	0013	25.08.2006 03:01:00		/hotbackup/TBP/archbackup/TBParch1_10325.dbf.Z
10324	24.08.2006 23:50:46	#DISK	0012	25.08.2006 03:00:55		/hotbackup/TBP/archbackup/TBParch1_10324.dbf.Z
10323	24.08.2006 23:48:57	#DISK	0011	25.08.2006 03:00:50		/hotbackup/TBP/archbackup/TBParch1_10323.dbf.Z
10322	24.08.2006 23:47:09	#DISK	0010	25.08.2006 03:00:45		/hotbackup/TBP/archbackup/TBParch1_10322.dbf.Z
10321	24.08.2006 23:45:14	#DISK	0009	25.08.2006 03:00:40		/hotbackup/TBP/archbackup/TBParch1_10321.dbf.Z
10320	24.08.2006 23:43:25	#DISK	0008	25.08.2006 03:00:35		/hotbackup/TBP/archbackup/TBParch1_10320.dbf.Z
10319	24.08.2006 23:42:09	#DISK	0007	25.08.2006 03:00:30		/hotbackup/TBP/archbackup/TBParch1_10319.dbf.Z
10318	24.08.2006 23:41:30	#DISK	0006	25.08.2006 03:00:26		/hotbackup/TBP/archbackup/TBParch1_10318.dbf.Z
10317	24.08.2006 22:53:40	#DISK	0005	25.08.2006 03:00:23		/hotbackup/TBP/archbackup/TBParch1_10317.dbf.Z
10316	24.08.2006 21:16:49	#DISK	0004	25.08.2006 03:00:19		/hotbackup/TBP/archbackup/TBParch1_10316.dbf.Z
10315	24.08.2006 21:13:51	#DISK	0003	25.08.2006 03:00:14		/hotbackup/TBP/archbackup/TBParch1_10315.dbf.Z
10314	24.08.2006 21:12:24	#DISK	0002	25.08.2006 03:00:10		/hotbackup/TBP/archbackup/TBParch1_10314.dbf.Z
10313	24.08.2006 20:40:23	#DISK	0001	25.08.2006 03:00:05		/hotbackup/TBP/archbackup/TBParch1_10313.dbf.Z
10312	24.08.2006 20:24:29	#DISK	0002	24.08.2006 21:00:10		/hotbackup/TBP/archbackup/TBParch1_10312.dbf.Z
10311	24.08.2006 19:11:35	#DISK	0001	24.08.2006 21:00:06		/hotbackup/TBP/archbackup/TBParch1_10311.dbf.Z
10310	24.08.2006 19:08:36	#DISK	0002	24.08.2006 20:00:12		/hotbackup/TBP/archbackup/TBParch1_10310.dbf.Z
10309	24.08.2006 18:31:12	#DISK	0001	24.08.2006 20:00:07		/hotbackup/TBP/archbackup/TBParch1_10309.dbf.Z
10308	24.08.2006 17:41:22	#DISK	0001	24.08.2006 19:00:05		/hotbackup/TBP/archbackup/TBParch1_10308.dbf.Z
10307	24.08.2006 17:38:34	#DISK	0002	24.08.2006 18:00:14		/hotbackup/TBP/archbackup/TBParch1_10307.dbf.Z
10306	24.08.2006 12:59:31	#DISK	0001	24.08.2006 18:00:08		/hotbackup/TBP/archbackup/TBParch1_10306.dbf.Z
10305	24.08.2006 11:48:56	#DISK	0001	24.08.2006 13:00:05		/hotbackup/TBP/archbackup/TBParch1_10305.dbf.Z
10304	24.08.2006 11:48:10	#DISK	0013	24.08.2006 12:01:04		/hotbackup/TBP/archbackup/TBParch1_10304.dbf.Z
10303	24.08.2006 11:47:09	#DISK	0012	24.08.2006 12:01:00		/hotbackup/TBP/archbackup/TBParch1_10303.dbf.Z
10302	24.08.2006 11:43:55	#DISK	0011	24.08.2006 12:00:56		/hotbackup/TBP/archbackup/TBParch1_10302.dbf.Z

Backup Logs: Redo Log Backups for Database TBP

Logs of the redo log backups
System ID: TBP Database: ORACLE
Database host: tblusr16 Day, time 25.08.2006 09:44:18

Backup function	Start of backup	End of backup	RC	Log
save, delete	25.08.2006 09:00:00	25.08.2006 09:00:06	0000	adtiuouq.svd
save, delete	25.08.2006 08:00:00	25.08.2006 08:00:01	0001	adtiujme.svd
save, delete	25.08.2006 07:00:00	25.08.2006 07:00:06	0000	adtiueds.svd
save, delete	25.08.2006 06:00:00	25.08.2006 06:00:01	0001	adtityvg.svd
save, delete	25.08.2006 05:00:01	25.08.2006 05:00:08	0000	adtittmv.svd
save, delete	25.08.2006 04:00:00	25.08.2006 04:00:07	0000	adtitoei.svd
save, delete	25.08.2006 03:00:00	25.08.2006 03:01:27	0000	adtitivw.svd
save, delete	24.08.2006 21:00:00	24.08.2006 21:00:10	0000	adtiscxc.svd
save, delete	24.08.2006 20:00:01	24.08.2006 20:00:12	0000	adtirxor.svd
save, delete	24.08.2006 19:00:01	24.08.2006 19:00:05	0000	adtirsgf.svd
save, delete	24.08.2006 18:00:01	24.08.2006 18:00:15	0000	adtirmxt.svd
save, delete	24.08.2006 17:00:01	24.08.2006 17:00:02	0001	adtirhph.svd
save, delete	24.08.2006 16:00:00	24.08.2006 16:00:01	0001	adtircgu.svd
save, delete	24.08.2006 15:00:00	24.08.2006 15:00:01	0001	adtiqwyi.svd
save, delete	24.08.2006 14:00:01	24.08.2006 14:00:02	0001	adtiqrpx.svd
save, delete	24.08.2006 13:00:00	24.08.2006 13:00:05	0000	adtiqmhk.svd
save, delete	24.08.2006 12:00:00	24.08.2006 12:01:04	0000	adtiqgyy.svd
save, delete	24.08.2006 11:00:00	24.08.2006 11:00:07	0000	adtiqbqm.svd

BRARCHIVE Action Log for Database TBP



Redo log backup log from 25.08.2006 09:00:00 adtiuouq.svd
Return code: 0000 Success Database host: tblusr16

Function	RedoNo.	Archiving time	Tape name	Pos.	Backup time	Compr.
save	10335	25.08.2006 08:17:00	#DISK	1	25.08.2006 09:00:06	1.85
delete	10335	25.08.2006 08:17:00			25.08.2006 09:00:06	

BRARCHIVE Detail Log for Database TBP

```
Detail log:                    adtiuouq.svd

BR0002I BRARCHIVE 6.40 (11)
BR0006I Start of offline redo log processing: adtiuouq.svd 2006-08-25 09.00.00
BR0477I Oracle pfile /oracle/TBP/920_64/dbs/initTBP.ora created from spfile /oracle/TBP/920_64/dbs/spfileTBP.ora
BR0101I Parameters
Name                           Value
oracle_sid                     TBP
oracle_home                    /oracle/TBP/920_64
oracle_profile                 /oracle/TBP/920_64/dbs/initTBP.ora
sapdata_home                   /oracle/TBP
sap_profile                    /oracle/TBP/920_64/dbs/initTBP.DBarchive.sap
backup_dev_type                disk
archive_copy_dir               /hotbackup/TBP/archbackup
compress                       yes
compress_cmd                   compress -c $ > $
system_info                    oratbp/oratbp tblusr16 AIX 2 5 0053A68A4C00
oracle_info                    TBP 9.2.0.6.0 8192 10336 332579488
sap_info                       620 SAPTBL TBP W0233753503 R3_ORA 0020189824
make_info                      rs6000_64 OCI_920 Jul  5 2004
command_line                   brarchive -u / -c -p /oracle/TBP/920_64/dbs/initTBP.DBarchive.sap -sd
BR0280I BRARCHIVE time stamp: 2006-08-25 09.00.01
BR0008I Offline redo log processing for database instance: TBP
BR0009I BRARCHIVE action ID: adtiuouq
BR0010I BRARCHIVE function ID: svd
BR0048I Archive function: save_delete
BR0011I 1 offline redo log file found for processing, size 50.000 MB
BR0111I Files will be compressed
BR0130I Backup device type: disk
BR0106I Files will be saved on disk in directory: /hotbackup/TBP/archbackup
BR0126I Unattended mode active - no operator confirmation required
BR0202I Saving init_ora
BR0203I to /hotbackup/TBP/archbackup/TBP ...
BR0202I Saving /oracle/TBP/920_64/dbs/initTBP.DBarchive.sap
BR0203I to /hotbackup/TBP/archbackup/TBP ...
BR0280I BRARCHIVE time stamp: 2006-08-25 09.00.01
BR0198I Profiles saved successfully
BR0201I Compressing /oracle/TBP/oraarch/TBParch1_10335.dbf
BR0203I to /hotbackup/TBP/archbackup/TBParch1_10335.dbf.Z ...
#ARCHIVE.. /oracle/TBP/oraarch/TBParch1_10335.dbf
#SAVED.... /hotbackup/TBP/archbackup/TBParch1_10335.dbf.Z  #1/1  1.8529:1  28295279
BR0280I BRARCHIVE time stamp: 2006-08-25 09.00.06
BR0015I Offline redo log file /oracle/TBP/oraarch/TBParch1_10335.dbf deleted
BR0280I BRARCHIVE time stamp: 2006-08-25 09.00.06
BR0014I 1 of 1 offline redo log file processed - 50.000 MB of 50.000 MB done
BR0204I Percentage done: 100.00%, estimated end time: 9:00
BR0001I **************************************************
BR0016I 1 offline redo log file processed, size 50.000 MB
BR0202I Saving space_log
BR0203I to /hotbackup/TBP/archbackup/TBP ...
BR0202I Saving /oracle/TBP/saparch/adtiuouq.svd
BR0203I to /hotbackup/TBP/archbackup/TBP ...
BR0202I Saving /oracle/TBP/saparch/archTBP.log
BR0203I to /hotbackup/TBP/archbackup/TBP ...
BR0115I Compression rate for all files 1.8529:1
BR0007I End of offline redo log processing: adtiuouq.svd 2006-08-25 09.00.06
BR0280I BRARCHIVE time stamp: 2006-08-25 09.00.06
BR0003I BRARCHIVE completed successfully
```

Detail log for RC-0001

BRARCHIVE Action Log for Database TBP

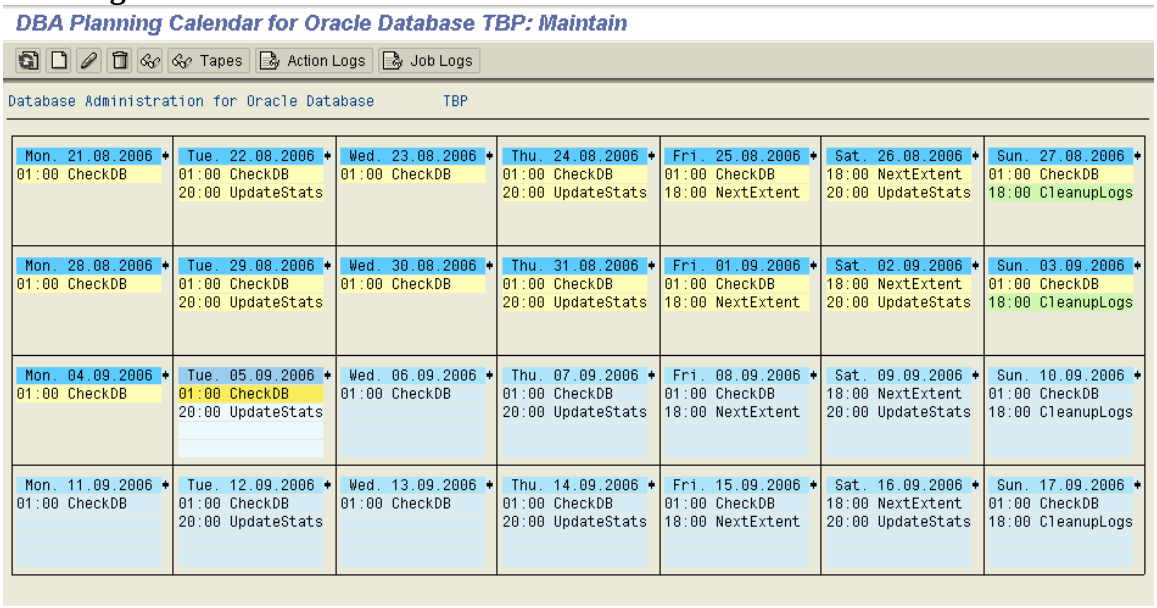
Detail Log

```
Redo log backup log from                          25.08.2006 08:00:00  adtiujme.svd
Return code:     0001 Success with warnings       Database host:              tblusr16

No action log for this action found in the database
Check the detail log

Detail log:                   adtiujme.svd

BR0002I BRARCHIVE 6.40 (11)
BR0006I Start of offline redo log processing: adtiujme.svd 2006-08-25 08.00.00
BR0477I Oracle pfile /oracle/TBP/920_64/dbs/initTBP.ora created from spfile /oracle/TBP/920_64/dbs/spfileTBP.ora
BR0101I Parameters
Name                          Value
oracle_sid                    TBP
oracle_home                   /oracle/TBP/920_64
oracle_profile                /oracle/TBP/920_64/dbs/initTBP.ora
sapdata_home                  /oracle/TBP
sap_profile                   /oracle/TBP/920_64/dbs/initTBP.DBarchive.sap
backup_dev_type               disk
archive_copy_dir              /hotbackup/TBP/archbackup
compress                      yes
compress_cmd                  compress -c $ > $
system_info                   oratbp/oratbp tblusr16 AIX 2 5 0053A68A4C00
oracle_info                   TBP 9.2.0.6.0 8192 10335 332566807
sap_info                      620 SAPTBL TBP W0233753503 R3_ORA 0020189824
make_info                     rs6000_64 OCI_920 Jul  5 2004
command_line                  brarchive -u / -c -p /oracle/TBP/920_64/dbs/initTBP.DBarchive.sap -sd
BR0013W No offline redo log files found for processing
BR0007I End of offline redo log processing: adtiujme.svd 2006-08-25 08.00.01
BR0280I BRARCHIVE time stamp: 2006-08-25 08.00.01
BR0004I BRARCHIVE completed successfully with warnings
```

Os level

```
[/oracle/TBP/saparch]>
[/oracle/TBP/saparch]>
[/oracle/TBP/saparch]> ls -lRt|more
total 11448
-rw-r--r--    1 oratbp   dba            3037 Aug 25 09:00 adtiuouq.svd
-rw-r--r--    1 oratbp   dba         2459544 Aug 25 09:00 archTBP.log
-rw-r--r--    1 oratbp   dba            1344 Aug 25 08:00 adtiujme.svd
-rw-r--r--    1 oratbp   dba            3037 Aug 25 07:00 adtiueds.svd
-rw-r--r--    1 oratbp   dba            1344 Aug 25 06:00 adtityvg.svd
-rw-r--r--    1 oratbp   dba            3037 Aug 25 05:00 adtittmv.svd
-rw-r--r--    1 oratbp   dba            3037 Aug 25 04:00 adtitoei.svd
-rw-r--r--    1 oratbp   dba           14488 Aug 25 03:01 adtitivw.svd
-rw-r--r--    1 oratbp   dba            3685 Aug 24 21:00 adtiscxc.svd
-rw-r--r--    1 oratbp   dba            3685 Aug 24 20:00 adtirxor.svd
-rw-r--r--    1 oratbp   dba            3038 Aug 24 19:00 adtirsgf.svd
-rw-r--r--    1 oratbp   dba            3685 Aug 24 18:00 adtirmxt.svd
-rw-r--r--    1 oratbp   dba            1344 Aug 24 17:00 adtirhph.svd
-rw-r--r--    1 oratbp   dba            1344 Aug 24 16:00 adtircgu.svd
-rw-r--r--    1 oratbp   dba            1344 Aug 24 15:00 adtiqwyi.svd
-rw-r--r--    1 oratbp   dba            1344 Aug 24 14:00 adtiqrpx.svd
-rw-r--r--    1 oratbp   dba            3038 Aug 24 13:00 adtiqmhk.svd
-rw-r--r--    1 oratbp   dba           10685 Aug 24 12:01 adtiqgyy.svd
-rw-r--r--    1 oratbp   dba            3038 Aug 24 11:00 adtiqbqm.svd
-rw-r--r--    1 oratbp   dba            1344 Aug 24 10:00 adtipwia.svd
-rw-r--r--    1 oratbp   dba            3037 Aug 24 09:00 adtipqzo.svd
-rw-r--r--    1 oratbp   dba            1344 Aug 24 08:00 adtiplrc.svd
-rw-r--r--    1 oratbp   dba            3037 Aug 24 07:00 adtipgir.svd
-rw-r--r--    1 oratbp   dba            3037 Aug 24 06:00 adtipbae.svd
-rw-r--r--    1 oratbp   dba            3037 Aug 24 05:00 adtiovrs.svd
-rw-r--r--    1 oratbp   dba            1344 Aug 24 04:00 adtioqjh.svd
-rw-r--r--    1 oratbp   dba            8765 Aug 24 03:00 adtiolav.svd
```

Planning Calendar: DB13



Actions

Check and Update Optimizer Statistics

By running update statistics regularly, you make sure that the database statistics are up-to-date, so improving database performance. The Oracle cost-based optimizer (CBO) uses the statistics to optimize access paths when retrieving data for queries. If the statistics are out-of-date, the CBO might generate inappropriate access paths (such as using the wrong index), resulting in poor performance.

From Release 4.0, the CBO is a standard part of the SAP System. If statistics are available for a table, the database system uses the cost-based optimizer. Otherwise, it uses the rule-based optimizer.

Adapt Next Extent Size

The aim is to avoid the structure of tablespaces deteriorating – that is, breaking up into a large number of small extents – because this reduces database performance.

The database tables and indexes are assigned to one of a number of categories. The standard size of the next extent for each category is defined in the tables `TGORA` (for tables) and `IGORA` (for indexes).

When a table requires adapting, the size of the next extent is determined using an algorithm. This also makes sure that the value of `MAXEXTENTS` for a table or index is not less than the value defined in the `TGORA` or `IGORA` table.

You can exclude specified tables or indexes from this function by using the `next_exclude` parameter.

You can specify individual values for `NEXTEXTENTS` or `MAXEXTENTS` using the `next_special` parameter.

Database Check

The aim is to prevent database problems that might lead to downtime for the database.

You can use BRCONNECT to check the following conditions:

- Database administration, such as configuration, space management, state of the database, and so on
- Database operations, such as backup results, failed operations, and so on
- Critical database messages in the Oracle alert file, such as `ORA-00600`
- Incorrectly set database profile parameters in the **`init<DBSID>.ora`** file, such as **log_archive_start = false**

When a critical situation is discovered, BRCONNECT writes an alert message to the detail log and to the results table `DBMSGORA`.

Names of Detail log

.chk : Check database system, function -f check
.cln : Clean up database log, function -f cleanup
.nxt : Adapt next extents, function -f next
.sta : Check and update statistics, function -f stats
.dst : Delete damaging statistics, function -f stats -d
.opt : Check statistics only, function -f stats -f nocoll
.aly : Collect statistics for tables with outdated statistics, function -f stats -f nocheck
.vst : Verify table and index structure, function -f stats -v
.quc : Determine objects to be processed for a given function, command option -q|-query

Clean up Logs

Clean up log options is used to clean up old log files, disk backups, export files, trace files and database logs. The aim is to avoid unnecessary use of disk space by deleting files that are no longer required.

BRCONNECT cleans up the following files:

- Detailed BRARCHIVE logs in the saparch directory
- Detailed BRBACKUP logs in the sapbackup directory
- Detailed BRCONNECT logs in the sapcheck directory
- Detailed BRRESTORE logs in the sapbackup directory
- Detailed SAPDBA logs in the sapreorg directory
- BRBACKUP disk backups of the database files
- BRARCHIVE disk backups of the offline redo log files
- SAPDBA export dump and export script directories
- Oracle trace and audit files
- Log records in the SDBAH and SDBAD tables
- Log records in the XDB tables
- Database check results in DBMSGORA table

KERNEL UPGRADE STEP BY STEP

1. Check the existing kernel level by logging into SAP level
   SM51 ->Release notes

     OR
   go to command level and execute disp+work (Login as <SID>ADM to perform this task)

2. check the Kernel levels available in SAP service market place

     http://service.sap.com/swdc

    Downloads-Download -> Support package and patches -> Entry by Application Group ->Additional compnents -> SAP Kernel-> SAP Kernel 32 bit->SAP Kernel 6.40 32 bit-SAPKERNEL 32 bit->Windows server on IA32bit->Database Independent

   Select SAPEXE_(latest patch number)_*.SAR and click on add to download baskt from the buttom.

Repeat above step to down load Database Dependent kernel by sleecting the database you have/want.

Select SAPEXEDB_<latest_patch_number>_*.SAR and click on Add to download basket.

