Capgemini

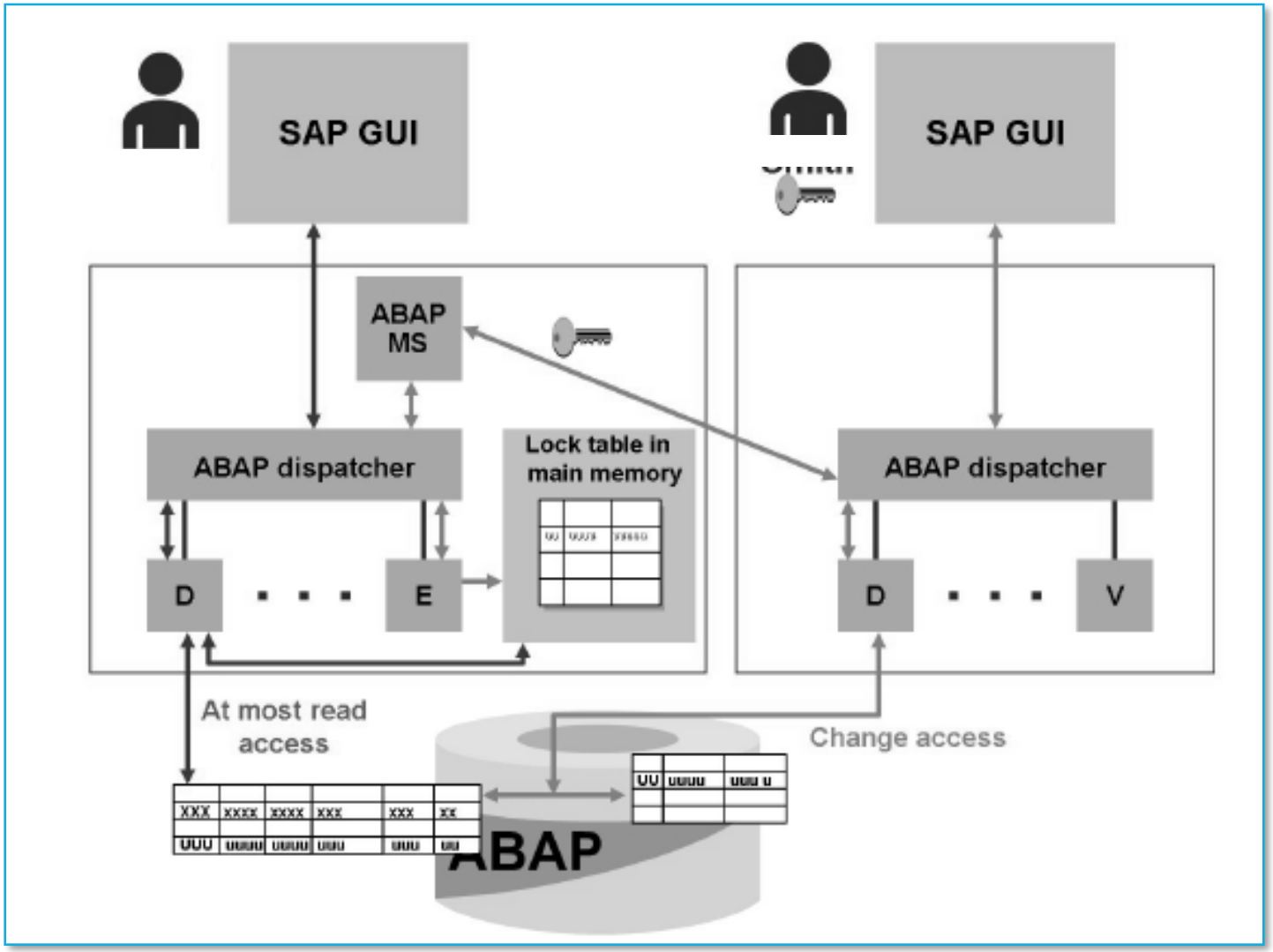
SAP BASIS Introductory Training Program

Day 2 : Agenda

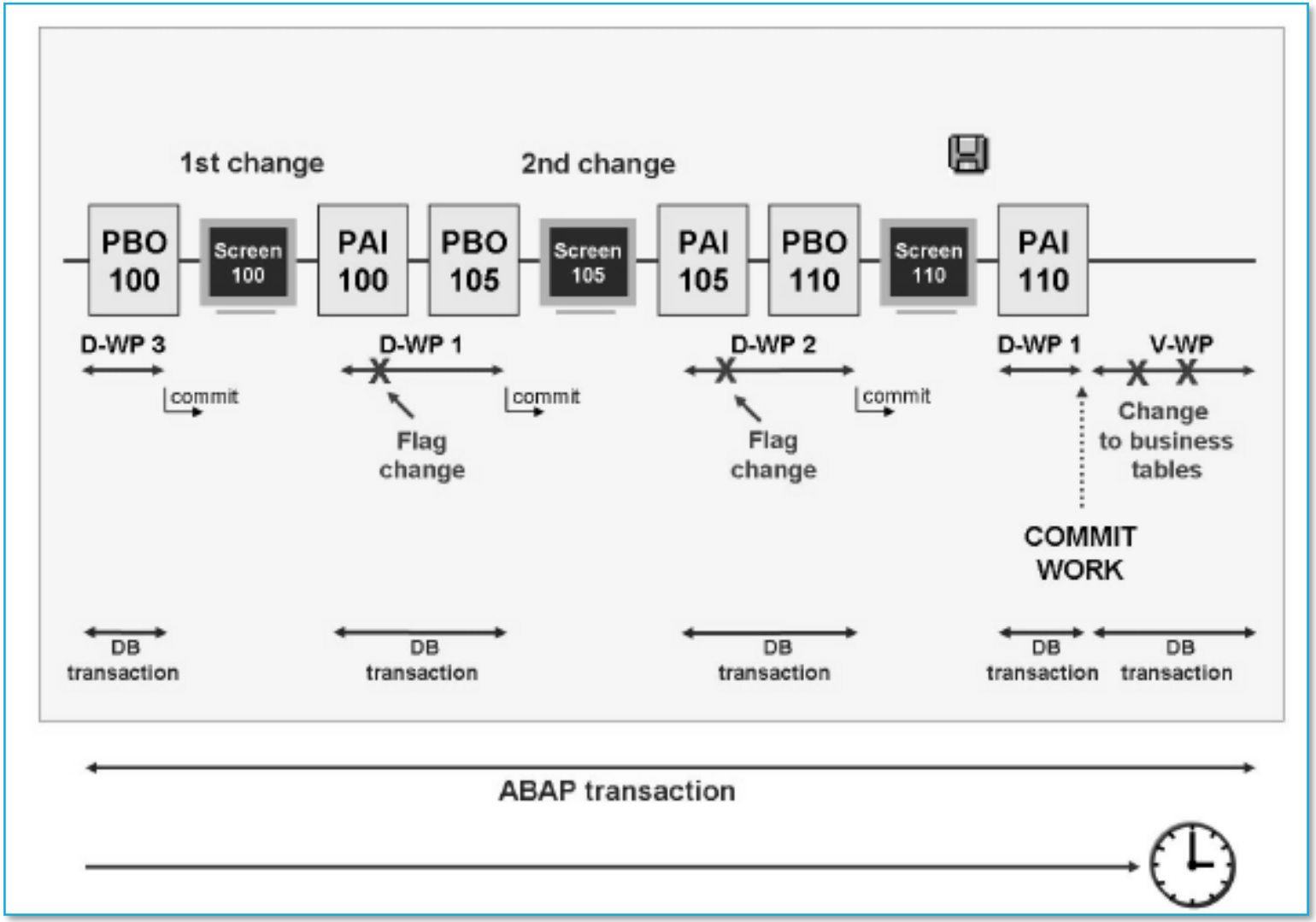
- Enque and Lock Management
- Break
- SAP AS ABAP Operations – Starting SAP
- Lunch Break
- SAP Logs
- Break
- SAP AS ABAP Operations – Shutdown Checks
- Break
- Exercise & Break Out Session

Enque & Lock Management

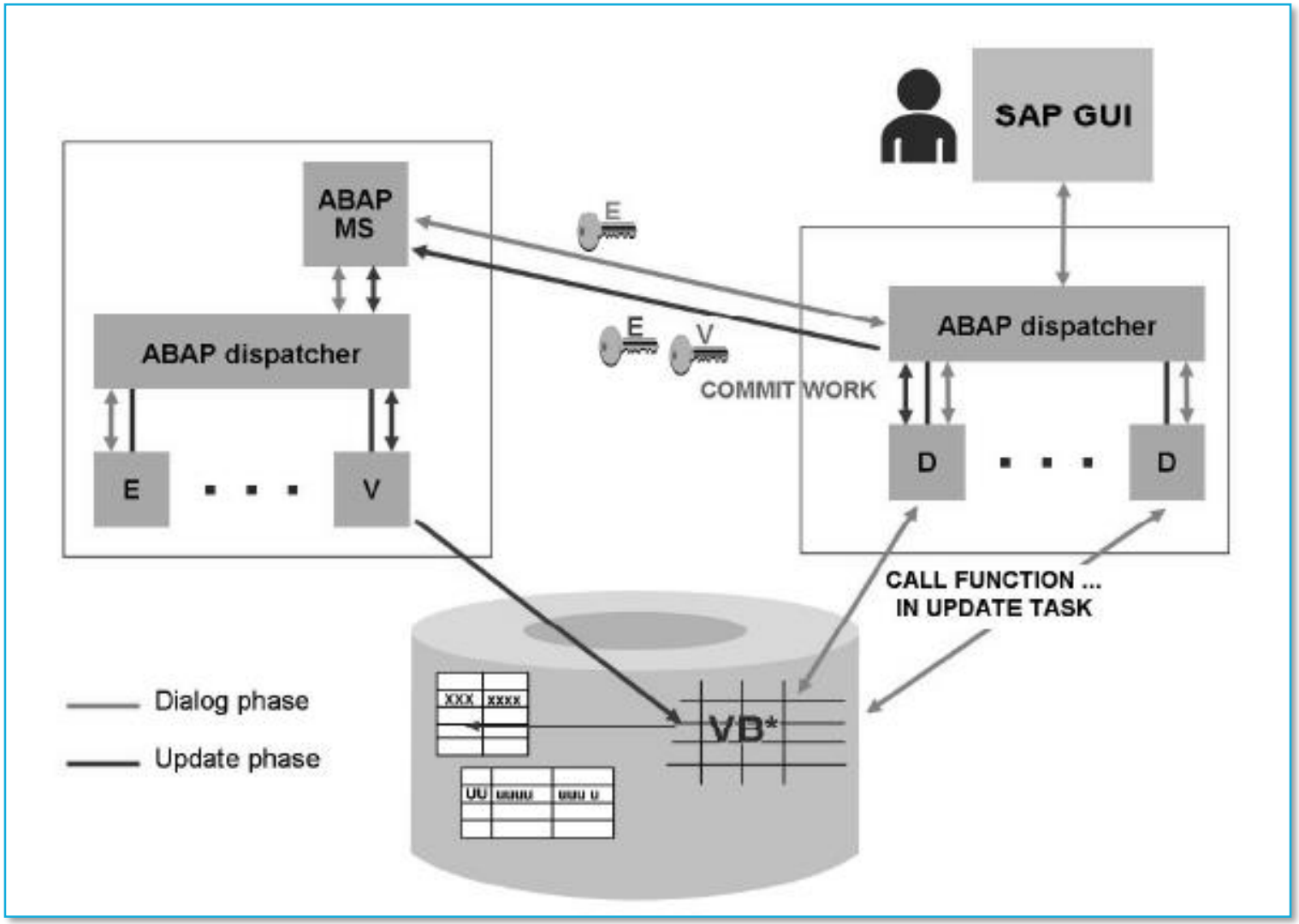
Enqueue & Lock Management



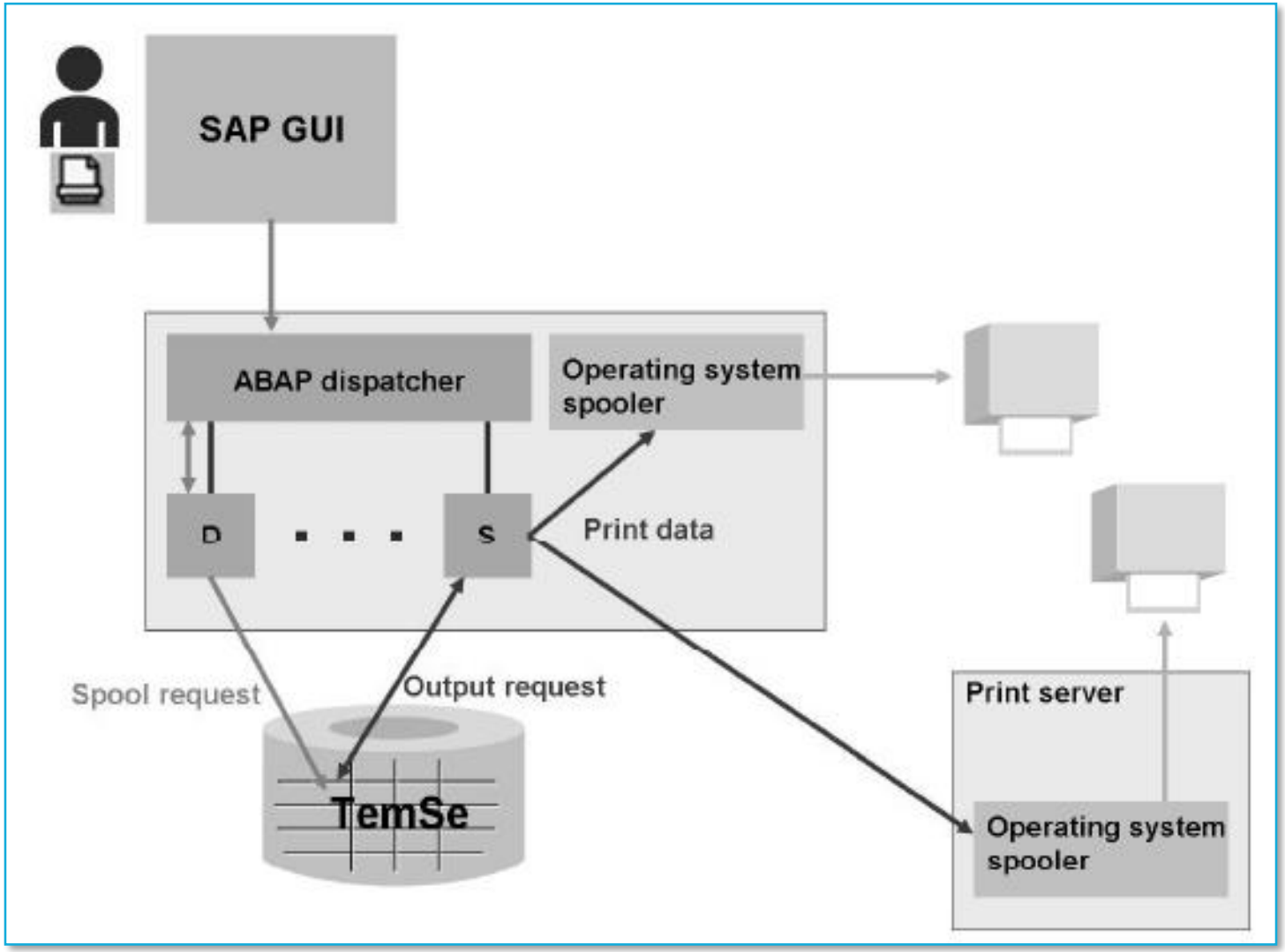
Update Process



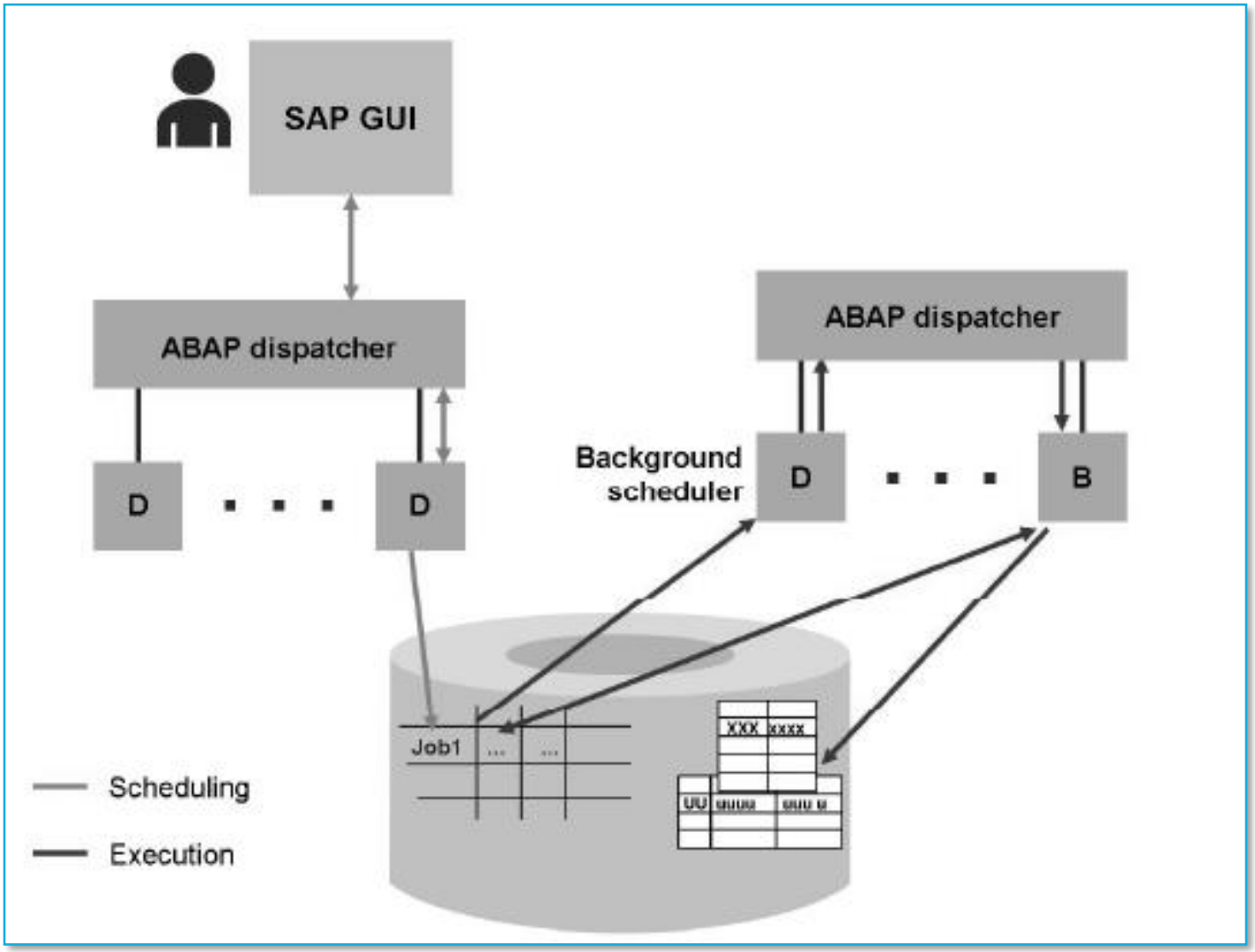
Principles of Asychronous Updates