3. now launch download manager from your system and down load the SAPEXE* and SAPEXEDB* to your local drive. (e.g. G:\Kernelupgrade)

4. Now extract the .SAR files from command prompt

    cd G:\kernelupgrades
       G:\Kernel upgrade>sapcar -xvf SAPEXE_1773-10001664.SAR
       G:\kernelupgrades\>sapcar -xvf SAPEXEDB_1773-10001667.SAR

5. Now check the number of files in G:\kernelupgrade   (e.g. 115 files)
6. go to C:\usr\sap\S11\SYS\exe\run
7. check the number of files   (e.g 124 files)
8. stopsap on target system

   login as <sID>adm
   #stopsap (unix)

In Windows/NT: go to desktop > double click on SAP Management Console
      Select the server
      Click on stop
      Wait for SAP to be stopped

9. stop all sap service and database service from

   Windows/NT: Porgrams->Administrative Tools ->services->
            Stop TNSlistner server for oracle
            stop oracleserviceS11 for oracle
            stop SAPS11_00 for SAP
            stop SAPOSCOL for SAP
            stop if any other oracle service is running.
            Select the service ->right click -Stop

10. Now take backup fo your old kernel directory (use OS level copy command)
    Copy run folder to G:\kernelbackup

11. go to Kernel-upgrade folder

12. Copy all the contents from this foler and paste it into c:\usr\sap\<SID>\SYS\exe\run

13. check the kernel patch by typing disp+work at command level

14. Start all sap and database services from Programs->Administrative Tools->services->

     Start TNSlistner server for oracle
     Start oracleserviceS11 for oracle
     Start SAPS11_00 for SAP
     Start SAPOSCOL for SAP
Select the service ->right click -Start

15. Start sap on Server now

 Windows/NT: SAP Management Console (MMC)->select Server->click on start button from top menu. Check for green light on servers

 UNIX: **startsap**

16. Now login to sap from saplogon menu and see you are able to login successfully.

17. Double check the kernel patch level by executing SM51 -> Release Notes

18. Kernel upgrade is completed.

Support Pack Application

1. Check the current patch in your system.

   a. Check SPAM Version
   b. Check SAP_BASIS patch level
   c. check SAP_ABAP patch level
   d. Check SAP_APPL Patch level.

  To get all the above information follow the following steps

  Execute SPAM - Check the SPAM level at the top.
  Click on Package Level to display all the patches in the system

  Note down SAP_BASIS, SAP_ABAP, SAP_APPL patch level in the display.

2. Find out what is the latest patch level available for above components.

http://service.sap.com/download

Download -> Support Packages and Patches -> Entry by Application Group -> Application Components ->SAP R/3 Enterprise -> SAP R/3 Enterprise 47 X 110 -Entry by component -> SAP R/3 Enterprise Server-> SAP_BASIS620 ->

From the list select which component you want and click on it. E.g.click on SAP BASIS 6.20 and select the patch level 25 you want comparing your current patchlevel. Select all the patches you are behind to current and add to download basket.

All the patches are in .CAR format.

3. Repeat the same step for all components you want to apply for your system.

4. Download all the patches you added to download basket by using SAP Download Manager.

5. Save all the .CAR files to your local hard drive say C:\supportpacks

6. now transfer all these .CAR files to Your Unix Server where your SAP is running using ftp.

ftp steps

```
go to command prompt
cd c:\supportpacks
c:\supportpacks\> ftp solsrv  (solsrv is the unix servername)
username :  SIDADM
password :   (Password of SIDADM)

ftp> cd /downloads/supp_pack
ftp> bin
ftp> mput *.CAR  (press y for all the confirmations)
ftp> bye
```

7. Now extract the .CAR files by using executable CAR.EXE

```
#cd /download/supp_pack
# CAR -xvf  <Filename1>.CAR  (files are extracted to .../EPS/in foler)
```

Repeat extraction for all .CAR files

You will get the files with extension .ATT and .PAT

8. Now go to /usr/sap/trans/EPS/in directory and remove the existing files out there.

login as <SID>adm and pasword

```
  # cd /usr/sap/trans/EPS/in
  # rm -rf *
```

9. Now Copy all .ATT and .PAT files to /usr/sap/trans/EPS/in directory

```
  # cp /download/supp_pack/* /usr/sap/trans/EPS/in
  # ls -l
```

10. Login to SAP using a superuser other than SAP* and DDIC to 000 client.

11. Execute **SPAM** in SAP command line

12. Click on Support Package -> Load Packages -> From Application Server.

Here all the .ATT and .PAT files are converted into proper Patch format and available on SAP level to apply suuport packs as per the requirement.

Click on Back button

13. Now Click on Display/define

14. Ask all the users to logoff from the system OR lock all the users in all business clients using customizing program or SAP tool.

15. Make sure you have full backup of system before applying the patch and enough downtime to apply the patch

SPAM Update

16. Select support package ->Import SPAM update to update the SPAM version.

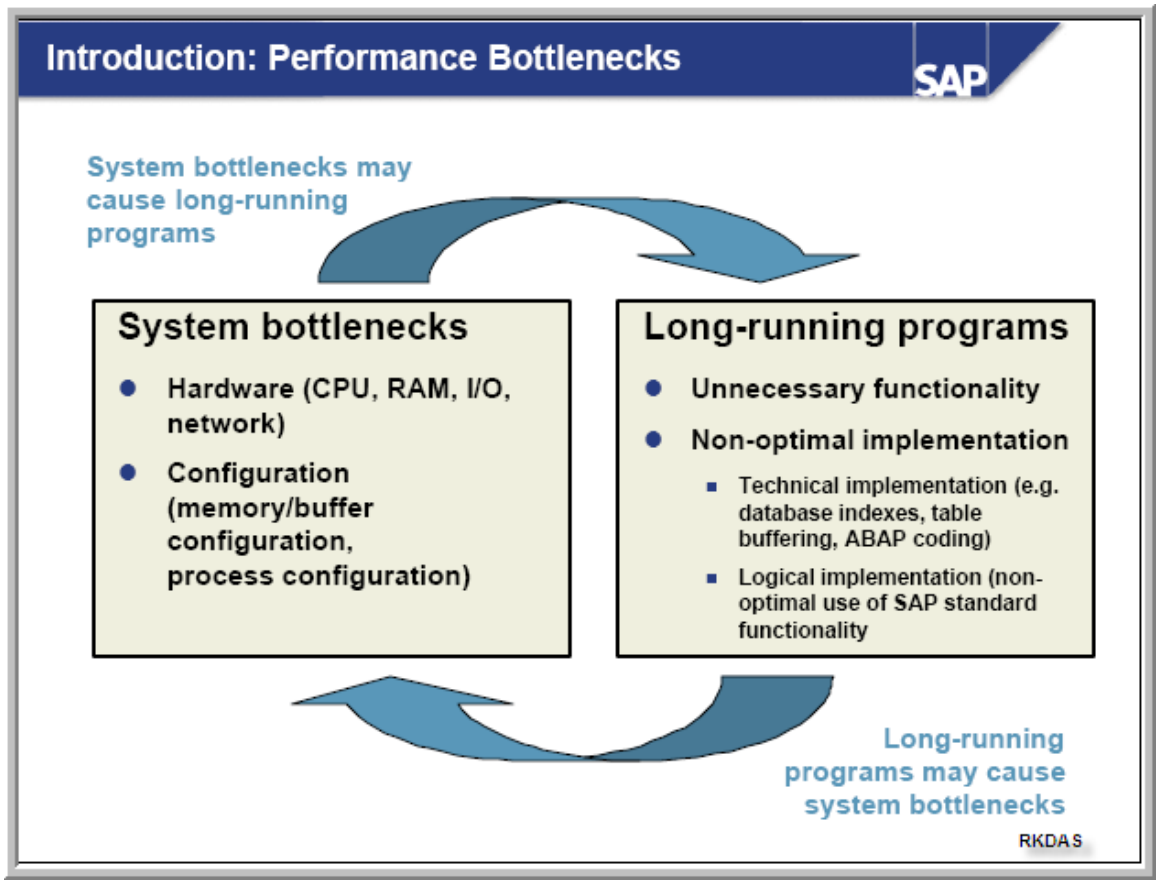
Applying Patch

Before Applying the Patch to system, we have to check if there are any objects under modification or any Transport Request in modification condition. IF any then we may have to adjust those prior to applying the SAP Patch.

1. Execute SPAU and see if any objects are there to adjust
2. Excute SPDD to see if any dictionary objects are there to adjust.
3. Execute SPAM
4. Click on display/Define
5. Select the component (e.g. SAP_BASIS)
6. Select the Patch number (e.g. SAPKB62012)
7. Click on confirm Queue (\/)
8. Select Import queue by selecting truck button
9. Confirm it by clicking on (\/) mark
10. Patch application is started.
11. If you encounter error during patch application, start applying again.
12. Confirm the message

13. SPAM status is in yellow
14. Click "confirm queue" button to confirm the queue.
15. Check the spam status. It should be green.
16. Support pack application is successful
17. Click on Package level to see the change.

Performance Tuning of SAP System



R/3 Basis Tuning Tasks

- **Optimize system parameters (S)**
  - R/3 parameters (for example, for memory management)
  - Database parameters (for example, for database buffer sizes)
  - Operating system and network parameters
- **Optimize database disk layout through I/O balancing (S)**
- **Optimization of workload distribution (S)**
  - Number of work processes, background scheduling, log-on groups
- **Verify hardware sizing by detecting hardware bottlenecks (S)**

S: Performed by the R/3 System administrator

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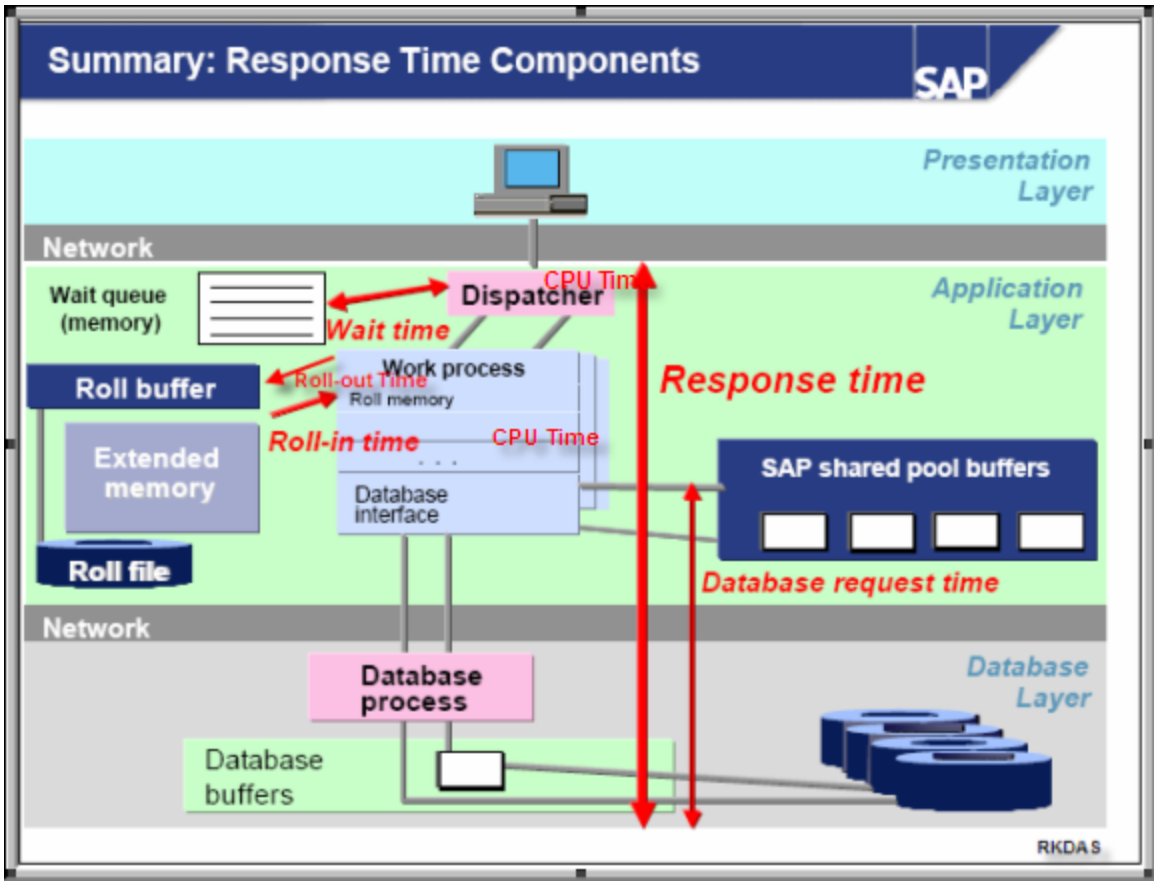
R/3 Application Tuning Tasks

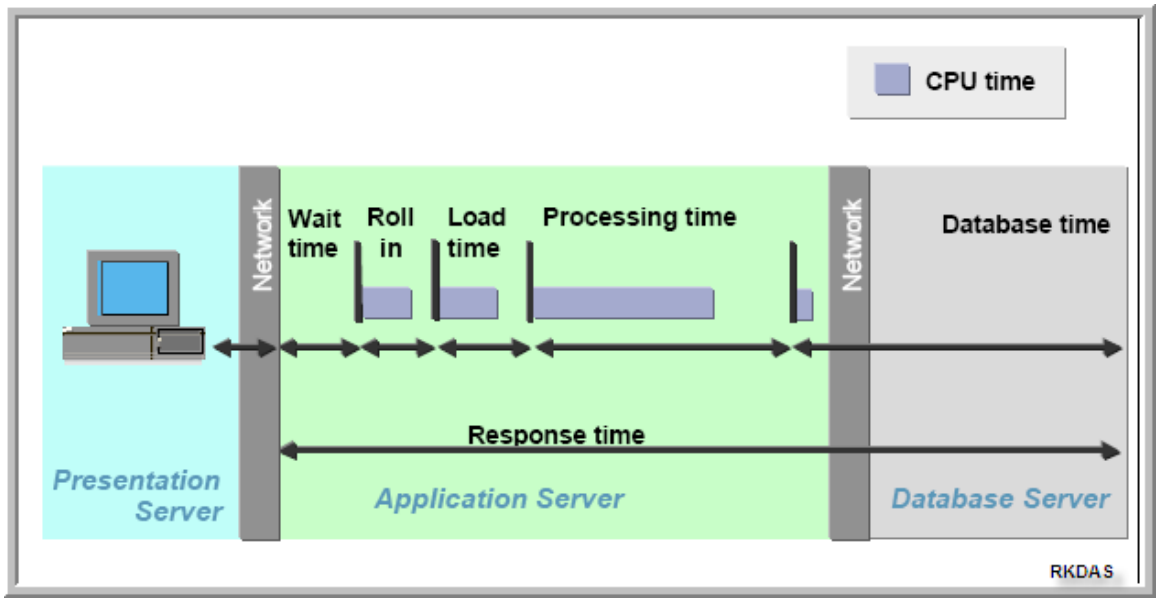
- **Find and apply SAP Notes from SAPNet (D,S)**
  - Bug fixes, corrections, patches, hints
- **Optimize the SAP Customizing (D)**
  - For example, in SD and PP
- **Optimize ABAP-coding of customer's modifications (D)**
  - For example, Z reports, user exits
- **Create, change or drop indexes (D,S)**
- **Design table buffering (D,S)**

S: R/3 System administrator

D: R/3 developer, R/3 application consultant

RKDAS





- **Response time** in milliseconds: Starts when a user request enters the dispatcher queue; ends when the next screen is returned to the user. The response time does not include the time to transfer from the screen to the front end.

- **Wait time** in milliseconds: This is the time a user request sits in the dispatcher queue. It starts when user request is entered in the dispatcher queue; and ends when the request starts being processed.
- **Roll-in time** in milliseconds: The amount of time needed to roll user context information into the work process. When a user is dispatched to a work process, "user context" data – the user's logon attributes, authorizations, and other relevant information – is transferred from the roll buffer, extended memory, or the roll file into the work process. This transfer (by copying or mapping, as appropriate) of user context data into work process memory is the mechanism known as a "roll in".
- **Roll Out Time**: After the transaction finishes and the work process is no longer required, the user context data is rolled out of the work process.
- **Load time** in milliseconds: The time needed to load from the database and generate objects like ABAP source code, CUA, and screen information.
- **Processing time** : This is equivalent to response time minus the sum of wait time, database request time, load time, roll time, and enqueue time.
- **Database request time** : Starts when a database request is put through to the database interface; ends when the database interface has delivered the result.
- **CPU time** in milliseconds: This is the CPU time used by the R/3 work process CPU *time* is the amount of time during which a particular work process has active control of the central processing unit (CPU).

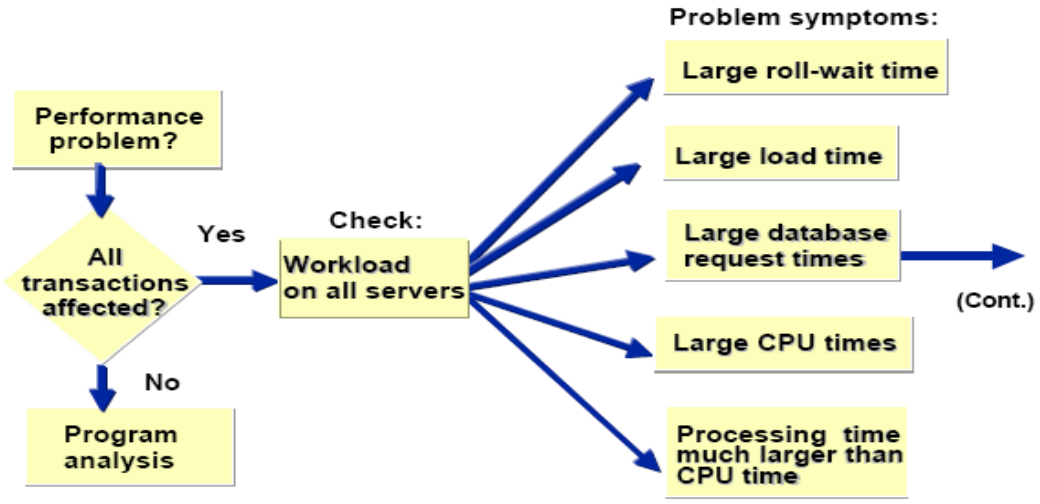
Workload Analysis (ST03N)

To access the Workload Monitor, use Transaction code ST03N.
the "Administrator's Mode" that is chosen by default
Change to "Expert Mode". Choose under "Detailed Analysis" -> "Last minutes load"
Under Analysis views, you can access, for example:

- Workload overview - Workload statistics according to work process type
- Transaction Profile - Workload statistics according to transaction.
- Time Profile - Workload statistics according to hour

See also the R/3 Knowledge Product CD, System Monitoring.
Note: Roll wait time and GUI time are explained in section 7, Interface Monitoring.

Initial Analysis Roadmap (1)



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- If a problem is detected, the data in the Workload Monitor (Transaction ST03N) can be used as follows to identify the area of the system where the problem is located.
- First check for general performance problems affecting all transactions. Good general performance is normally indicated by:
  - Wait time < 10% response time
  - Main menu (choose *Transaction Profile*) < 100 ms
- In the Workload Monitor, the following values normally indicate good performance:
  - Average roll-in time < 20 ms
  - Average roll wait time < 200 ms
  - Average load (and generation) time < 10 % of response time (<50 ms)
  - Average database request time < 40 % of (response time - wait time)
  - Average CPU time < 40 % of (response time - wait time)
  - Average CPU time Not much less than processing time
  - Average response time - Depends on customer requirements – there is no general rule

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Initial Analysis Roadmap (2)

Large roll-wait time	Communication problem with GUI or external system
Large load time	Program buffer, CUA buffer, or screen buffer too small
Large database request times	CPU/memory bottleneck on database server, network problems, expensive SQL statements, database locks, missing indexes, missing statistics, small buffers
Large CPU times	Expensive ABAP processing, for example, processing large tables, frequent accessing of R/3 buffers
Processing time much larger than CPU time	CPU bottlenecks, network problems, communication problems

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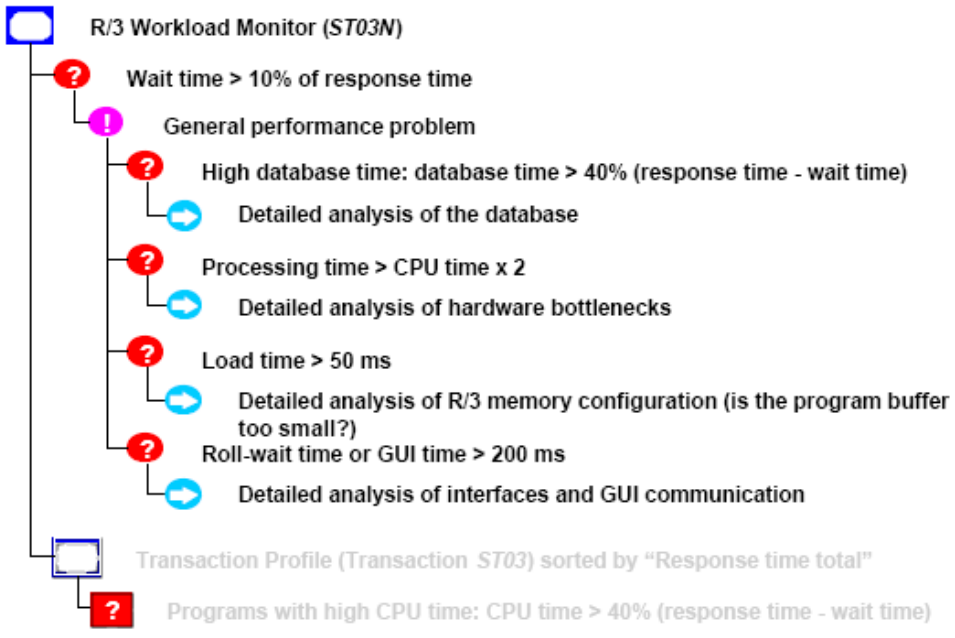
Analysis Roadmap: Using the Workload Monitor