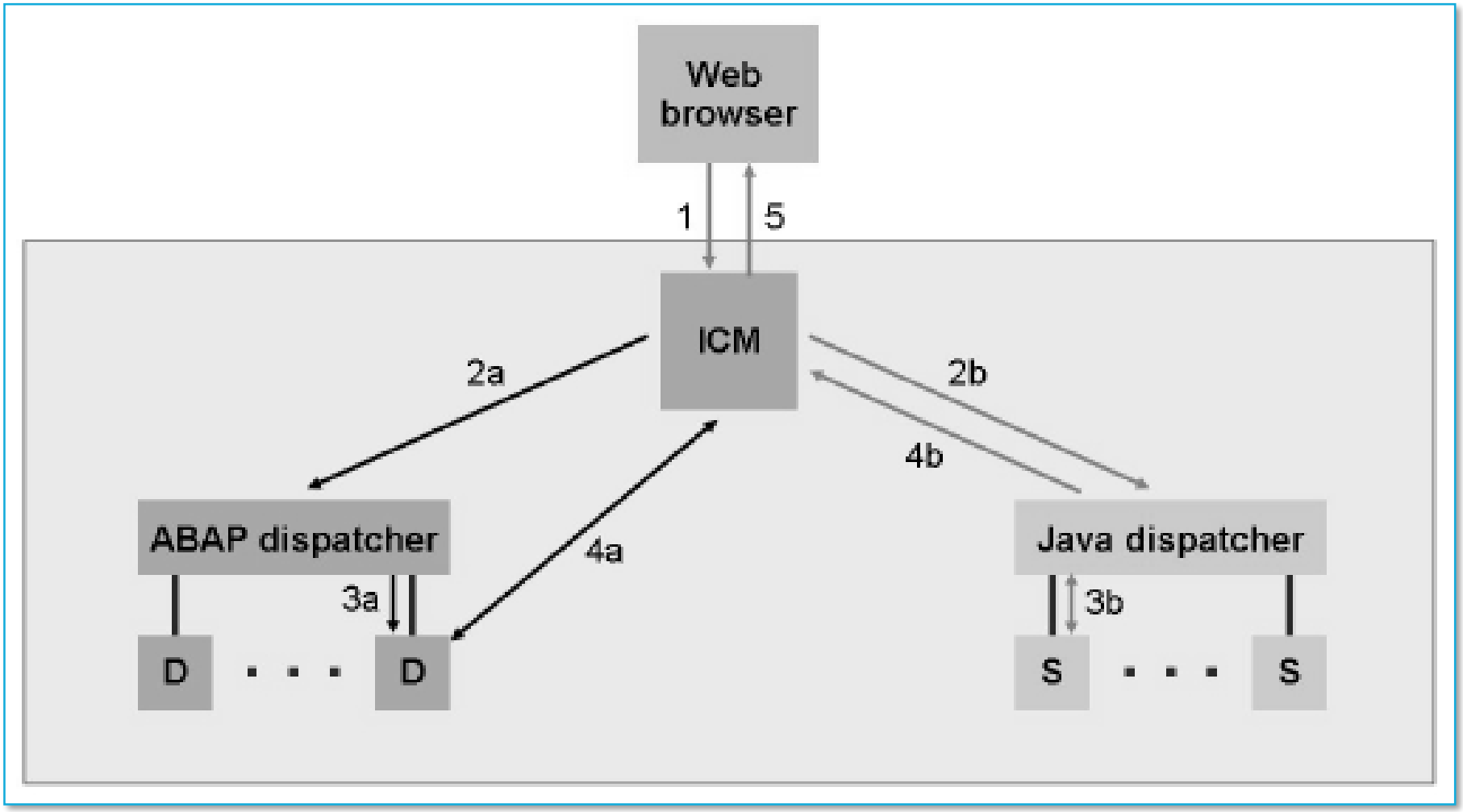
Print Processing



Background Processing



Internet Communication Manager (ICM)



BREAK

Overview of AS ABAP Operations – Starting SAP

Overview of AS ABAP Operations

Operations in AS ABAP comprise of System Administration and System Monitoring

To understand system administration it is necessary to know the structure of a SAP system at the operating system level

This section will take you through the concept of SAP startup and shutdown commands and options and SAP Profiles

The basics of system monitoring are built on a thorough understanding of the different logs and trace files where system activity is recorded

Later sections will take you through the relevant files within the SAP filesystem