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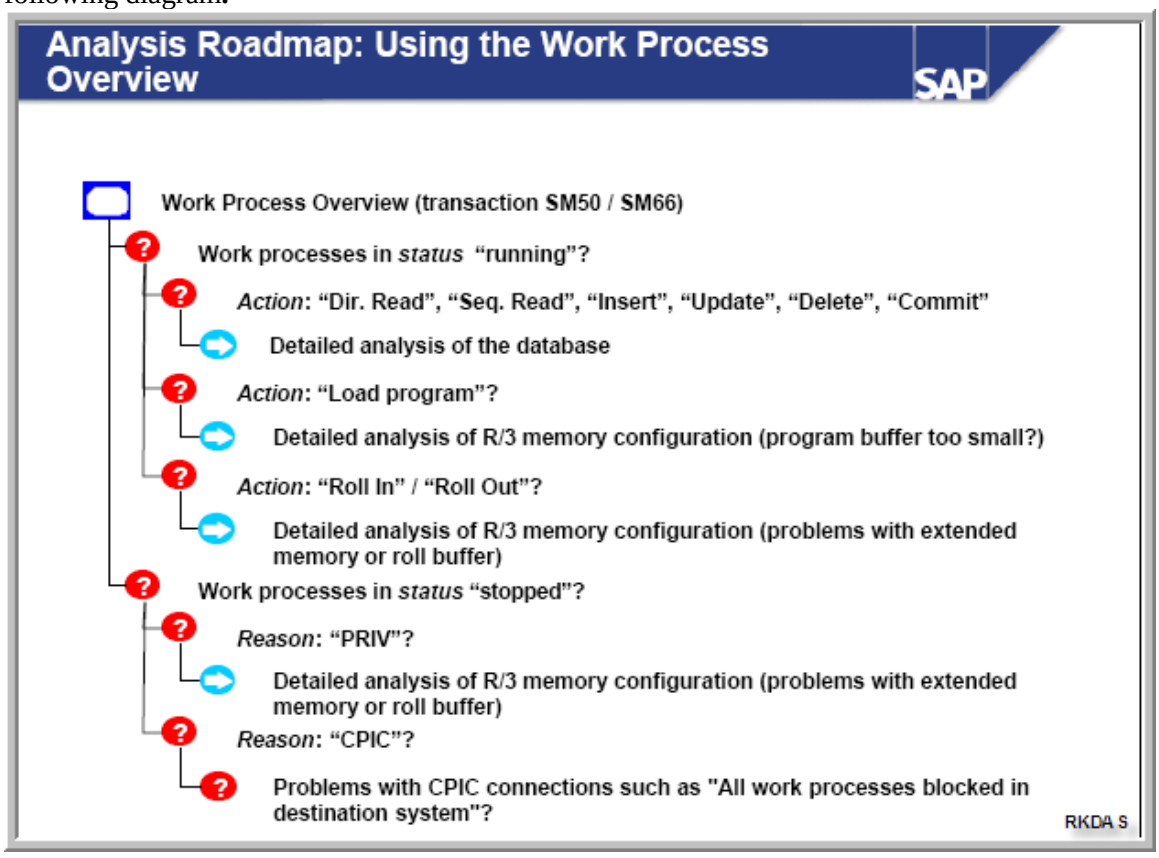
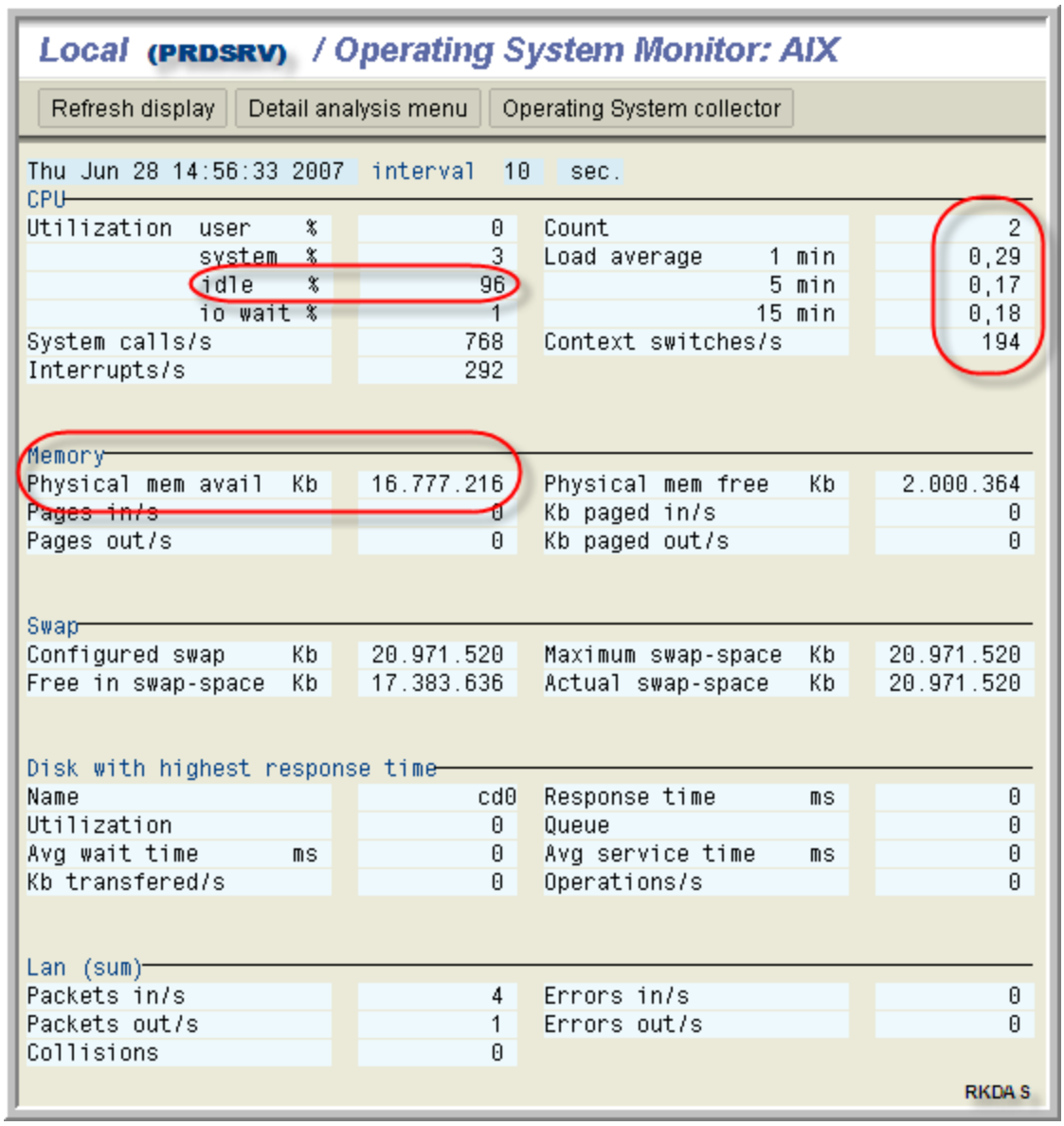
Tcodes used for initial Analysis

SM50/SM66: Work process overview
ST06: Operating System monitoring
ST03N: Workload Analysys
ST02: Setup buffers
ST04: Database Monitor
STAT: Statistics of Transactions/users/sqls ..
ST05: SQL Analysis
SE30 : ABAP trace

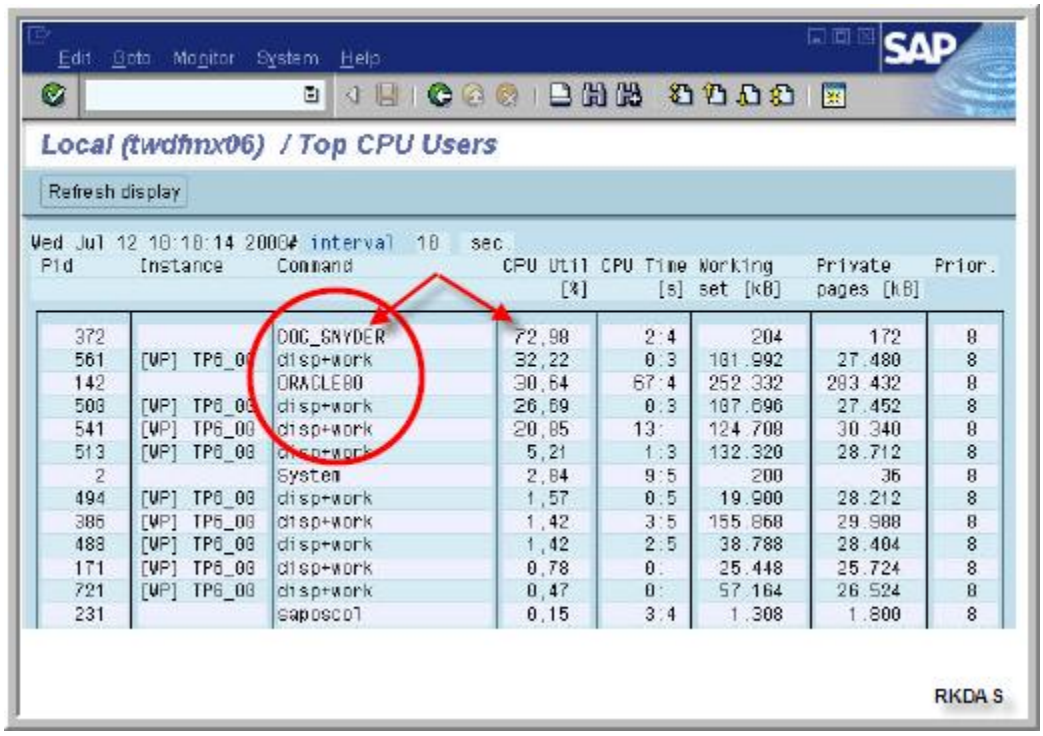
SM50/SM66: Workprocess overview
Execute SM50 in particular application server and check for detail and match with with the following diagram**.**



ST06: Operating System Monitor
In operating system monitor we check what is CPU utilization and who is using that much resources as shown in fig below

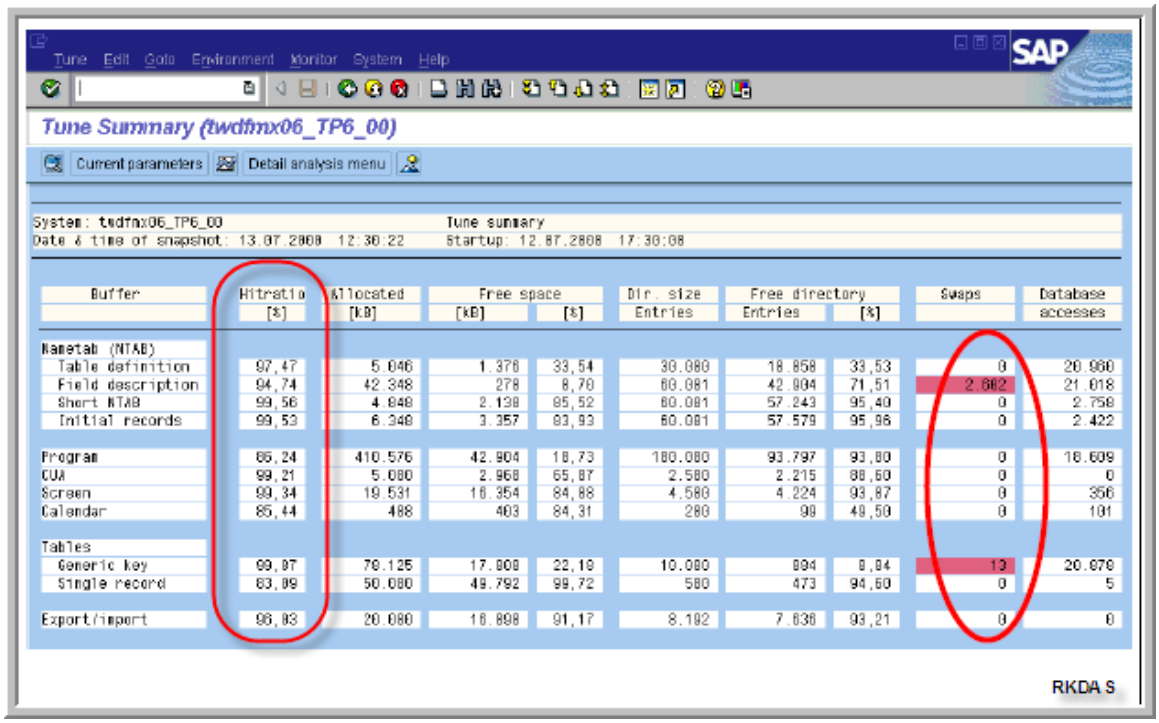


Now Click on Detail Analysis Menu ->click Top CPU

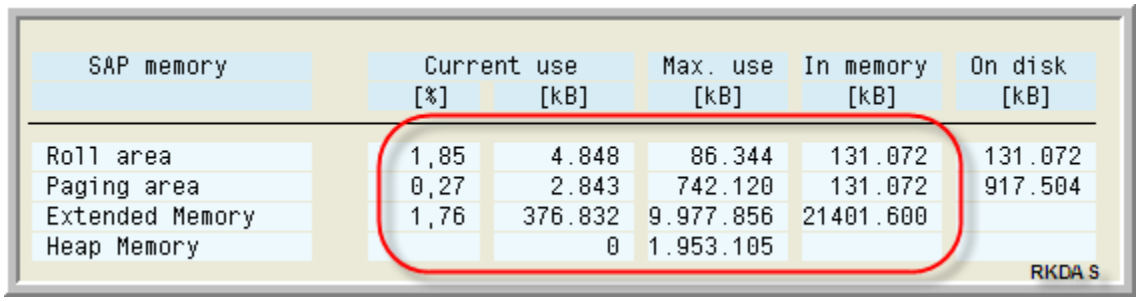


- "Disp+work" signifies an R/3 work process.
- "ORACLE80" signifies a database process.
- "DOC_SNYDER" is an external processes which does not belong to an R/3 instance or to the database. External processes may affect performance critically.

Setup Tune Buffers : ST02



In above pic we check how much swap is occurring and what is the hitratio ?
Hit ratio should be >90 % all the time
There should not be much swap during System running.
In the below pic we see how much memory is used in same tcode ST02



- *Max. use* (in KB) should be less than *In memory* (in KB).
- The lower part of the Setups / Tune Buffers monitor displays data on:
  - Extended memory size and usage
  - Usage and configuration of the roll mechanism
- Bottlenecks may be indicated if:
  - For extended memory: *Max use. = In memory*
  - For roll area: *Max use. > In memory*
- For a detailed analysis of R/3 memory management, see unit *R/3 Memory Management.*

If there is a lot of swap occurs in and displayed in ST02, then you have to try changing the Instance profile parameter

buffersize = 400000

Buffer size is too small:

Programs are swapped out, and the reloads cause high load and long DB request times

Solution: a. Increase buffer size

c. Avoid frequent transporting and development in the production system

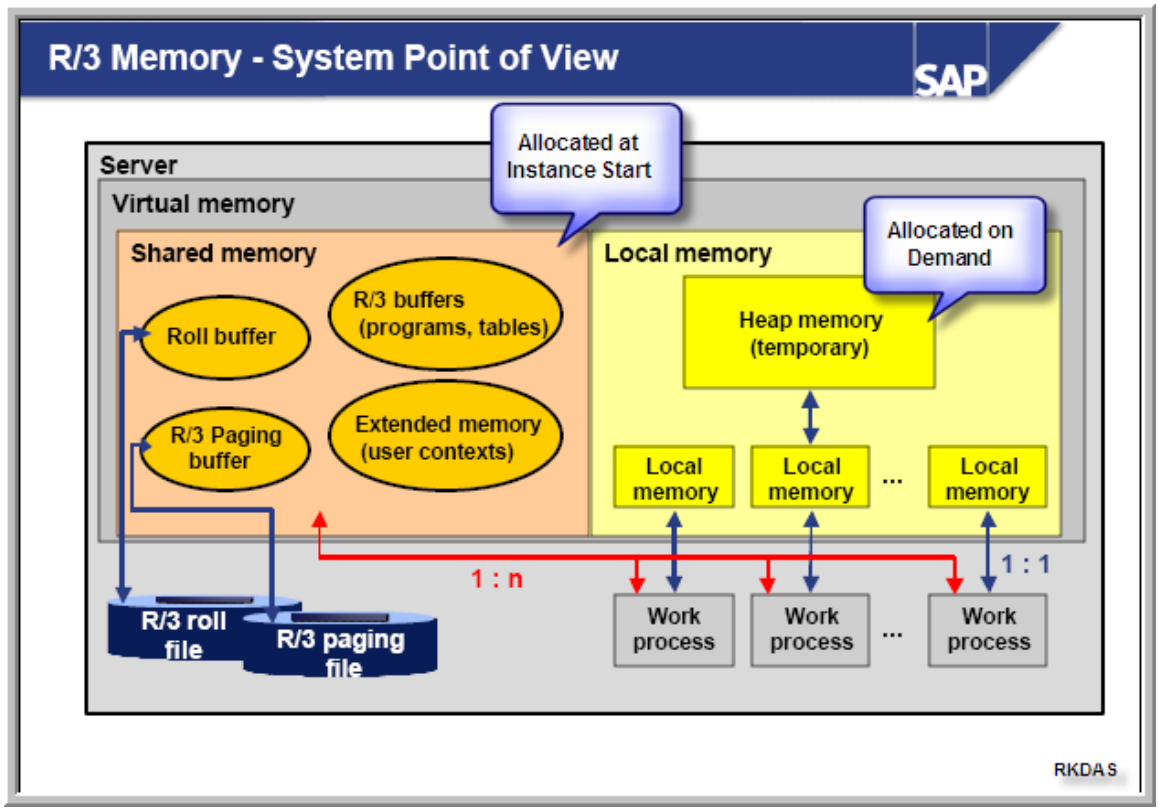
Memory Management

■ *R/3 memory areas* introduces the various R/3 memory areas, which may be physically located in one or more of the following:

- Local memory (Allocated on Demand)
- Shared memory (Allocated at Instance Start)
- File system

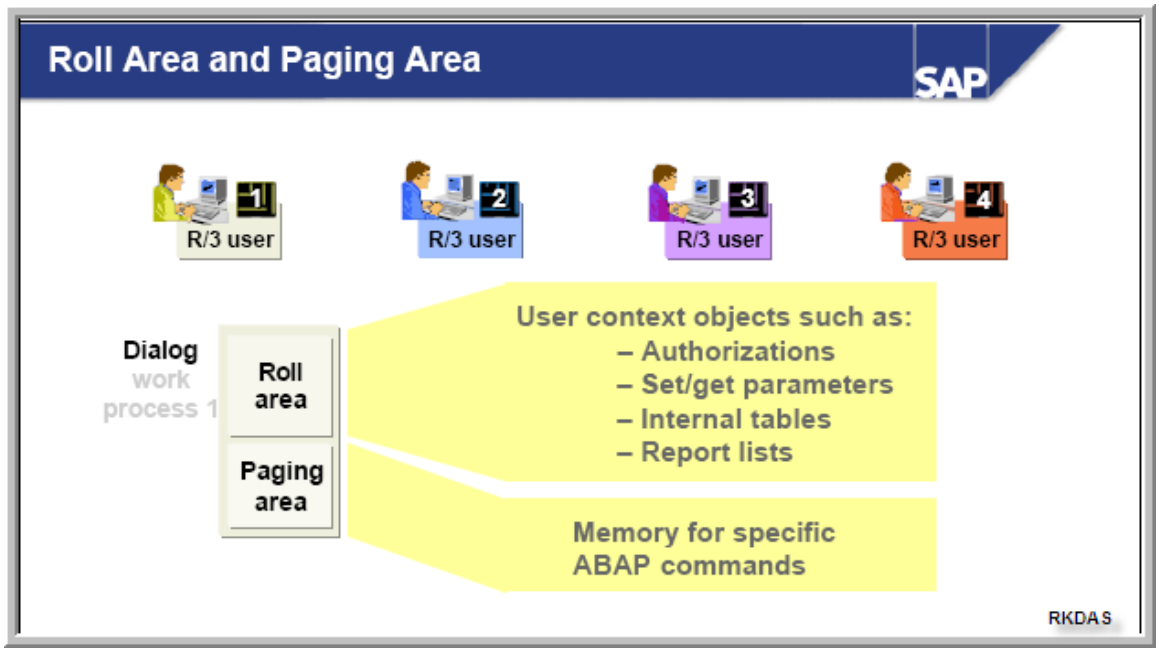
Maxm Virtual memory = Physical Memory + Operating System swap space
VM for Unix = 3 X avail Physical mem
VM for Widnows = 2 X avail physical Mem

VM = Shared Memory + Local Memory

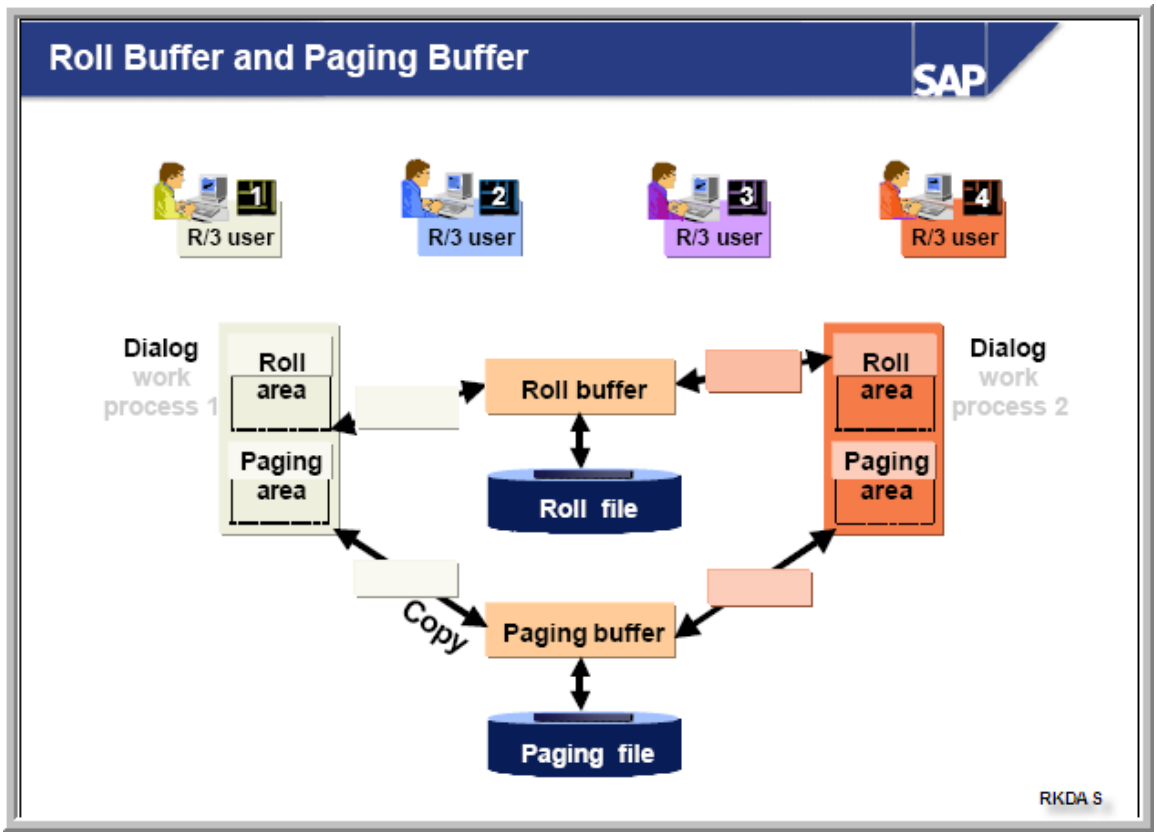


The six R/3 memory areas are:

- Buffers
- Extended memory
- Heap memory
- Roll memory
- R/3 paging memory
  Not to be confused with operating system paging!
- Local work process memory



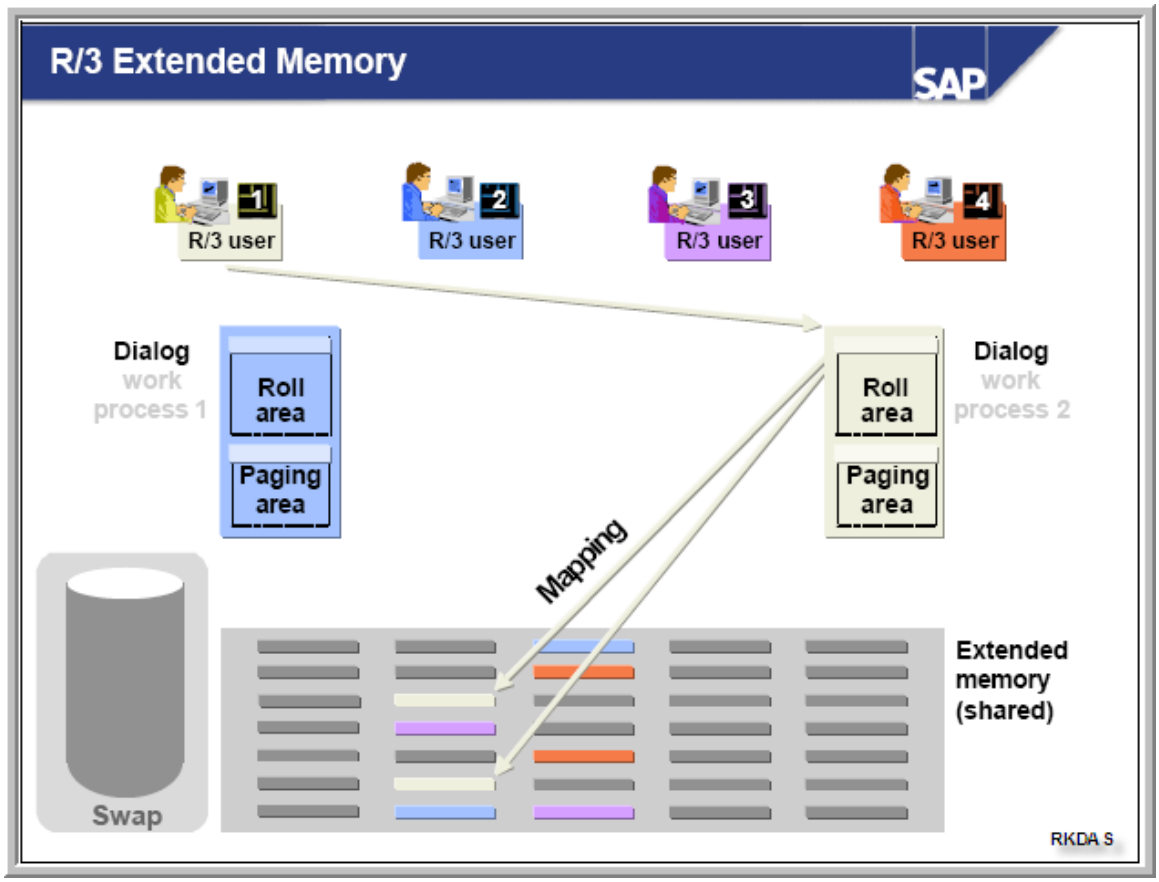
- The data processed in work processes is stored in two memory areas:
  - The **roll area**, in which user context data is stored. User context data may include pointers to active programs, set/get parameters (related to the most recent input of the user), authorizations, internal tables, and report lists.
  - The **paging area**, which stores the application program data that correspond to specific ABAP commands including EXTRACT, IMPORT TO MEMORY, EXPORT FROM MEMORY, and CALL TRANSACTION.
- The size of these areas is configurable using R/3 profile parameters.



■ Where there is buffer space available, the roll area and the paging area are held in the respective buffers in the application servers. When there is not sufficient buffer space, the roll area and the paging area must be stored in the respective physical disk files (roll file and paging file).

■ Thus, the user data processed in work processes is stored in two areas:

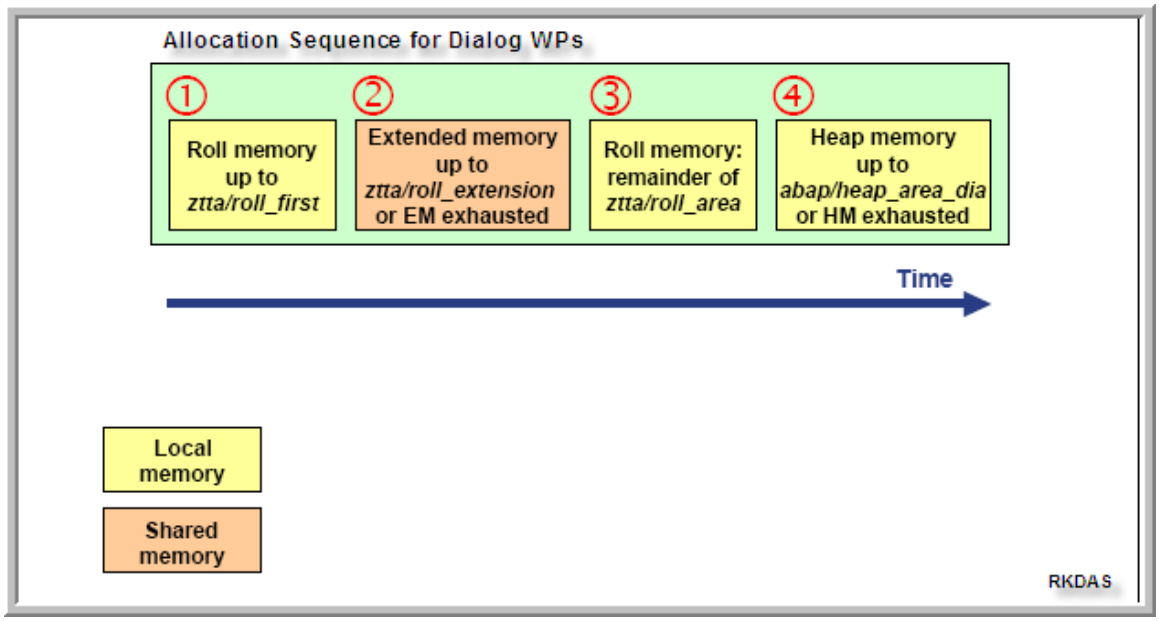
- The roll file and its associated buffer
- The page file and its associated buffer



■ User contexts are not only stored in roll files and the corresponding buffers. As of R/3 Release 3.0, they are primarily stored in R/3 extended memory.
■ In R/3 extended memory, a large area of memory shared by all available work processes can be accessed through pointers. Using extended memory as well as roll files thus reduces the amount of copying from roll areas that is required during user context switches, and avoids the overhead caused by large roll-in or roll-out tasks.

Allocation Concept

- **In R/3 memory management:**
  Work processes serve a large number of frontend users
  Each work process must be capable of loading the user context data
  for successive frontend users
- **The roll data** and paging data is copied to the roll buffer and
  paging buffer and the corresponding files when a user leaves the work process**.**
- **R/3 extended memory uses mapping instead of copying**
  and therefore allows:
  - ➔ Fast access to internal tables and lists through pointers
  - ➔ Quick context switches
  - ➔ Usage of hardware with large memory
  - ➔ Reduced load on CPU and disk
- **R/3 extended memory requires sufficient physical memory**



■ To keep the usage of the roll area to a minimum and make more use of extended memory, only a small portion of the roll area is used initially. The size of this portion is set by the parameter ***ztta/roll_first***.

■ Note: Independent of parameter *ztta/roll_first*, there is a minimum amount of roll area that is always used. For example, **if *ztta/roll_first*** is set to 1, not just one byte is allocated, but the minimum amount required for administrative data. As of R/3 release 4.6, this amount is approximately 170KB.

■ Extended memory enables the data to be stored in your system, where it is efficiently accessed by pointers rather than by a copy process.

■ The extended memory per user may vary from 1 MB to several 100 MB.

■ The user quota defines the maximum amount of R/3 extended memory that can be used by any one user, and is set with the parameter *ztta/roll_extension.*

■ The user quota thus prevents one user from occupying all available extended memory.

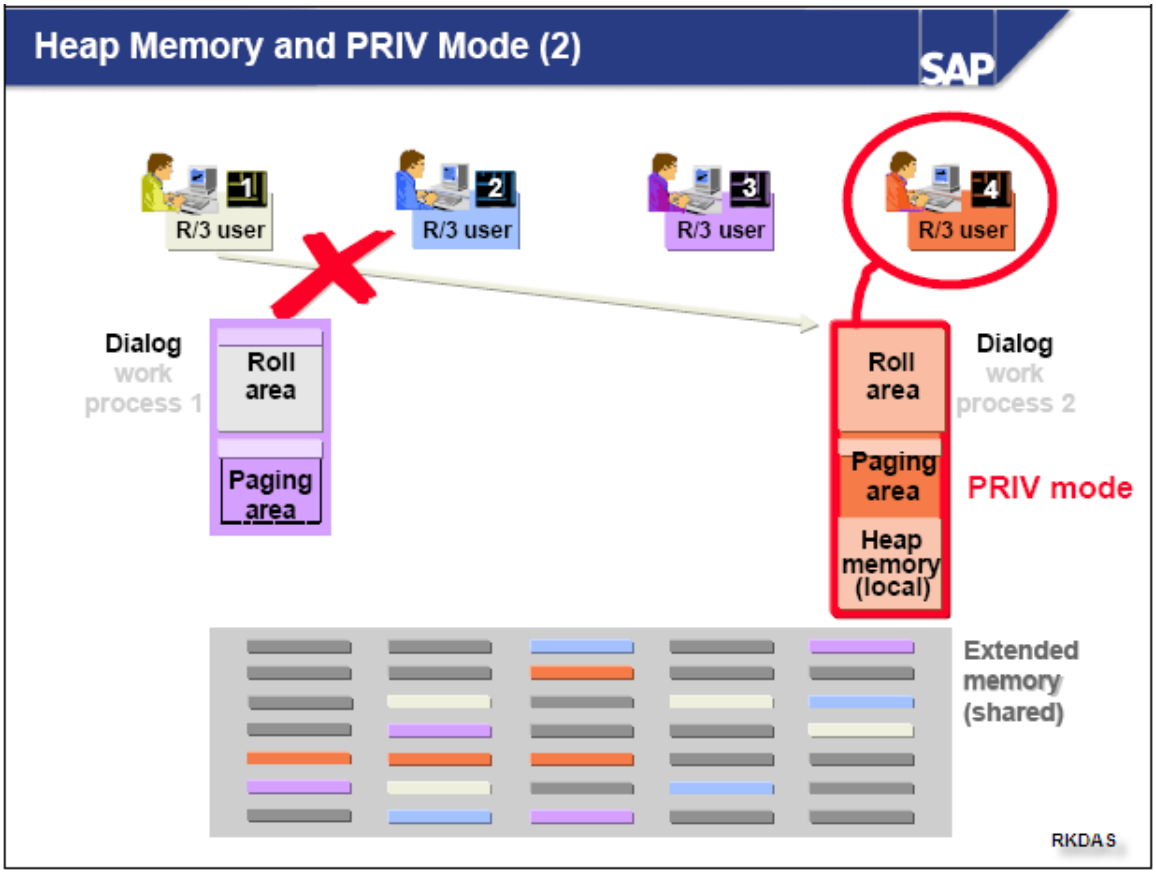
■ The remaining portion of R/3 roll memory is used when the system can no longer allocate R/3 extended memory, either because R/3 extended memory is full or because the quota has been reached.

■ The reason for using the remaining portion of R/3 roll memory is to avoid using heap memory, which is local memory, and avoid entering PRIV mode (see below).

■ If the work process requires still more space after using up all available roll area and extended memory, the system is forced to allocate R/3 heap memory locally.

Heap memory allocated by one work process is not accessible to any other work process. This means that a user is unable to continue the transaction in a different work process.

■ The user is now effectively locked to the work process. **This situation is called PRIV mode.**



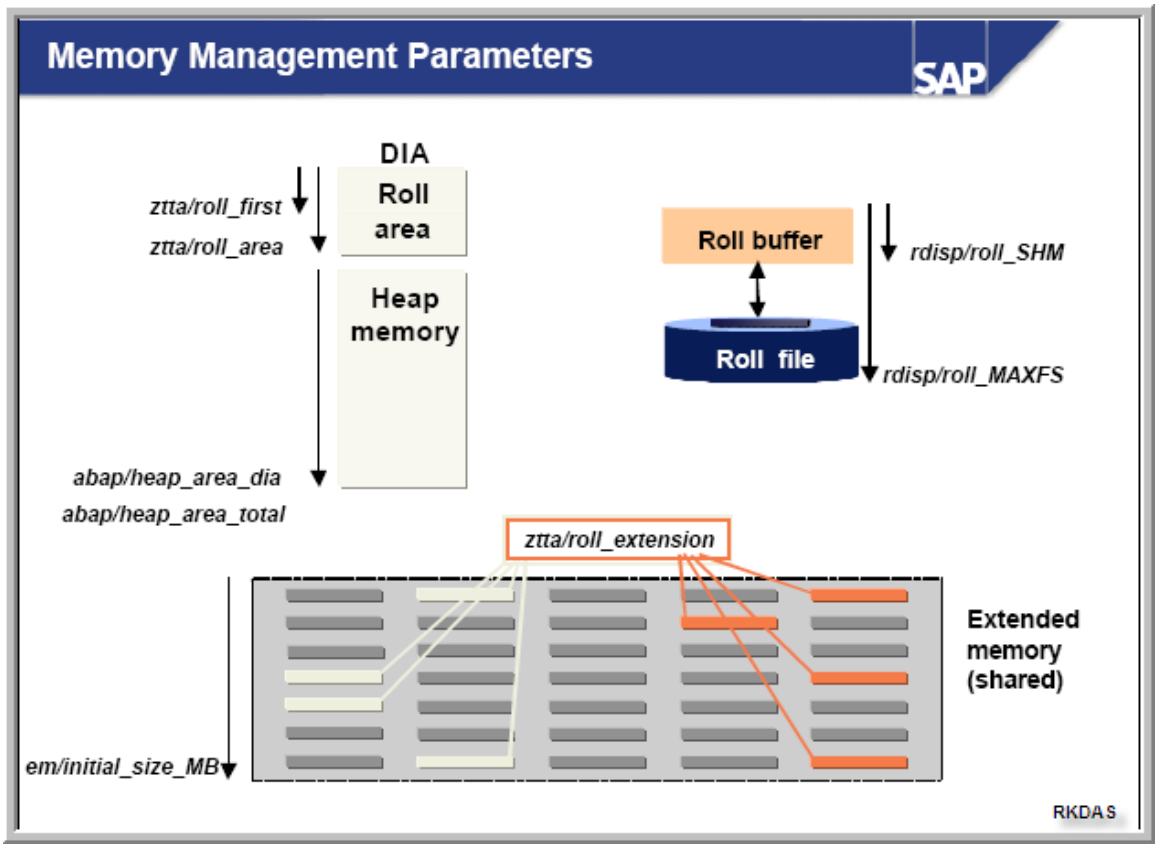
- A dialog process that was forced to allocate R/3 heap memory automatically enters PRIV mode.
- While a user is in a transaction which caused the work processes to enter PRIV mode, no other user can access the work process.
- Since R/3 architecture uses a limited number of work processes to satisfy a larger number of frontend users, other users suffer when a user goes into PRIV mode.
- If several users go into PRIV mode, they can work well, but other users can hardly work at all.
- Data in R/3 roll memory is **copied** during context switch.
- Data in R/3 extended memory is **mapped** during context switch.
- Data in R/3 heap memory can never leave the work process. If heap memory is allocated, the work process is exclusively assigned to one user in PRIV mode.
- Note: the sequence in which memory is used by work processes is not determined by the amount memory initially allocated. Thus, while the entire roll memory is allocated on work process start, it is not initially used up completely.

IMPORTANT

- The memory allocation strategy for dialog work processes aims to prevent work processes from allocating R/3 heap memory and thus entering PRIV mode.
- When a work process enters PRIV mode, it remains connected to the user until the user ends the transaction.

RKDAS

- Heap memory is released after use
- But used swap space is not freed by the operating system
- If the heap memory consumption of a work processes exceeds ***abap/heaplimit***, after ending the transaction, the heap memory is automatically released and the work process restarted to release the swap space.



Parameters

■ *ztta/roll_first*:

Defines the first part of the roll area that is allocated to a dialog process

■ *ztta/roll_area*:
Defines the total roll area per work process
■ *rdisp/roll_SHM*:
Defines the size of the roll buffer
■ *rdisp/roll_MAXFS* :
Defines the size of roll buffer and roll file
■ *em/initial_size_MB*:
Defines the fixed size of extended memory
■ *ztta/roll_extension*:
Defines the user quota for extended memory
■ *abap/heap_area_dia* :
Defines the limit for the amount of local memory allocated to dialog work processes
■ *abap/heap_area_nondia* :
defines the limit for the amount of local memory allocated to non-dialog work processes
■ *abap/heap_area_total*:
Defines the limit for the total amount of heap memory allocated to all work processes

OSS notes for general recommendations

For general recommendations, see:

- SAP Note 97497 Memory Management Parameter (3.0/3.1)
- SAP Note 103747 Performance 4.0/4.5: Parameter recommendations
- SAP Note 146528 Configuration of R/3 on hosts with much RAM

■ For AIX, see:

- SAP Note 28992 AIX: Number of shared memories exceeds 10
- SAP Note 95454 A lot of extended memory on AIX
- SAP Note 117267 AIX 4.3.x: Shared memory segments larger than 256MB
- SAP Note 124555 AIX: Recommendation for maximum extended memory
- SAP Note 128935 AIX 4.3, large memory configuration

■ For HP-UX, see:

- SAP Note 43427 HP-UX: Shared memory Limits
- SAP Note 106819 More than 1.75GB Shared memory for R/3 on HP-UX

■ For Tru64-UNIX, see:

- SAP Note 30606 Entries in /etc/sysconfigtab under Digital UNIX
- SAP Note 32915 OSF1 Kernel Parameters for 3.0x memory management

Expensive SQL Statement Analysis: (ST05)

Will be updated soon

Alert Monitoring (RZ20)

1. Execute RZ20

2. Expand SAP CCMS Monitor Templates

3. Double Click on Entire System

4. Expand the <SID>

5. Expand "Application Server"

6. Expand "R3 Services

7. Expand Background

8. Select and Check mark "Abortedjobs"

9. Click on Properties from top panel

10. Click on Methods

11. You will System analysis method has some value in it

12. Click on Method Assignment button

13. Click on "Auto Reaction Method button again

14. Click on Change button or pencil button from top

15. Select Method name from Method Allocation tab
Provide a method name like if you want the message to be sent automatic to your mail id.

I am taking here "CCMS_OnAlert_Email" which send the mail if any BAckground job fails

16. Save it

17. Leave the data collection method as it is for now

18. come back to RZ20 window now

Specifying mail ids From and To address. Follow the steps below

19. Select the Item Aborted job again

20. Click on Properties

21. You see in auto reaction method "CCMS_onAlert_Email". Double click this

22. In the next page change button from top left corner

23. Click on "parameter" bttuon

the parameter button can be filled up as below.

!!
Use a valid user name in client 000 in the following examples for <ADMINUSER>. Do not specify a system ID or client.
!!

Example 1:

Parameter name Parameter value

1. SENDER <ADMINUSER> (in client 000)
2. RECIPIENT OPERATOR1 (in client 000)
3. RECIPIENT-TYPEID B
4. TIME_ZONE <Time zone> (optional)

Example 2:

Parameter name Parameter value

1. SENDER <ADMINUSER> (in client 000)
2. RECIPIENT ABC:007:OPERATOR1
3. RECIPIENT-TYPEID R
4. TIME_ZONE <Time zone> (optional)

Example 3:

Parameter name Parameter value

1. SENDER <ADMINUSER> (in client 000)
2. RECIPIENT DistributionListIn000
3. RECIPIENT-TYPEID C
4. TIME_ZONE <Time zone> (optional)

Example 4:

Parameter name Parameter value

1. SENDER <ADMINUSER> (in client 000)
2. RECIPIENT DistributionListIn000
3. RECIPIENT-TYPEID P
4. TIME_ZONE <Time zone> (optional)

Dont change the RECIPIENT-TYPEID now because it is taken as per your system configuration

Example 5:

```
SENDER                 RDAS
RECIPIENT              rdas@timberland.com
RECIPIENT-TYPEID       P
```

Now click on Save.

24. In order to recieve mail from and to the internet mail ids , you SAP mail thru SAPconnect (SCOT) should work fine or should have configured

25. You can test your mail send/receive using tcode SBWP . Create a mail and send it to your corporate id or SAP login id

26. Check if you are receving message or not

27. IF your message stays in Outbox, you have to start the send process from tcode SCOT

28. SCOT- Utilities ->Start send process

29. If you want to automate your email process i.e if you want this send process to run frequently then you have to schedule a background job in the system using following method

29. a. For the SENDER user entered in RZ21, (<ADMINUSER> in the examples above), in transaction SU01 you must enter a <sourcesystem(C11):000:<ADMINUSER> RML address under 'Other communication...'.

If you want to send mails to an Internet address, you must enter an Internet address in SU01.

If you have an userid in 000 client then you can use urs or you can use some common user id other than SAP* and DDIC

b. In transaction SM59, you must configure an RFC connection from the source system (C11) to the target client/target system of the user who is meant to receive the mail. Make sure that you are logged on to the 000 client when you are creating this destination.

With Internet mails, you must define a TCP/IP destination for the computer, on which the SAP Internet Mail Gateway is installed.

Default RFC will be there to your target client in the same system. Else create a RFC for the target client using the same server information and user in the target client.

c. C11: In transaction SCOT, you must create RML nodes (mail in other clients/other R/3 System) or INT nodes (mail to Internet address).

Make sure that you are logged on to the 000 client when you are creating nodes in transaction SCOT.

If your INT / SMTP is configured then RML may not be required.

d. Schedule a send process (report RSCONN01) as a periodic background job in the target client or target system.

(SCOT -> View -> Jobs).

e. You must create a CPIC user with a S_A.SCON profile in the target client/target system. This is required for the SAPConnect communication.

If you have an user with SAP_ALL profile then you will be all set.

30. Now repeat the step 25 and see if you are able to get the mails now. In SCOT also check your default domain is set perfectly.

31. Now you generate some kind of job failure in SM37 by creating some job which will not be success in SM36

32. Now check whether you recieve the mail or not.

33. Play around with RZ21 , RZ20 , SCOT, SBWP tcodes .

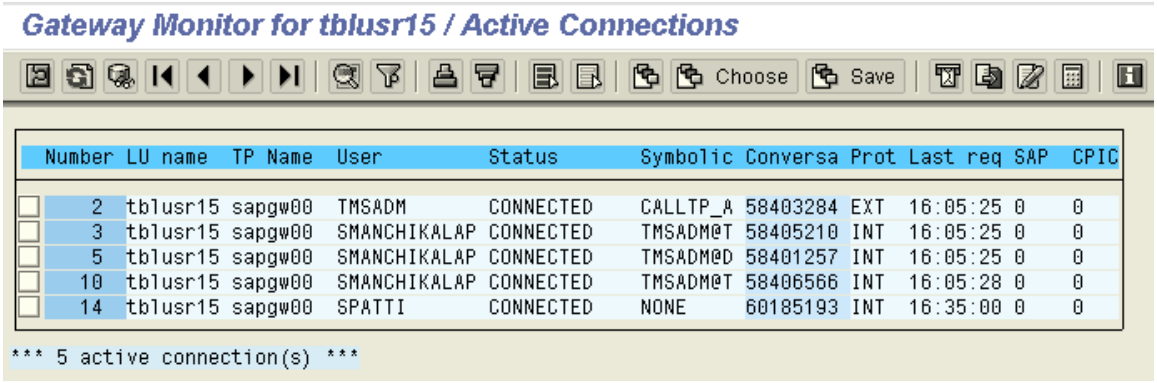
You will be able to figure it out.

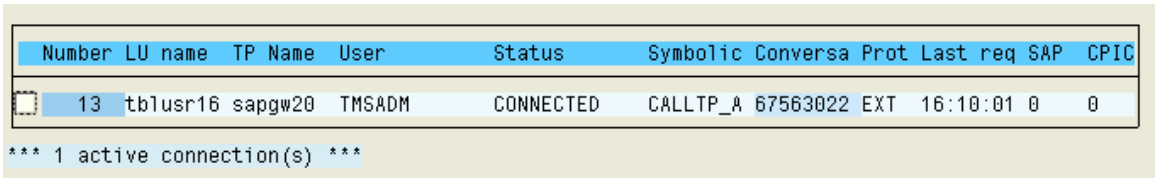
For your reference , the following notes are recommended

SAP notes: 176492, 617547, 511697, 502959, 110368

RFC Resources: **SARFC**

SMGW: Gateway Service Monitor





Daily System check

Daily system check is a major task for all SAP Basis Administrator to know all the system status and be proactive before any problems or failures occurs to System.

The general task include by going thru some of the major areas where a Basis can get information about the system and make note of it. It should be recorded or saved in daily date wise to refer later too.
Below is the list of **tcodes** to be executed to perform daily system check.

SM51: Check active server status (If any of the servers is not active checks the server problem and report it in checklist

SM50: Check the process status in each Server and Application Server

SM21: check the System log for each day and see the type of errors

ST22: check the no. of dumps generated and cause for dumps

SM12: check no. of locks during working hours

SM13: Check the system update status (it should be active)

DB12: check the data backup and Archive log backup status code

DB13: Check the daily system task running in calendar and look for any failures

DB02: Check the table space utilization and critical extents

SM59: Check all the RFC connection used for Business

DB01: For Dead lock entries.

SM37: check how many jobs are active and how many jobs were running during working hours

RZ04: check operation mode is ok

SP01: Check the spool request status

SP12: Delete all TemSe objects if anything found

ST06: Check the CPU utilization.

Post Installation Steps

After Installing R/3 into a new system, Basis has to perform some post Installation steps

before handing over to end users for operation. Post Installation steps make sure that System is ready, properly configured, Tuned and take load of user requests.
Below are some standard steps which has to perform immediately after the installation is finished.

1. Login to SAP system using DDIC/000
2. Execute SE06 , Select Standard Installation and click on execute Perform Post Installation Steps. Click yes on each next screen.
3. Execute STMS , to configure TMS configuration system. If there is no Domain controller in organization then configure this new system as DC.
4. Execute SICK to check for any Installation error , If anything is reported then trouble shoot those errors.
5. Execute sapdba or brtools to check/increase tablespace size if any is >90%
6. IF sapdba then check the tablespace utilization by selecting c. Tablespace Adminitration - c. Free space fragmentation of Tablespaces
7. List out all the tablespaces filled above 90%
8. Add datafiles to corresponding tablespaces to increase the tablespace size and bring the utilization of tablespaces below 80%
9. Login as SAP*/000
10. Execute SCC4 -> Click on change button -> Confirm the warning and click on new entries to create a new client.
11. Execute RZ10 -> Utilities -> Import profiles -> Of Active Servers
12. check the system log in SM21
13. Check any dumps in ST22
14. Login at command prompt using ora<sid> or <SID>adm
13. login to new client to perform a client copy using SAP*/<new client number> /PASS
14. Perform local client copy procedure to copy new client from 000 client.
15. Once client copy is over , login to new client using SAP* and password of SAP* which was used in client 000
16. Execute RZ10 -> Select Instance Profile -> check Extended maint -> click on change
17. Add parameter login/system_client parameter to make new <client_number> as default client to login.
18. Make changes to dialog process and background if you need to change than default one.
19. Save the profile and activate it.
20. Create one or two super users using SU01 with profiles SAP_ALL and SAP_NEW
21. Create some developer users if you can, else leave it.
22. Stop and Start SAP R/3 for profile parameter to be in effect.
23. Upgrade the kernel to the latest level
24. Upgrade the SPAM version to latest level
25. Apply latest support pack to components SAP_BASIS, SAP_ABAP,SAP_APPL and some other components if it is required.
26. Follow the kernel, SPAM and support pack application methods to perform point

25, 26 and 27.

27. Now system is ready to login and work for developers and administrator
28. Keep on changing the parameters , system configuration as per requirement later.
29. Run **SGEN** to regenerate the objects . In this process SAP keeps all the required objects access in SAP buffer. So that transaction accessing becomes faster.

SAP WEBAS : Architecture SAP WebAS One Instance

Fig-1 WebAS

SAP WebAS with Multiple Instanaces

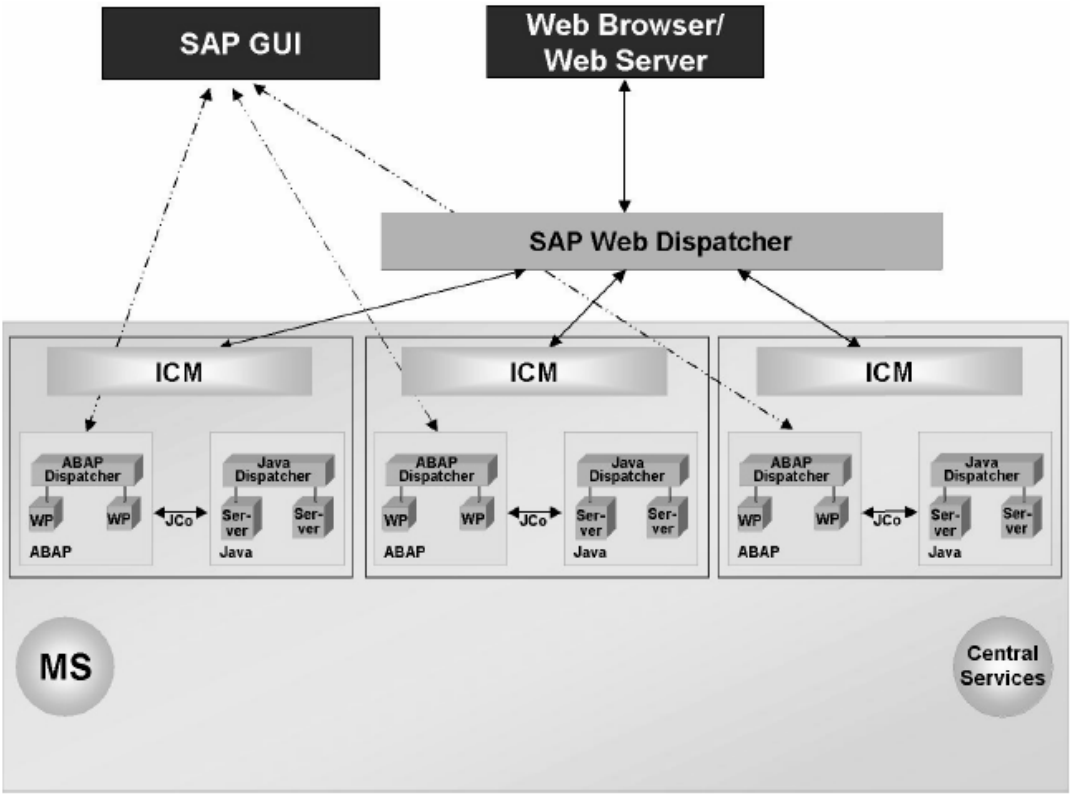


Fig-2 WebAS with Multiple Instanaces

Performance Check

---

1. Check GUI response time

To reduce the high GUI time it is important to know whether the high time consumption comes from:

a. High network time
b. High processing time on the front-end PC

2. Check Dialog Response Time

3. Check Database response time

4. Transaction SESSION_MANAGER response time , reduce number of entries

The load caused by the transaction SESSION_MANAGER, combined with the high roll in + wait time could indicate that the SAP Easy Access menu might not be configured correctly and should be tuned to improve overall response times. It is also possible that your users have been assigned disproportionately large user menus. We advise you to ensure there are a reasonable number of entries (nodes) in the User Menu. Refer to SAP Notes 203617 and 203994.

5. Expensive SQL Statement which causes load on the system

6. R/3 Memory management and Database parameter as per recommendations

7. check the design of online redolog files (if oracle)

8. Check there is enough space in tablespaces and disks to allow growth of data

9. Ensure Backup and Archive strategy meets the SAP standard.

10. Consider shifting Background jobs from daytime to night time if your business permits

11. Always be upto date with Kernel, SPAM and Support packs

12. Check the performance for all Dialog, RFC,SPOOL, HTTP , and highly impacted TCODES

SAP BASIS TROUBLE SHOOTING

Scenario 1: User complaints that he is not able to login to the system

- Ask what is the error he is getting and collect some more information about the error
- Try to login to system by yourself and make sure SAP is up and running on that particular Server.
- If you get “connection refused message” or not able to login to SAP then:

a) Login to SAP System at OS level using <SID>adm

sidadm> **ps -ef | grep dw**

(to check SAP service is up or not (dw = dispatcher work process))

sidadm> **ps -ef | grep ora** (to check if Oracle is up or not)

- If both of them are not running, check with the team if any maintenance is in progress
- Check your outlook mail or message if any maintenance of server mail is there?
- If not, try to bring the SAP server up and later investigate why the system went down.

Login as <SID>adm -->**startsap** (It starts both oracle and sap services)

- If sap does not start due to oracle processes down
  Check if oracle listner is running or not
  >**ps -ef | grep lsnrctl**
  OR login as ora<SID> at os level
  orasid >**lsnrctl status**
- If Listener is not running, start Listner with following command
  orasid>**lsnrctl start**
- now start the database manually --- >
  orasid>**sqlplus "/ as sysdba"**
  SQL> **startup**
- Go to the <SID>adm screen and start the sap using following command
  Sidadm>**startsap r3 Or startsap**

Now inform the users that SAP server is up and running and can start their work.

b) Now database is running, but SAP is not starting up

- go to <SID>adm screen
  sidadm>**R3trans –d**
  look for 0000 return code(RC),
  if RC = 0012 then read the **trans.log** file for detail error message

- Possible causes:
  filesystem full : Check the following Filesystems
  i) **df -k | grep /usr/sap** (alter if it is 100% full)
  ii) **df -k | grep sapdata** (check all the filesystems are ok. below < 100%)
  iii) **df -k | rep oraarch**(check if it is 100% full)

- If /usr/sap is 100%,
  i) check the (core) dumpfile at **/usr/sap/<SID>/DVEBMGS<SN>/work** directory
  look for file "core" and delete it
  ii) Check the background job log file at
  /usr/sap/<SID>/sys/global/<clientno>JOBLG
  If any old joblogs are not needed then delete them to cleanup.

- If **sapdata** is full, increase the filesystem by asking the system administrator or unix administrator
- If **oraarch** is full, move the archivelog files from /oracle/<SID>/oraarch to a different location or run **brarchive with -sd** option

<u>Scenario 2:</u> User complaints that he is not able to login to SAP system. Login screen is in hanging position. No error message

- Try to login to SAP system by yourself
- If your login screen also hangs, then it is assumed that all the dialogue work processes in the **particular application server** are busy or in running condition.
- To check the processes status, login to Application server using <SID>adm at OS level
  -- > **cdpro** (or cd /usr/sap/<SID>/sys/profile)
  -- > **dpmon pf =<instance_profile_name>**
  - select m -> Menu
  - select l -> Work Process Admin Table
  - Check for long running process and the username
  - Kill the work process after informing to user
- After killing the work process, if it doesn't release work process, then as final solution, do the following:

Stop and start only SAP on partcular app server. # **stopsap r3**
Note) Stop SAP on the particular application server.
Inform the user when the system is up

Example:

C:\usr\sap\S25\SYS\profile>dpmon pf=S25_DVEBMGS25_s007
Dispatcher Queue Statistics
==========

Typ	now	high	max	writes	reads
NOWP	0	7	2000	6770	6770
DIA	0	5	2000	2016	2016
UPD	0	1	2000	1	1
ENQ	0	0	2000	0	0
BTC	0	1	2000	1	1
SPO	0	3	2000	449	449

```
+------+--------+--------+--------+--------+--------+
| UP2 |     0 |     0 |   2000 |     0 |     0 |
+------+--------+--------+--------+--------+--------+


max_rq_id            7645
wake_evt_udp_now       0

wake events            total  8657,  udp  6912 ( 79%),  shm  1745 ( 20%)
since last update      total  8657,  udp  6912 ( 79%),  shm  1745 ( 20%)



   q - quit
   m - menue

--> m

   Dispatcher-Monitor-Menue
   ------------------------
   d - dispatcher queue statistics
   p - work-process-admin-table
   l - work-process-admin-table (long)
   t - trace level/components for wp
   w - wp_ca blocks
   a - appc_ca blocks
   m - mbuf status
   v - tm_ad dump
   q - quit

-->



No Ty.    Pid Status  Cause Start Err Sem CPU    Time
Program  Cl  User   Action                    Table
 0 DIA     1332 Wait          yes     0   0             0
 1 DIA     1552 Wait          yes     0   0             0
 2 DIA      856 Wait          yes     0   0             0
 3 DIA     1452 Wait          yes     0   0             0
 4 DIA     1904 Wait          yes     0   0             0
 5 DIA     1912 Wait          yes     0   0             0
 6 UPD     1920 Wait          yes     0   0             0
 7 UPD     1928 Wait          yes     0   0             0
 8 UPD     1936 Wait          yes     0   0             0
 9 ENQ     1944 Wait          yes     0   0             0
10 BTC     1952 Wait          yes     0   0             0
```

```
11 BTC      1960 Wait           yes      0    0              0
12 SPO      1968 Wait           yes      0    0              0
13 UP2      1976 Wait           yes      0    0              0
14 UP2      1984 Wait           yes      0    0              0
```

s - stop workprocess
k - kill workprocess (with core)
r - enable restart flag (only possible in wp-status "ended")
q - quit
m - menue

➔ k

Useful SAP System Administration Transactions

```
AL01  SAP Alert Monitor
AL02  Database alert monitor
AL03  Operating system alert monitor
AL08  Users Logged On
AL11  Display SAP Directories
AL12  Display table buffer (Exp. session)
BD64  Logical System Conversion
DB01  Analyze exclusive lock waits
DB02  Analyze tables and indexes
DB03  Parameter changes in database
DB12  Overview of Backup Logs
DB13  Database administration calendar
DB14  Show SAPDBA Action Logs
DB17  All Database Check Conditions
DB20  DB Cost-Based Optimizer: Tab. Stats
PFCG  Activity Group
PFUD  Authorization Profile comparison
RLOG  Data migration logging
RZ01  Job Scheduling Monitor
RZ02  Network Graphics for SAP Instances
RZ03  Presentation, Control SAP Instances
RZ04  Maintain SAP Instances
RZ06  Alerts Thresholds Maintenance
RZ08  SAP Alert Monitor
RZ10  Maintenance of profile parameters
RZ11  Profile parameter maintenance
RZ12  Maintain RFC Server Group Assignment
RZ20  CCMS Monitoring
RZ21  Customize CCMS Alert Monitor
SA38  ABAP/4 Reporting
SALE  Display ALE Customizing
SAINT Plug-in Installation
SARA  Archive management
SCC1  Client Copy - Special Selections
SCC2  Client transport
SCC3  Client Copy Log
SCC4  Client administration
SCC5  Client Delete
SCC6  Client Import
```

SCC7 Client Import – Post Processing
SCC8 Client Export
SCC9 Remote Client Copy
SCCL Local Client Copy
SCMP View / Table Comparison
SCOM SAPcomm: Configuration
SCON/SCOT SAPconnect - Administration
SCPF Generate enterprise IMG
SCPR1 Customizing Profiles : Maintenance Tool
SCUA Central User Administration : Distribution Model Assigment
SCUG Central User Administration Structure Display
SCUL
SCUM Central User Administration Field Selection
SCU0 Table Analyses And Comparison
SE01 Transport and Correction System
SE02 Environment Analyzer
SE03 Transport Utilities
SE06 System Initialization
SE07 Transport System Status Display
SE09 Workbench Organizer (Initial Screen)
SE10 Customizing Organizer
SE11 Data Dictionary Maintenance
SE12 Data Dictionary Display
SE13 Maintain Technical Settings (Tables)
SE14 Convert Data Dictionary tables on Database Level
SE15 Repository Info System
SE16 Display Table Content
SE37 ABAP Function Modules
SE38 ABAP Editor
SE51 Screen Painter
SE80 Object Navigator
SE91 Maintain Messages
SE93 Maintain Transaction Codes
SICK Installation Check
SLG0 Application Log: ObjectMaintenance
SM01 Lock Transactions
SM02 System Messages
SM04 User Overview
SM12 Display and Delete Locks
SM13 Display Update Records
SM14 Update Program Administration
SM21 System log
SM23 System Log Analysis
SM30 Call Up View Maintenance
SM31_OLD Old Table Maintenance
SM35 Batch Input Monitoring
SM36 Batch request
SM37 Background job overview
SM38 Queue Maintenance Transaction
SM39 Job analysis
SM50 Work Process Overview
SM51 List of SAP Servers
SM58 Asynchronous RFC Error Log
SM59 RFC Destinations (Display/Maintain)
SM66 System-wide Work Process Overview
SMGW Gateway Monitor
SMLG Maintain Logon Group

```
SNRO  Number Range Objects
SNOTE:  SAP Note Assistant
SOY5  SAPoffice: Inbox overview
SP01  Spool Control
SP02  Display output Requests
SP12  TemSe Administration
SPAD  Spool Management
SPAM  SAP Patch Manager (SPAM)
SPAU  Display Modified DE Objects
SPDD  Display Modified DDIC objects
SPHA  Telephony administration
ST01  System Trace
ST02  Setups/Tune Buffers
ST03  Performance, SAP Statistics, Workload
ST04  Select activity of the databases
ST05  SQL Trace
ST06  Operating System Monitor
ST22  ABAP Runtime Error Analysis
ST22  ABAP/4 Runtime Error Analysis
ST62  Create industry short texts
STAT  Local transaction statistics
STMS  Transport Management System
STUN  Performance Monitoring
SU01  Maintain User
SU02  Maintain Authorization Profiles
SU03  Maintain Authorizations
SU10  Mass changes to User Master
SU11  Maintain Authorizations
SU12  Mass Changes to User Master Records
SU2   Maintain User Parameter
SU20  Maintain Authorization Fields
SU21  Maintain Authorization Objects
SU22  Auth. object usage in transactions
SU24  Disables Authorization Checks
SU25  Imports SAP Check Indicators defaults
SU53  Display check values
SUPC  Profiles for activity groups
SUPO  Maintain Organization Levels
SUIM  Repository Info System
SWDC  Workflow Definition
SXDA  Data Transfer Workbench
TU02  Display Active Parameters
USMM  Customer measurement
```

SAP Questions with Answers

Interview Questions:

1. What Operating System you worked on?
A. UNIX - Sun Solaris8, 9,10

2. Which Databse you worked on?
A. Oracle 8i
If you are putting 4,5, years experience, then put 8i.

From 9i on wards there is server parameter file
Oracle 9i with patch 9.2.1.0.7

RMAN 9i is used for recovery purpose

3. You cannot make changes in init.ora parameter file, you have to make them in spfile-binary file

4. What is your daily task?
Check system logs, processes overview, database performance, monitor background jobs,
Check the servers; check the table space growth, backup, check backup log details.

5. File systems

6. If lot of achieve logs are getting generated in minutes, then what do we do?
A. Increase the redo log file size

7. What is ora-01555 error?
A. This is also called read inconsistency error
This is called 'snapshot too old'
Create some more roll back segments to avoid this error.

8. What is your database size?
A. Start from 300 GB

9. What is your database growth?
A. Monthly 20 GB or 30 GB growths

10. How many users you have?
A. 300/400 users (including developers, basis guys, security guys, end users)

11. What are the modules configured?
A. We have FI/CO, HR, SD configured in different clients

12. What system landscape you have?
A. We have R/3 enterprise, 4.6, B/W Server environment.
4.7 is nothing but enterprise

13. BW Versions - BW 3.0B, BW3.1C.
A. Current BW version is 3.5.

14. What is your team size?
A. Basis we have 4 and security we have 2 in current project. (10 servers total)

15. When SAP system starts, which profile it reads first?
A. Start profile

16. If I want to modify any system parameter system wide, which profile I will use?
A. Default profile

17. What is a client?

18. What are client dependent and client independent?

19. How to protect a client?
Change the client properties into “No change mode”

20. Tell the steps for a local client copy

21. If client copy fails, what do you check first?

22. How many client copies you perform regular basis?
A. Depends on business requirements. It is not a daily task or regular task?

23. Tell something about client export

24. What do you check in DB02?
A. Table space utilization, space critical objects, and table space growth

25. What is your action, if any space critical objects are there?
A. Go to DB02, Click on space critical objects, then note down the objects, go to sapdba, go to Reorganization (option d), then use option b-->alter/show extent
-->Resize the extents (take the recommended value)

26. What is a SAP Scheduler?
A. DB Calendar (DB13)

27. How do you check the backup log?
A. SAP Level - DB12
At operating system level (log in as <SID>ADM)
goto /oracle/<SID>/sapbackup
#tail back<SID>.log

28. What file is responsible for SAP BACKUP?
A. init<SID>.sap

29. What is your backup strategy?
A. We do daily online backup on all servers and weekly offline backup on DEV and QAS.

Hint: We take PRD offline, if any maintenance needs to be done, with prior notification.

30. How to check whether SAP is running or not On Unix level?
A. # ps -ef|grep dw (checks is SAP is running or not)
ps -ef|grep ora_ (checks oracle status)

31. While starting SAP, I get an error, How to check the problem?
A. login as <SID>ADM
#**R3trans -d**
should return you 0000 returncode
if it is 0012, then look for trans.log file for detail error.

32. What is the use of operation mode; how do you configure it?

33. How to check the SAP standard jobs?

34. What is your transport domain?

35. How to configure transport domain?

36. What is transport route?

37. What is transport layer?

38. What method you use for TPs?

39. Steps for importing at command level:

1. Login to target system at OS level using <SID>ADM

2. type #addtobuffer<DEVK900012><SID> (hit enter)

   it should provide you return code 0

3. type #import <DEVK900012> client<clientnumber><SID> U1

4. Now look for return code=0(successful) here return code (rc)
   return code=4 (warning)
   return code=8(problem with objects, consult tp owner)
   if rc>8 then look for problem with datafile and cofile
   check for permission
   check data creation, size

40. Steps for upgrading kernel

41. What is the difference between SAP Note and Support Pack?

42. How to install Add-ons?
A. Use SAINT

43. Read Spool administration

44. Read offline backup and online backup

45. What is enqueue process?

46. What is the purpose of U1 and U2 work processes?

47. If RFC fails, what will I look for?
    # Check in SM59
    # ps –ef|grep rfc

48. Which user is used when you create RFC?

49. How do you solve ABAP dumps?
A. ST22

50. How do you get latest kernel, support packs, Addons?

51. What systems u installed?
A. R/3 4.7, BW 3.0B, BW3.5, CRM solution manager

52. What is WAS?
    Das will send us mail

53. What is SAP Net weaver?

54. Any idea about ECC5.0?

55. If you forget superuser passwords, what do you do?
Das will send us mail

56. What is central Instance?

57. Work on t-code SE16.

1. In SAP4.7 what is the schema name used?
SAP<SID>

59.

General SAP Basis Questions

1. How to lock the client?

2. What to do if you forget the password of DDIC ,SAP* and any superuser password ?

3. Can I change my domain controller to an existing environment ?
If yes, then how

If no , then why

4. How many background processes are reserved for Class A background process ?

5. what is the exact command for performing an online backup using brtools?

6. which version of BRTOOLS you use ?

7. what are the extensions for patch files and where should they be placed during patch application.

8. which system parameter defines total extended memory size ?

9. If system generates a dump telling TIME_OUT , then what will be your action to solve this ?

10. If system generates dumps TSV_NEW_PAGE_ALLOCATED , then where is the problem lying ?

11. When the work process enters into PRIV mode ?

12. what is your role if work processes enters into PRIV mode ?

13. What is the latest patch for SAP ? did you apply the latest patch ? Why did you apply that ?

14. Did you perform any client refresh ? Why did you do that ?

15. what are the precautions to be taken care during client refresh ?

16. how frequent you perform client refresh ?

17. How do you check the work process details, history and what exactly it is doing ?
    a. at sap level

    b. at OS level

18. during online backup of system , backup got terminated. Now after analyzing the problem and correcting the problem, you are again performing a online backup.

 But backup again terminates and reports "Tablespaces are already in Backup mode"

 What will you do here to perform an online backup ?

 Tell the exact steps here ?

Ans: Bring all the tablespaces into end backup mode
     login as orasid
     #sqlplus "/ as sysdba"
     SQL> selct * from v$backup;
     SQL>Alter tablespace <tablespace_name> end backup;
     SQL> select * from v$backup (make sure none of the tablespaces listed in backupmode)

now got to your backup screen/utility and run the backup.

19. Which file is read by DB13 when scheduling jobs ?

20. Can I use my own parameter file to perform backup or BRTOOLS funcion ?

21. What is the procedure when you want to take the Production Server down ?

22. how do you identify that this is your prodution server ?

23. What if you cannot transport a request at SAP level ?

24. You have 4 systems in a SAP Transport domain. 3 systems are defined in the Transport Route . But you need the transports in fourth system . How can you perform this ?

25. How do you get to know that your system is down ?

26. Which alerting system you are using ?

27. Do you use any tool for alerting ? What kind of alert you maintain in that tool ?

28. Does SAP provides any alerting method ?

29. Do you use any backup software to perform your backup ?

30. What is your backup strategy ?

31. what is change control ? Have you ever participated in that ?

32. What do you do when there are some dead locks in your system ?

33. How do you check there are some dead locks in your system ?

34. if there some locks for 2 days , what is your action in that ?

35. You check in SM13 and saw that update is not active , then how do you proceed ?

36. I have a BW350 system and I am trying to connect to server from my desktop.But when I login I don't see all the screens and some are in black . Where is the problem lying ?

37. I got 50 printers to add into SAP landscape. what is the best way to configure printers in all the systems ?

38. How do you delete spool requests from the system ?

39. Have you heard about logical system conversion ? What is that ? When do you use it ?

40. One consultants comes and says , I want to modify some changes into production system. But I am not able to perform any modifications in the system . can you please help me ?

What is his problem ? Why he is not able to change anything in production system ?

What is your role in this ?

41. What is a source system ?

42. What is the funtion of control file ?

43. How do you backup a control file ?

44. what are the parameters files used by SAP ? list them

45. What is a spfile in oracle ?

46. if database is in mount state , can I start my SAP and allow users to work ?

47. What happens when you issue shutdown immediate command ?

48. If I want to change one parameter at oracle database level in oracle 9i then how I will do it ?

49. Which situation you need DB copy ?

50. how frequent you perform DB copy ?

51. Have you ever worked on Netweaver ?

52. Whats your thought about Netweaver ?

53. What is an infocube in BW ?

54. What is an ODS in BW

55. what if the load fails in BW ?

56. Have you ever upgrade SAP ?

57. Can you briefly explain the upgrade steps you performed

58. what if I get a tp return code of 8 ?

59. What if I get tp return code of >8 ?

60. do you have any standby database ? What does a standby database do ?

61. What is a Tranport Proposal ? Have you worked on that ?

62. How your transport approval procedure works in your company ?

63. How do you monitor gateway service ? Check tcode SMGW

64. What are the precautions you take before applying support packs ?

65. How do you know what are the expensive tcodes ?

66. how do you solve if there is high GUI time in server ?

67. if the buffer hit ratio < 90% and lot of swaps are occuring in the system , then which area you have to look for and what action you will take on this ?

68. If the CPU utilization is maintaining a >95% utilization on server for last few hours , then how do you start your investigation ?

67. How to check if any particular process you want to check whether it is running or not at OS level ?

69. How to start and stop OS collector at OS level ?

70. some Transport Requests are already in Production import queue . But some transports are not needed to import to production . How do you resolve this situation ?

71. What are the files get created during transport Release ?

72. How many types of Transport requests are there ?

73. What do you know about transport of copies ?

74. Can I install mulitple SAP instances in a single host ? If yes then how ?

If no, then why ?

75. I have 5 application servers. I want to set a default client for the system .
Which parameter I will set and where ?

76. To perform a client copy which user profile is needed ?

77. Have you performed remote client copy ? what are the prerequisites before performing a remote client copy ?

79. Have you ever performed BW performance Tuning ? What did you do in that ?

80. What is an OLAP cache in BW ?

81. What are the two equiv users created at oracle level for <SID>adm and ORA<SID> ?

82. If one background process took long time to run other than the usual time , what are the areas you will investigate other than SM37 ?

83. Q. What is the diff between system/DB Copy and system/DB refresh ?

system copy
==========

When you copy the whole database from one database to another that is called database copy/system copy.
IF the new data is same from old to new , then this is called system copy like building a new system copying data from a running system.

System Refresh

The refresh itself says that the old data is getting refreshed by new data

That happens when ?

When you copy the production database to Quality database. The whole production database goes to Quality and replaces whole QAS system.

This occurs generally every 6 months or 1 year.

The same DB copy/ System copy method but it is called system/DB refresh because it is bringing the new data from Production and refreshing data in QAS. So QAS has now new data.

The same procedure

I think I have already explained you about client copy and Client refresh diff

The same fundamentals

SAP Statandard Jobs/ Reorganization Jobs
OSS Note: 16083

SAP NetWeaver :

SAP NetWeaver is a web-based, open integration and application platform that serves as the foundation for enterprise service-oriented architecture (enterprise SOA)and allows the integration and alignment of people, information, and business processes across business and technology boundaries. It utilizes open standards to enable integration with information and applications from almost any source or technology. SAP NetWeaver is the foundation of SAP xApps and mySAP Business Suite solutions, and also powers partner solutions and customer custom-built applications.

SAP NetWeaver Knowledge Center:

IT Practices and IT Scenarios

IT practices are a way of looking at the SAP NetWeaver platform to focus on key business goals: the need to combine different integration technologies, to develop composite applications leveraging existing system investments, or to build new business processes in a flexible way.

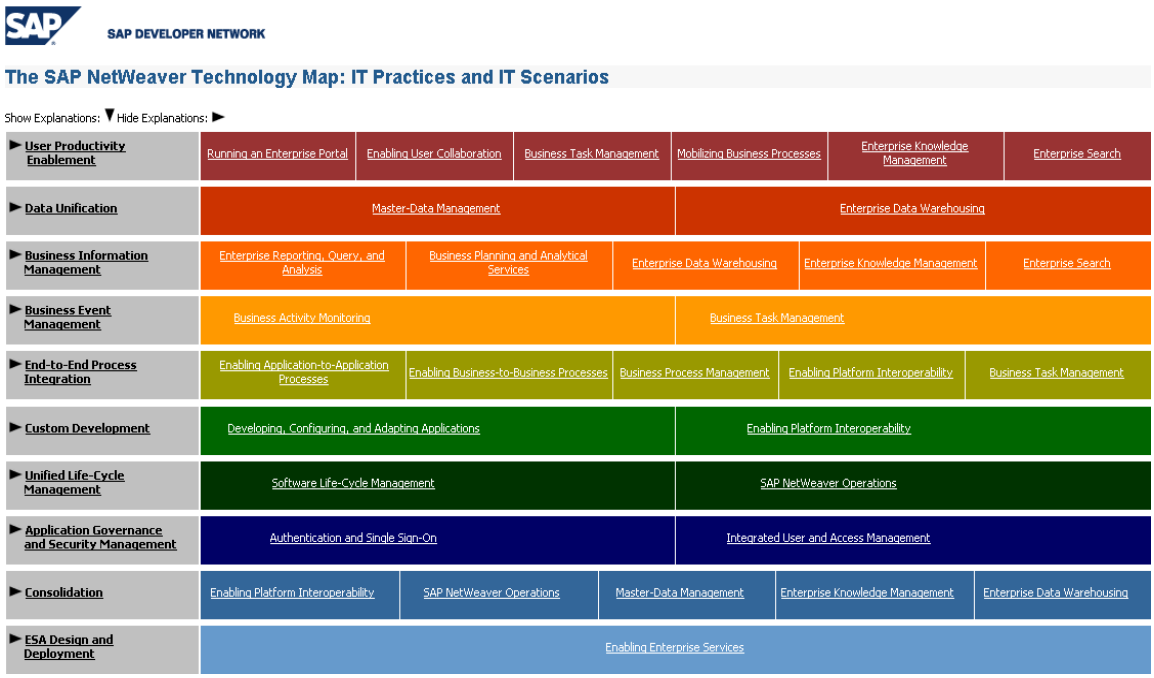
To meet these business goals, SAP NetWeaver provides predefined IT scenarios, introduced fully with SAP NetWeaver 2004s. By implementing IT scenarios, customers can adopt core functionality of SAP NetWeaver in incremental phases. Each practice can be broken down into one or more IT scenarios, providing organizations with a process-oriented approach for making the best use of SAP NetWeaver.

Visit the IT Practices and IT Scenarios area on SDN to learn more about the business goals targeted by the different IT practices and the IT scenarios defined within the practices.

SAP NetWeaver Components

SAP NetWeaver platform capabilities for releases prior to SAP NetWeaver 2004s are delivered by the following components, each of which anchors an active community and knowledge repository on SDN:

- SAP NetWeaver Application Server (WebAS)
- SAP NetWeaver Business Intelligence (BI)
- SAP NetWeaver Exchange Infrastructure (XI)
- SAP NetWeaver Master Data Management (MDM)
- SAP NetWeaver Mobile
- SAP NetWeaver Portal (EPP)
- Knowledge Management (KM)
- SAP Composite Application Framework



Solution Manager

The SAP Solution Manager supports you throughout the entire life-cycle of your solutions, from the Business Blueprint to the configuration to production processing. It provides central access to tools, methods and preconfigured contents which you can use during evaluation, implementation and operational processing of your systems.

Tcodes
SOLUTION_MANAGER
SMSY

Features

Implementing and Upgrading SAP Solutions

- Central access to all tools for your project (Project Administration, Business Blueprint, Configuration, Test Workbench, create Group Rollout templates)
- Central management of all information for your Project (roadmaps, system landscape, project documentation)
- Compare and synchronize customizing in different SAP components

Solution Monitoring

- Central System administration
- Analysis of your system landscape with Service Level Reporting
- Real-time System Monitoring
- Business process monitoring

Services and Support

- Access to programs and Services to monitor and optimize the performance and availability of your system landscapes, and minimize risks when running your systems

Service Desk

Solution support with workflow to Create and Process Problem Messages

Change Management

Manage change requests, with workflow to trace and audit changes and transports in your system landscape with Change Request Management.

Implementing and Upgrading SAP Solutions

This business scenario performs the following functions on business processes and scenarios in a project:

- describe and document,
- configure
- test

The SAP Solution Manager provide central access to all tools, methods, documents and other data required in the implementation environment. You can use implementation contents delivered with the SAP Solution Manager and regularly updated, and adjust it to your requirements.

The Implementation contents comprise predefined scenario, process and configuration structures for SAP solutions and applications, with implementation-relevant instances of general documentation, preconfiguration, BC Sets and test cases. At the end of the implementation project, the implemented business scenarios and processes and system information is put in a customer-specific repository (Solution Directory), where they are available for production processing.

For Upgrade Projects the SAP Solution Manager supports both:

- restarting an upgrade project
- perform an upgrade project based on an implementation project

Procedure

- Project preparation
- Blueprint/Upgrade Blueprint
- Configuration/ Upgrade Configuration
- Customizing Synchronization
- Test Management
- E-Learning Management
- Group Rollout

Central System Administration

The central system administration manages tasks for the systems in your solution, centrally. The preconfigured view of your tasks and the logical collection of the administration tasks help you to handle open tasks.

The system generates component-specific administration tasks, depending on the SAP system type.

You can:

- Set-up tasks for the systems in your solution
- Perform tasks
- Create task logs
- Monitor task plans
- Monitor task status

Setup Central System Administration

Prerequisites

You have:

- Created a solution landscape.
- Set up the RFC connections between the SAP Solution Manager and the satellite systems in your solution landscape.
- Assigned the Solution Monitoring roles to the users.

Steps

1. Start the transaction code SOLUTION_MANAGER.
2. Choose Solution Monitoring ® Administration in the Operations Setup area.
3. Choose Central System Administration.
4. You go to the Change Mode: Central System Administration session.
5. Perform the following tasks in the session, as required

- Choose Administration and Monitoring Work Area
- Task View Master
- Task Description
- Report Content
- User-Defined Task Master
- Copy Customizing
- Check RFC Destination
- Customizing Task Log Book and Task Log History
- Specify system data and initially setup tasks
- Cover Page

System Monitoring

- You have created a solution landscape.
- You have set up the RFC sonnections between the SAP Solution Manager and the satellite systems:
- You have set the Assign RFC Dest. for System Monitoring flag in the System Landscape (transaction SMSY) to generate the RFC connection.

Proceed as folows:

- Choose the SAP Solution Manager system of your landscape components.
- Select a row.
- Generate your RFC connection in the Clients tab.
- Set the Assign RFC Dest. for System Monitoring flag.
- You have entered all required data about Load Balancing in the Solution Manager System Landscape (transaction: SMSY)
- Choose the SAP Solution Manager System of your landscape components.

Activities

- Set-up system monitoring.
- Set-up user alerts.
- Display the alerts in the alert graphic.
- Reset alerts.

Set-Up System Monitoring

You want to specify which CCMS alerts are displayed in the SAP Solution Manager alert graphic.

1. Start the transaction SOLUTION_MANAGER.
2. Choose Solution Monitoring ® System Monitoring, in the Operations Set-Up area.
3. You go to an overview screen, from which you can go to the the system monitoring set-up in change mode, and call Best Practice documents.

4. Choose Set-Up System Monitoring. You go to Change Mode: Solution Monitoring.
5. Perform the following checks in change mode:

    - Select Active Systems
    - CCMS Check Connectivity
    - Copy Default Settings
    - Perform System-Specific and System Component-Specific Checks
    - Insert Additional Hardware Components (optional)
    - Insert Additional Software Components (optional)

SAP EarlyWatch Alert (EWA)

The SAP **EarlyWatch Alert** is a diagnosis which monitors solutions in SAP and non-SAP systems in the SAP Solution Manager. The system processes the downloaded data. You can display the report as an HTML document. You can also create the report as an MS Word document. You can use the documents as status reports. You can analyze and avoid potential problems with these reports.

SAP EarlyWatch Alert is the prerequisite for Service Level Reporting.

Prerequisite

- Set-up RFC connections between your satellite systems and the SAP Solution Manager system, and an RFC connection between the SAP Solution Manager and the SAP Service Marketplace.
- checked the availability of the tools required for the SAP Service sessions (in Add-On ST-A; ST-PI), with the report RTCCTOOL .
- assigned Solution Monitoring roles to the users.
- Set-up the Automatic Session Manager (ASM) in the Service Data Control Center (transaction: SDCCN), for all SAP satellite systems and the central SAP Solution Manager of your solution (SAP note 91488).
- Set-up your systems in a solution landscape in the SAP Solution Manager.

The following satellite system data is collected in a week, and automatically sent to the SAP Solution Manager:

- General component status
- System configuration
- Hardware
- Performance development
- Average response times
- Current system load
- Critical error messages and process interruptions
- Database administration

Activity

- You perform an SAP EarlyWatch Alert download manually.
- You create an SAP EarlyWatch Alert report, and examine the session details in the SAP Solution Manager.
- You save SAP EarlyWatch Alert in the SAP Solution Manager, retrieve an SAP EarlyWatch report from the repository, and archive services.

Reporting

You can use reporting to produce reports about system availability, Service Desk messages or Change Request Management, across solutions. You can also configure and display reports about SAP Solution Manager System data in the Business Warehouse.

Reporting uses data from the weekly EarlyWatch Alert reports and the system landscape maintenance (transaction: SMSY).

- Solution Reporting
- Bi Reporting

Service Data Control Center

- The Service Data Control Center supports the preparation and delivery of SAP service sessions, such as **Going Live** and **SAP EarlyWatch Alert**.
- The tool is intended primarily for SAP service engineers performing SAP service sessions, as well as for system administrators and other qualified customer employees working in their own SAP Solution Manager systems.
- The Service Data Control Center can supply multiple SAP Solution Manager Systems with data.
- The Service Data Control Center provides also a systematic way of collecting non-ABAP SDCC data through the Solution Manager Diagnostic tool.
- The Service Data Control Center automates all the operations and processes needed to transfer performance data from the system(s) in which the data was collected to the system in which the data will be analyzed.
- Performance data can be analyzed in your SAP Solution Manager system or in a system at SAP.
- The Service Data Control Center manages and logs all the tasks performed, and allows you to track the progress of each task.

SDCC Activation

Before you can work with the Service Data Control Center, it must first be activated.

You have to activate the Service Data Control Center only once after it has been installed.

- Start the SAP Solution Manager System Landscape (transaction SMSY).
- Choose Goto ® Solution Manager Operations ® Administration SDCCN.
- A dialog box is displayed showing the connected systems and their status.

- Systems in which the Service Data Control Center can be activated are indicated by an Activate icon. Systems in which the Service Data Control Center is already active are indicated by Execute icon in the Call SDCCN column.
- To add a system to the overview, choose Add.
- To activate the Service Data Control Center in a system, click on its Activate icon.
- When the Service Data Control Center is activated in a system, you can see the Execute icon.
- To access the Service Data Control Center in a system, click on its Execute icon.

When the Service Data Control Center is activated, it performs the following actions:

- Deschedules AUTO_SESSION_MANAGER (ASM), the background job for the old Service Data Control Center.
- Checks whether Customizing settings exist .

If no Customizing settings exist, default values are filled in automatically.

If settings already exist, they are left unchanged. Note that existing settings will not be overwritten.

- Creates the following two tasks (if they are not already available):

  Maintenance Package task

  This task performs all the steps needed to automate data collection for your services.

  The Maintenance Package task must be scheduled as a periodic task for the Service Data Control Center to work.

  Service Preparation Check (RTCCTOOL)

  The Service Preparation Check task serves as a reminder to run the Service Preparation Check (RTCCTOOL). You can use RTCCTOOL to check whether any action needs to be taken in the system, for example, whether you need to implement new SAP Notes or perform a transport.

- Activates the task processor.

  The task processor job checks whether tasks are available to be processed.

  To ensure the timely processing of all tasks the recommended frequency is ‘hourly’.

- Prompts you to create a new RFC destination (SDCC_OSS) to the SAP Support Portal (formerly called SAP OSS system).

  We recommend that you set up a new RFC destination with the name SDCC_OSS. The Service Data Control Center uses this RFC destination to communicate with the SAP Support Portal.

  For this to work correctly, the original RFC destination SAPOSS must be working. The SAProuter string used for the SAPOSS destination is used to set up the RFC destination SDCC_OSS

- Locks the old Service Data Control Center (transaction SDCC).

  This ensures that the transaction is not used unintentionally.

Change Management

Change Management in the SAP Solution Manager is aligned to the processes in the IT Infrastructure Library (ITIL), the de facto standard for service management. Change Management aims to perform changes economically, quickly, and with minimum risk.

Features

- **Maintenance Optimizer**

The Maintenance Opimizer leads you through planning, download and implementation of support packages and patches for your satellite system.

- **Manage change requests**

Change request management helps you carry out your (maintenance, implementation, template and upgrade) projects in the SAP Solution Manager

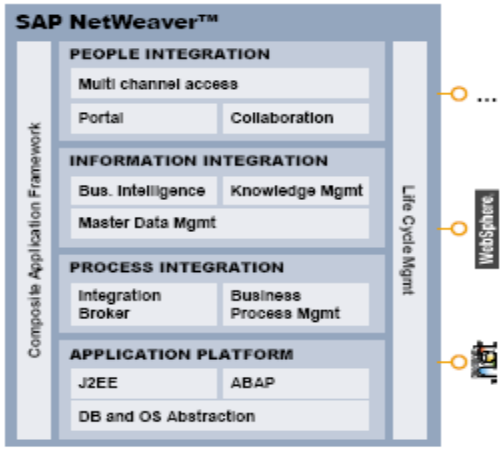
BW Administration and Performance Tuning

As part of SAP ABAP system maintenance and Administration, the tcodes we used so far are common to all SAP ABAP system as part of Basis Administration.
But for diff SAP products like BW, SRM, CRM etc, we have to take some extra activities or have to do some extra configuration and follow some performance tuning method inorder to keep system 24X7 active. Following are some immediate activities has to be done before releasing the server to users. As part of ongoing server maintenance you have to follow some extra points to well maintain your server.

1. Basic Netweaver Architecture
2. Source System Connection.
3. Monitoring Data Extractions : Resource Utilization
4. Query performance Tuning
5. OLAP Cache setting.
6. tablespace management
7. Memory management
8. SQL analysis
9. Load Balancing
10. Configuring Data packet Size
11. Building Indexes on Data source Tables
12. CPU/Memory utilization
13. Network Speed
14. Swap Analysis
15. Tuning Transfer and update Rules (BW Consultant's job)
16. Using Parallel Data load method or Splitting of data

Basic Net weaver Architecture

SAP NetWeaver™
Turning Enterprise Services Architecture Vision Into Reality



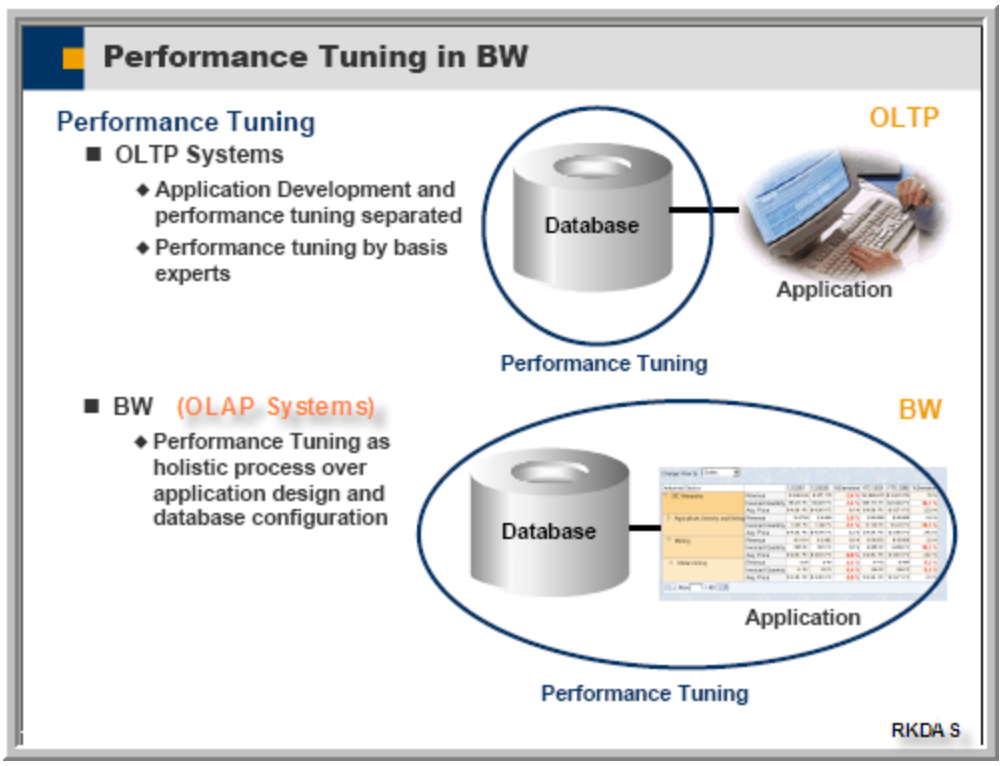
The open integration and application platform for TCO reduction

- Integrate people, information and processes...
- ... in 1 hub ...
- ... across technologies and organizations.
- Enterprise-scale Java and ABAP application platform
- .NET and WebSphere interoperability and extensibility
- Pre-configured with business content
- Adapters to non-SAP

RKDAS

BW Architecture

RKDAS



Source System Connection.

1. Make Sure RFC destinations between Source and Target systems are working fine
2. Check it thru SM59.
3. Login to Target i.e BW system using Super user
4. Execute Tcode RSA1
5. Click on Source system
6. from right pane right click in source at top
7. click Create
8. Select Automatic Creation (i.e. First Option in case of R/3 Source system)
9. Choose the RFC destination from the list for your Source system e.g. VS6800
10. Provide the password for background users
11. click Continue
12. Login to the R/3 system and the client you know with superuser and password
13. click Continue on the next screen
14. click check to make sure RFC destination is working fine
15. click Test connection to make sure R/3 System can reach to BW system
16. click on Back button when test finishes
17. Click on use
18. click Replicate As Well

Changing usernames for Soruce System and Target system

```
--------------------
   1. execute RSA1
   2. Click on Source System
   3. Select Settins ->global settings from TOp menu
   4. click on Gloabl Settings
   5. click on change icon
   6. Change the username in  "BW username ALE" tab
   7. hint:  This should be a user type "system" and should exist in
      the system
   8. Click Save
   Changing the ALE usertype for R/3
   ------------------------------------
   9. Login to BW system
   10.  Execute  SPRO
   11.  Click on SAP reference IMG
   12.  Expand "SAP Netweaver"
   13.  expand SAP Business Information Ware house"
   14.  expand "Links to other systems"
   15.  expand "Links between SAP system and BW
   16.  Click on Clock button of "Maintain Proposal for users in Source
      system"
   17.  Provide the username you are going to use to connect to BW
      system
   18.  Note:  This user should also be the background user and should
      exist in R/3 system as  user type  "System"
               e.g  ALEREMOTE
   19.  click Save
   20.  Click on new to create a Transport Request
   21.  Now data is saved.
   22.  From RSA1 screen click on Refresh button.
```

Performance Tuning

As part of performance tuning of SAP BW server some points has to be taken consideration as listed above.

- **Basis Parameter Setting**.

Set some parameter for SAP BW system as per OSS note 192658
Also BW system **doesn't need any up2** process and at least 2 up1 process

- **Database Parameter Setting**:

There are some database parameter setting has to be done for better performance.
For oracle OSS note 180605

- **Data load monitoring** : RSMO

Monitor the data load to SAP BW from the source system. Check if any load has been failed or reported by any BW consultant.

- **Sizing**

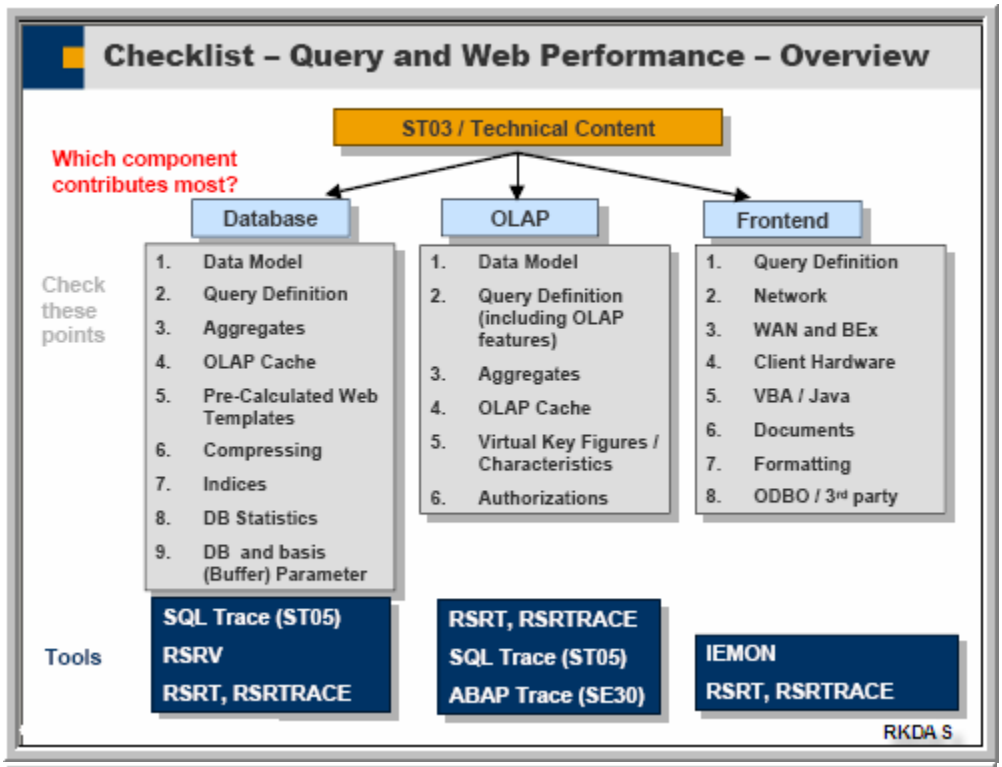
As SAP BW server works all the time in getting / extracting data from diff sources , server should have been properly sized in terms of CPU, Memory, Network card and huge amount of space.

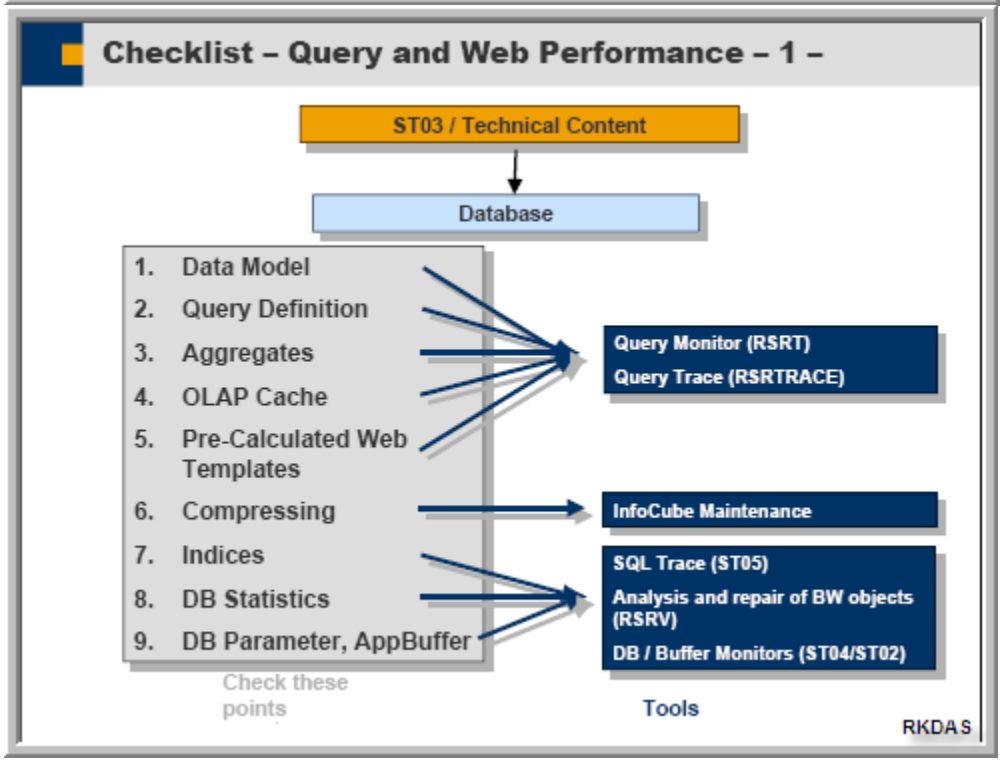
- **Tablespace:** During Data extraction or Data loading to SAP BW server BW server should have enough space in its tablespaces to carry in those loads

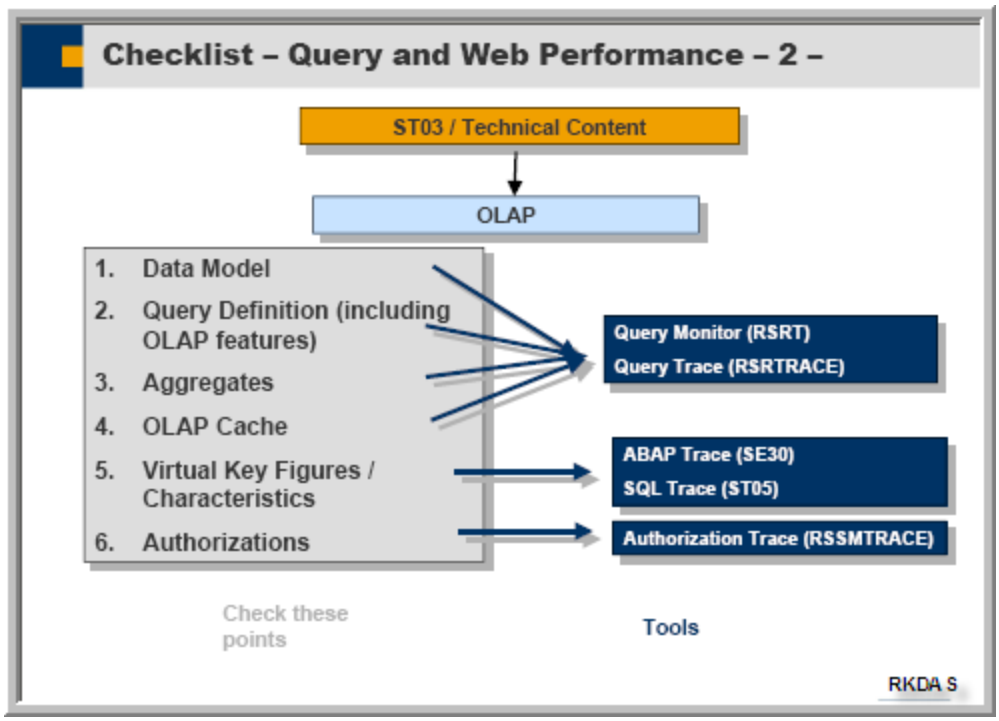
Also PSAPROLLBAK and PSAPTEMP should have enough space to perform the transaction if it runs longer.

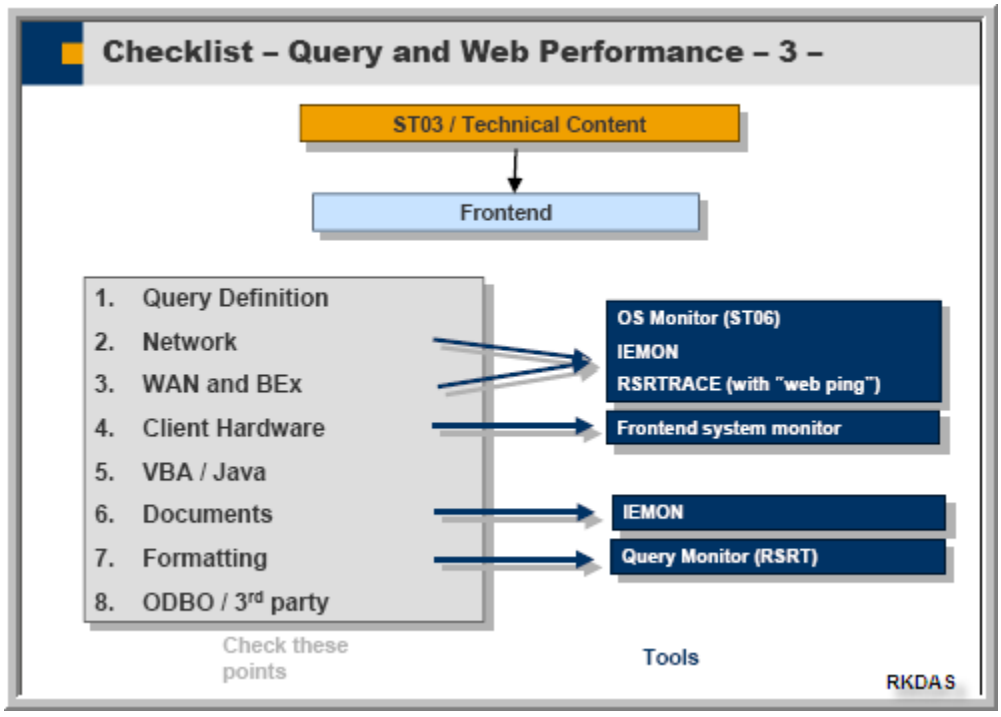
- **Performance of Reporting**. If Report displaying or fetching is slow then consider the follwing factors
    a. Aggregates
    b. Pre-calculated web templates
    c. OLAP cache
- **Reorganization of Log tables**
    a. SLG2
    b. EDI40
    c. RSDDSTAT tables
- **Check Unnecessary logs and traces that impact system performance**
    a. Authorization logs (RSSMTRACE)
    b. User trace (RSRTRACE)
    c. SQL Trace (ST05)
    d. ABAP Trace (SE30)
    e. Statistics Trace
- **Data packet Size**
    Packet size impacts in DB commit. So think of data packet size as per the OSS note
- **Load Balancing**:
    Distribute the load among diff servers. Don't load everything on one server to avoid CPU/memory bottlenecks
- **OLAP Cache Monitoring (RSRT)**
    OLAP cache stores query results and navigation statuses as highly compressed cluster data.
    OLAP cache reduces load on Database and Application server.
    OLAP cache size can be adjusted

Following Figures Explains which are can be checked at which situation.
Remember the fig well.


Checklist – Query and Web Performance – Overview
ST03 / Technical Content
Which component contributes most?
Database
OLAP
Frontend
Check these points
1. Data Model
2. Query Definition
3. Aggregates
4. OLAP Cache
5. Pre-Calculated Web Templates
6. Compressing
7. Indices
8. DB Statistics
9. DB and basis (Buffer) Parameter
1. Data Model
2. Query Definition (including OLAP features)
3. Aggregates
4. OLAP Cache
5. Virtual Key Figures / Characteristics
6. Authorizations
1. Query Definition
2. Network
3. WAN and BEx
4. Client Hardware
5. VBA / Java
6. Documents
7. Formatting
8. ODBO / 3rd party
Tools
SQL Trace (ST05)
RSRV
RSRT, RSRTRACE
RSRT, RSRTRACE
SQL Trace (ST05)
ABAP Trace (SE30)
IEMON
RSRT, RSRTRACE
RKDA S


Checklist – Query and Web Performance – 1 –
ST03 / Technical Content
Database
1. Data Model
2. Query Definition
3. Aggregates
4. OLAP Cache
5. Pre-Calculated Web Templates
6. Compressing
7. Indices
8. DB Statistics
9. DB Parameter, AppBuffer
Query Monitor (RSRT)
Query Trace (RSRTRACE)
InfoCube Maintenance
SQL Trace (ST05)
Analysis and repair of BW objects (RSRV)
DB / Buffer Monitors (ST04/ST02)
Check these points
Tools
RKDA S





Tcodes used for BW Administration and Tuning

RSRV
RSMO
SM50

SM51
RSA3 - Extract Checker
ST05
ST01
RSRTRACE
RSSMTRACE
SE30
STAT
ST06
ST02
ST04
ST03: Workload analysis
Find out the worst query causing the performance

RSRT: Query monitor

SM59: RFC from BW to R/3 System
SMLG: For load balancing
DB02: check if you have enough space
SICF: To activate http requests.

Enterprise Portal

1. Accesing Portal
2. UME configuration
3. Single Sign on configuration
4. Working with Visual Administration
5. Working with Config Tool
6. Wokring with Log Viewer
7. Applying patches in Portal
8. LDAP

Accessing Portal

After successfully installed the portal access the portal using following URL

http://<servername>:5000<instance_number>/irj/portal

username: j2ee_admin
password : use the password used while installation

UME Configuration.
After loging on to the portal , click on User Administration and UM configuration.

User management configuration is used for configuring user management engine to pull the users from LDAP or something like that

Enterprise Portal Single Sign on

Contents

Purpose

This guide will give you step-by-step instructions in configuring Single Sign-On with the SAP Netweaver Portal to the SAP Systems. Single Sign-On uses *SAP Logon Tickets* and helps streamline the user logon process while implementing strong security settings for the systems and network.

Prerequisites

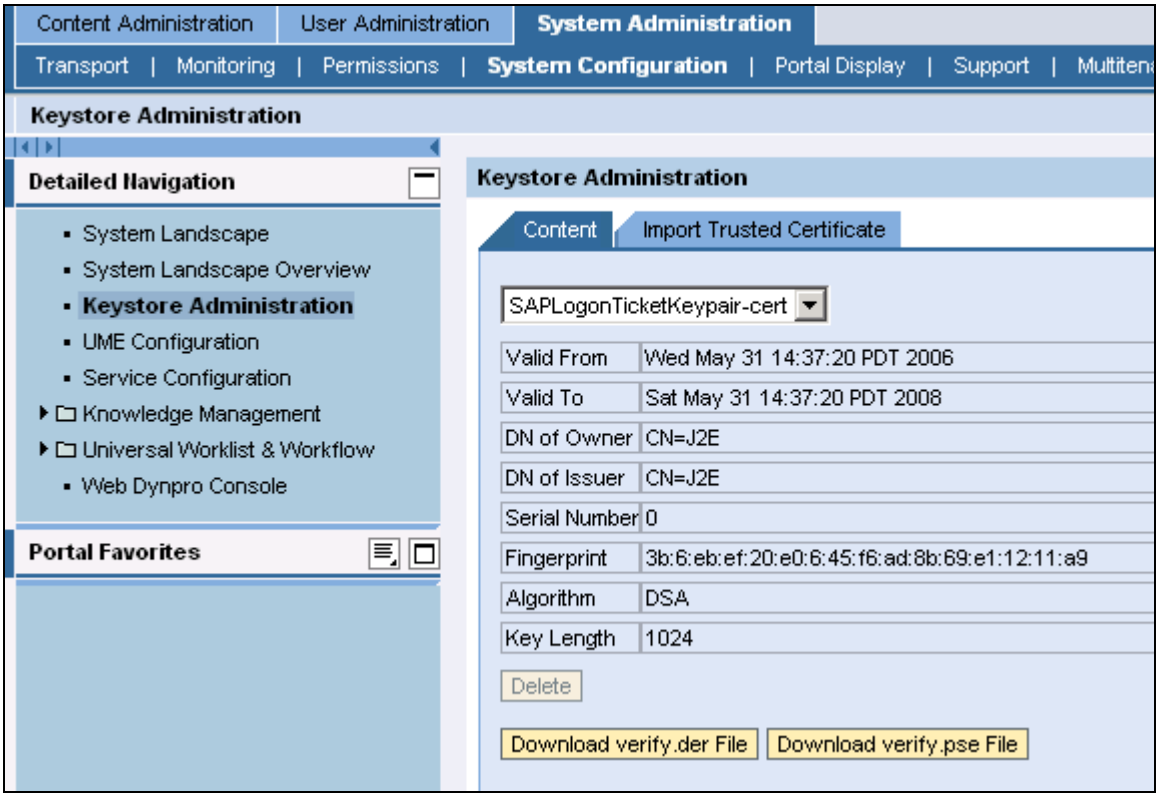
- SAP Netweaver Portal and the SAP Systems are in the same domain.

  If you don't have windows domain controller then configure one. Widnows domain controller configures ADS which is nothing but a LDAP server.
- SAP Systems registered in the portal according Building Block N04: General Settings.
- User has Administrator roles assigned.

Export Certificate from Portal

SAP Netweaver Portal	*System Administration → System Configuration → Keystore Administration*

1. Go to *System Administration → System Configuration → Keystore Administration*
2. Select *SAPLogonTicketKeypar-cert* from the drop list menu (default)



3. Choose *Download verify.der File* button.
4. *Save* file to a folder on your hard drive (i.e. *C:\Best_Practices\verify.der.zip*)
5. *Extract* the zip file and *save* the *verify.der* file to the hard drive (i.e. C:\Best_Practices\verify.der)

Create a System user in SAP system with Required Roles

Check the SAP system for the SAPJSP and required roles

1. Enter transaction **`SU01`**.
2. Choose *Enter*.
3. Enter **`SAPJSF`** in the *User* text field.
    a. Choose *Create* button 
4. Enter *a Last Name* in the required *Last Name* text field.

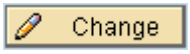
Roles

5. Choose *Roles* tab.
6. Enter SAP_BC_JSF_COMMUNICATION and SAP_BC_USR_CUA_CLIENT_RFC in the Roles table.
7. Choose Save button.

Logon Data

8. If prompted, Enter initial password under Initial password and Repeat password
9. Choose Save button

Check Profile Parameters

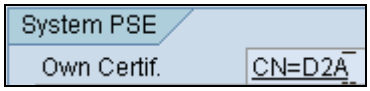
1. Enter transaction **`/nRZ10`**.
2. Choose *Enter*.
3. Choose the *Profile Browse* button  .
4. Choose your *Instance Profile*.
5. Choose *Extended Maintenance* radio button.
6. Choose *Change* button 

7. Make sure *login/create_sso2_ticket = 2* and *login/accept_sso2_ticket* is set to **`1`** else choose the *Create Parameter* button and create the parameter with their respective values.

Export / Import Certificates

Export SAP System Certificate

1. Enter **`/nSTRUSTSSO2.`**
2. Choose *Enter*.
3. Double-click "*CN= in the Own Certif* text field.



The Certificate data will appear in the Certificate section.

4. Choose *Export certificate* button  in the Certificate section and save to your hard drive (i.e. *C:\Best_Practices\)*

Import Portal Certificate

5. Choose *Import certificate* button  in the Certificate section.
6. Choose the *Browse* button in the *File path* text field and select the *verify.der* you exported from the portal.
7. Choose *OK* button.
8. Choose *Add to Certificate* List button 

9. Choose *Add to ACL* button 

10. Add the *Portal Instance* name to the *System ID* text field.
11. Add **`00`** to the *Client* text field.
12. Choose *OK* button.
13. Choose *Save.*

Create a JCo RFC provider in the J2EE Engine

1. Launch the *J2EE Visual Administrator.*
2. Double-click the *go.bat* file for the J2EE Visual Administrator (i.e. C:\usr\sap\J2E\JC00\j2ee\admin\go.bat
3. Select *Connect* button.
4. Enter the *Administrator password* in the password text field.
5. Choose *Connect.*
6. Expand *Server* → *Services* → *JCo RFC provider* node.

J2EE Visual Administrator	*Server ##* → *Services* → *JCo RFC Provider*

7. Choose *JCo RFC* provider node.
8. Enter values in the following tables:

Field name	**Field Entry**
Program Id	<Name of Program> (for example, **`sapj2ee_port`**. You

	will need it later)>
Gateway host	< (for example, **server.domain.com**)>
Gateway service	< (for example, **sapgw00**)>
Server Count (1..20)	Enter a *number from 1 to 20*

Field name	Field Entry
Application server host	< (for example, **server.domain.com**)>
System number	<(for example, **00**)>
Client	<(for example, **050**)>
Language	
User	*<user from step 2>*
Password	**<password from step 2>**

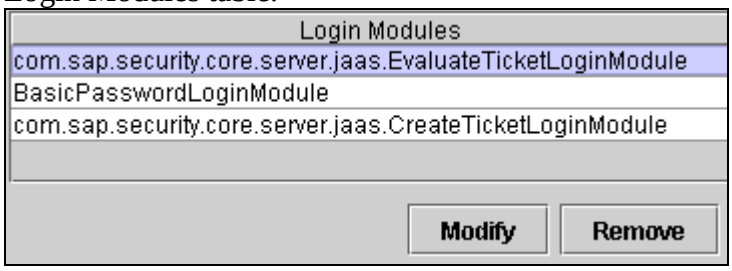
9. Choose *Set* button.

Add SAP System to Security providers list

1. Choose *Server ##* → *Services* → *Security Provider*

J2EE Visual Administrator	*Server ##* → *Services* → *Security Provider*

2. Choose *ticket* in the Components menu.
3. Choose *Edit* mode button 
4. Choose *com.sap.security.core.server.jaas.EvaluateTicketLoginModule* in the Login Modules table.

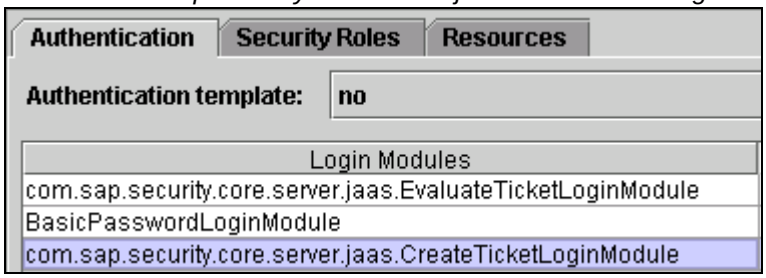


5. Choose *Modify* button. An *Edit Login Module* dialog box displays.
6. Enter the following information:

Name	Value
ume.configuration.active	**<true (default)>**
trustedsys# (change # to a number, for example trustedys1)	<SID>, <client> (for example**, D2B, 100**)>
trustediss# (change # to a number, for	CN=<SID> (for example **CN=D2B**)

example trustediss1)	
trustedn# (change # to a number, for example trustedn1)	CN=<SID> (for example **CN=D2B**)

7. Choose *OK* button.
8. Choose *com.sap.security.core.server.jaas.CreateTicketLoginModule.*



9. Choose *Modify* button. An *Edit Login Module* dialog box displays.
10. Enter the following information:

Name	Value
ume.configuration.active	**<true (default)>**
trustedsys# (change # to a number, for example trustedys1)	<SID>, <client> (for example, **D2B, 100**)>
trustediss# (change # to a number, for example trustediss1)	CN=<SID> (for example **CN=D2B**)
trustedn# (change # to a number, for example trustedn1)	CN=<SID> (for example **CN=D2B**)

11. Choose *OK* button.

Import SAP system certificate to J2EE of portal system

1. Navigate to *Server* → *Services* → *Key storage*

J2EE Visual Administrator	*Server ##* → *Services* → *Key Storage*

2. Choose *TicketKeystore* in the Views menu.

3. Choose the *Load* button.
4. Choose the *certificate* of the SAP system from step 3.

Restart the J2EE instance

1. Right-click the *Server ##* and choose *Reboot.*

Create RFC connection in the SAP system

1. Switch to the *SAP system*.

2. Enter transaction **SM59**.
3. Right-click *TCP/IP* connections and choose *Create.*
4. Enter the following values:

Name	Value
RFC Destination	<Name (for example, **RFC_to_portal**)>
Connection Type	**T**
Description	*<description of connection>*

5. Choose *Save* button.
6. Enter the following values into the Technical settings:

Name	Value
Gateway host	*<from step 6>*
Gateway service	*<from step 6>*

Restart SAP System

1. If you changed parameters in *RZ10*, restart the SAP System

Test Connections

1. Create a *test user* in the SAP system with transaction *SU01*.
2. Enter transaction **SU01** in the SAP System.
3. *Create* a test user in the portal system with the same user name.
4. *Switch* to the portal.
5. Navigate to *User Administration* → *Create User*.
6. Enter the following information:

Name	Value
Name	Username of logon for both portal and SAP System
Last Name	<from step 6 (for example, **gw**)>
First Name	
Email address	

7. Choose *Create* (scroll to the bottom of the iView)
8. Choose *Registered* server program under Technical settings.
9. Enter the *Application Name* in the Program ID field from step 7.7
10. Enter *Gateway host* step 7.7
11. Enter *Gateway service* step 7.7
12. Choose *Save.*
13. Test Connection.

Test iView

14. *Switch* to the portal.
15. Go to *System Administration → Support → SAP Application*

SAP Netweaver Portal	*System Administration → Support → SAP Application*

16. Choose *SAP Transaction link*.
17. Choose your SAP system by *alias* in the drop list menu.
18. Enter a transaction in the *Transaction code* field (ie **`VA21`**).
19. Choose the *Go* button.
    You should see the transaction displayed as *WebGui iView*.

Result

You have Single Sign-On enabled to access the SAP System with the user's portal logon.

Applying Patch on Portal

Before installing the patch, you download SAR files containing the patch and control files specific to your platform, and you extract them into **one shared empty folder**, from which you run the patch tool and apply it to your portal.

To download the patch files:

...

1. Access the Patch software download area on Sap Service Marketplace at:

   http://service.sap.com/swdc → *Download → Support Packages & Patches → Entry by Application Group → SAP NetWeaver → SAP NETWEAVER → SAP NETWEAVER 04 → ENTERPRISE PORTAL → PORTAL PLATFORM 6.0_6.40*

1. *2.* Navigate to: *#OS independent*
2. 3. Make sure you know:
   a. The number of the latest SP stack installed on your portal.
   b. The number of the patch you are about to install now.
4. Download the following files:
   - `EP6PORTAL0`**`x`**`P_`**`y`**`.SAR`
   - `EP6TOOLS0`**`x`**`_0.SAR`

   Where:

   `x` is the number of the latest SP stack installed on your portal

   `y` is the patch number you are now installing
5. Navigate to: <*Your OS specific folder* - Windows, Solaris, HP-UX, AIX, etc.>
6. Download the files specific to your platform: (If you already installed a patch, the most recent files may be downloaded.)

- SAPINST0**x**_0.SAR
- EP6CTRL0**x**_0.SAR

7. Unpack all the SAR files into the same local directory using:

   Windows: SAPCAR.EXE -xvf <SAR_file_name>

   UNIX: ./SAPCAR -xvf <SAR_file_name>

Preparing the Cluster Environment

When you start the patch procedure, only **one** dispatcher node and **one** server node are allowed to run on the central instance of the J2EE Engine. Also, the dialog instances must be stopped.

To prepare the cluster for patch installation:

1. If you have added additional server nodes to the central instance, stop them before running the patch. Keep only one server node and one dispatcher node.
2. Make sure that all the Java dialog instances are stopped.

Note:*Do not restart Java dialog instances while patching applications running on the J2EE Engine central instance, as it may corrupt the installation of this application*.

Installing the Patch

Run the Patch tool, as you would run SAPinst, following the instructions in this section, according to your platform.

To install the patch:

...

1. Start SAPinst as follows:

   UNIX

   a. Log on to your installation host as a user with *super user (root)* permission.

   b. Run the following command:

   ```
   chmod –R 777 /<SAR file dir>/SAPINST-CD
   ```

   1.c. Go to the directory:

   ```
   cd <SAR file dir>/SAPINST-CD/SAPINST/UNIX/<OS>/
   ```

   2.d. Run the command:

   ```
   ./sapinst
   ```

   Windows

   a. Log on to your host as a user who is a member of the local administration group.

   c. Run the file: **<drive>:\<SAR File Directory>\SAPINST-CD\SAPINST\NT\<OS>\sapinst.exe**

2. In the screen *Specifying the SAP Web AS Java System and J2EE Administrator Account*, enter the details for the J2EE Engine on which the portal you are patching is installed.

   a. From the *SAP Web AS Java System* drop-down list, choose the J2EE system you want to patch.

b. In the *Administrator* account details, enter the name and password of the user with Administrator privileges on the J2EE system on which your portal is running. These are the details for the *SAP **J2EE** Administrator Account*, defined during J2EE installation. The default is:

1. User **Administrator** with password of minimum five characters.
2. For Add In installations the default is **j2ee_admin**.

c. Click *Next*.

3. **Windows only:** In the screen *Specifying SAP System Administrator Account*, enter the details for the System Administrator of the SAP Web AS system.

   a. In the SAP System Administrator details, enter the name and password of the OS user of the SAP Web AS system that hosts the portal. These are the details for the *SAP **System** Administrator Account*, defined during J2EE installation.

   b. If this user is a Window domain user, enter the Windows domain name. Otherwise, enter the local machine host name.

   c. Click Next.

4. In the *Start Installation* screen, review your input. Click *Start* to start the installation, or *Back* to change your entries.
5. SAPinst starts the installation and displays installation progress during the processing phase. If the installation was successful, the message "`The installation finished successfully`" is displayed.
6. To verify the patch installation, log on to the portal now.

   a. In the browser, enter the portal URL.

   b. Log on to the portal and verify that your content is available, and that you can perform administrative tasks.

Transporting In Portal:

Read the document **TransportEP6content.pdf**

Product Availability Matrix

Technical Information on SAP components

The Product Availability Matrix bundles technical and release planning information on SAP components for quick reference. You will find information on the availability of SAP component releases (product versions), maintenance end dates and upgrade paths, as well as technical release information (DB-platforms, JSE-platforms, operating systems etc.). A SAP component release is structured into instances. An instance is a bundle of technically dependent software component versions to be installed on one single logical system. The technical release information is displayed per instance.

Example: The SAP component release SAP R/3 4.6C is structured into the instances R/3

Server, Frontend GUIs etc. The R/3 Server itself consists of the software component versions SAP APPL 4.6C, SAP HR 4.6C, SAP ABA 4.6C, SAP BASIS 4.6C and SAP Kernel 4.6C 32-BIT (or a newer downward compatible one).

Please take note of the following:

- **Dates** published here are planning dates and are subject to change.
- Comments contain important information and have to be read and taken into account in all cases.
- You should also read the release restrictions note for an SAP component release, because it supplements the information given here.
- **Platform versions**: If you do not find information on a platform version, for example, this does not necessarily mean that the release is not and will never be released for the specific version. It may simply be the case that confirmation for the release information is pending. In such cases, you should contact your sales representative for more information.
- **Releases in customer-specific maintenance** are not listed in the Product Availability Matrix.

SAP Components

SAP implements all capabilities and features of SAP solutions using a number of SAP components. There are several types of SAP components:

- **SAP Application Components (Cross-Industry Components)**
  e.g. SAP ERP, SAP R/3 Enterprise, SAP R/3, SAP CRM, SAP SCM, SAP SRM
- **SAP Industry-Specific Components**
  e.g. SAP Bank Analyzer, SAP IS-U(tilities), SAP IS-M(edia), SAP Insurance. For many of the industry-specific components the latest release is part of SAP ECC 6.0 (part of SAP ERP 2005).
- **SAP NetWeaver Components**
  SAP NetWeaver consists of usage types (e.g. Application Server ABAP, Enterprise Portal, Business Intelligence), standalone engines (e.g. Content Server, TREX, liveCache) and clients (e.g. SAP GUI, SAP NetWeaver Developer Studio, Mobile Infrastructure Client). Here you can also find the SAP NetWeaver components before SAP NetWever 04: SAP Web Application Server, SAP Enterprise Portal, SAP Exchange Infrastructure, SAP Mobile Infrastructure, and SAP Business Information Warehouse.
- **Technology Components**
  e.g. SAP Solution Manager, SAP Partner Connectivity Kit (SAP PCK), SAP

Content Server

- **SAP xApps**
  e.g. DUET, SAP xApp Analytics, SAP xApps for Mobile Business (e.g. SAP xApp Mobile Asset Management (SAP xMAM), SAP xApp Mobile Time and Travel (SAP xMTT)), SAP xCQM, SAP xMII, SAP xRPM

- **SAP Solutions for Small and Midsize Businesses**
  e.g SAP Business One A, SAP B1 Integration for SAP NW, SAP B1 Software Development Kit

- **Country-Specific Components**
  e.g. SAP CORE-CEE, SAP IS-UT CEE, SAP REAL ESTATE CEE, SAP SRM SUS LOCIN

- **Supplementary Components for Cross Industry Solutions**
  e.g. PLM Integrations, SAP Easy Document Management, SAP Test Data Migration Server (SAP TDMS)

- **SAP Education Components**
  e.g. RWD Info Pak, SAP Productivity Composer, SAP Productivity Pak by RWD

- **SAP Solution Extensions by Partners**
  e.g. SAP Loadrunner by Mercury, SAP Price & Margin Management by Vendavo, SAP VIP by NRX

- **SAP Solutions for Governance, Risk, and Compliance**
  e.g. SAP Global Trade Service (SAP GTS), SAP xEM, Virsa Access Control, Virsa Compliance Calibrator