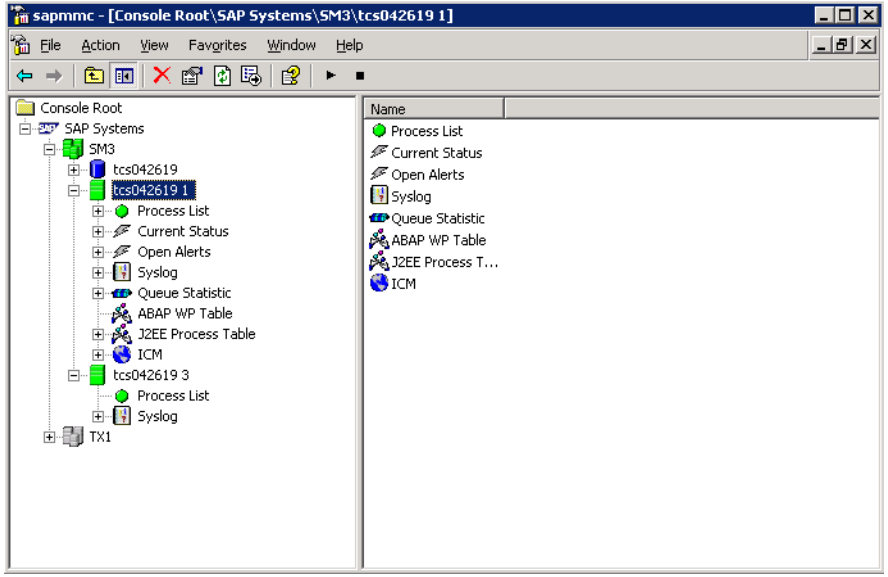
Startup & Shutdown of AS ABAP Systems

SAP has provided 2 tools for start and stop of SAP AS ABAP instances

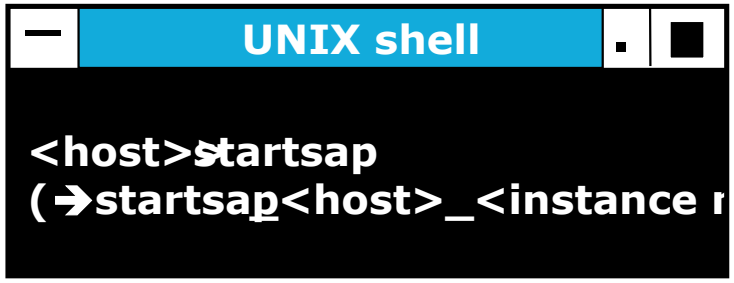
On Windows OS , SAP MMC (Microsoft Management Console) is provided

On Unix OS , the commands startsap and stopsap are provided

Windows OS



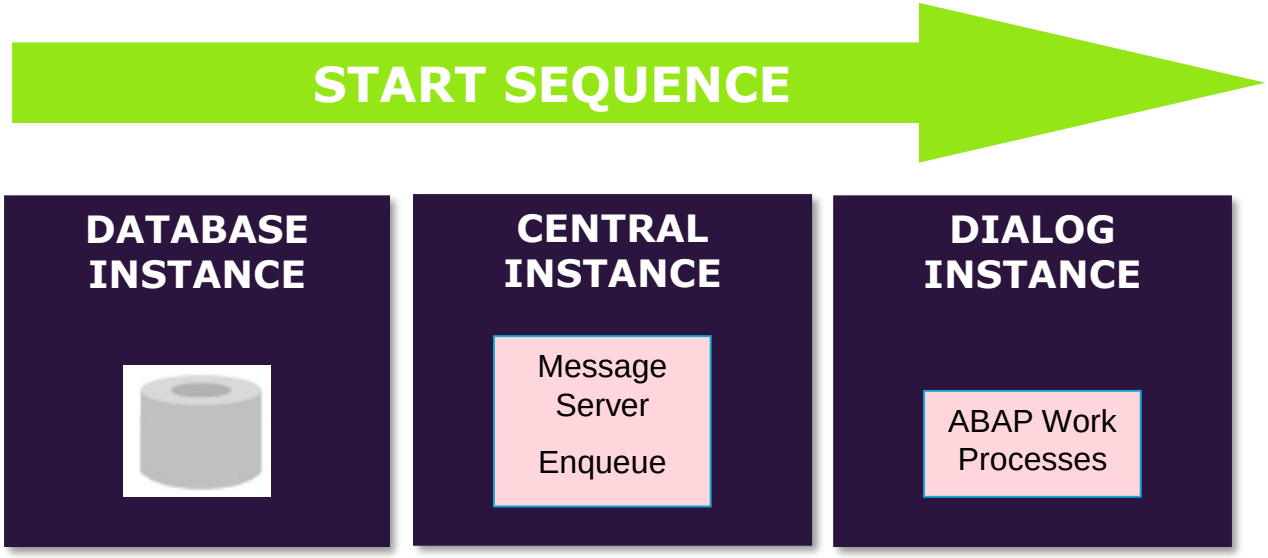
Unix OS



Sequence of Startup

The SAP System comprises of Database Instance , Central Services and finally the multiple Dialog Instances

The sequence of startup is extremely important. Starting the processes of sequence will result in an inconsistent state and may spawn zombie processes on the OS which will have to killed



Sequence of Startup

To startup the SAP system , you should login to SAP with the <sid>adm OS user

The <sid>adm OS user belongs to the Unix Group called sapsys on the Unix OS

The <sid>adm OS users belongs to the Windows Group called SAP_<sid>_GlobalAdmin and Administrators Group

The underlying element of the SAP system is the database instance.Therefore this has to be started first

If Central Services has been setup , this has to be started next.This means that the Enqueue Service and the Message service should be started.

Continued..

An independent program called SAP OS Collector (saposcol) is started alongwith the remaining ABAP work processes in the Central Instance.The dispatcher work process is started next.

Saposcol collects statistical data from the operating system such as CPU and Memory usage parameters

Finally , the individual dialog instances can be started. There is no dependency between the dialog instances

Role of SAP profiles in startup

Each SAP instance , whether it is application instance or a dialog instance , has three profiles

The three profiles and the sequence in which they are read :

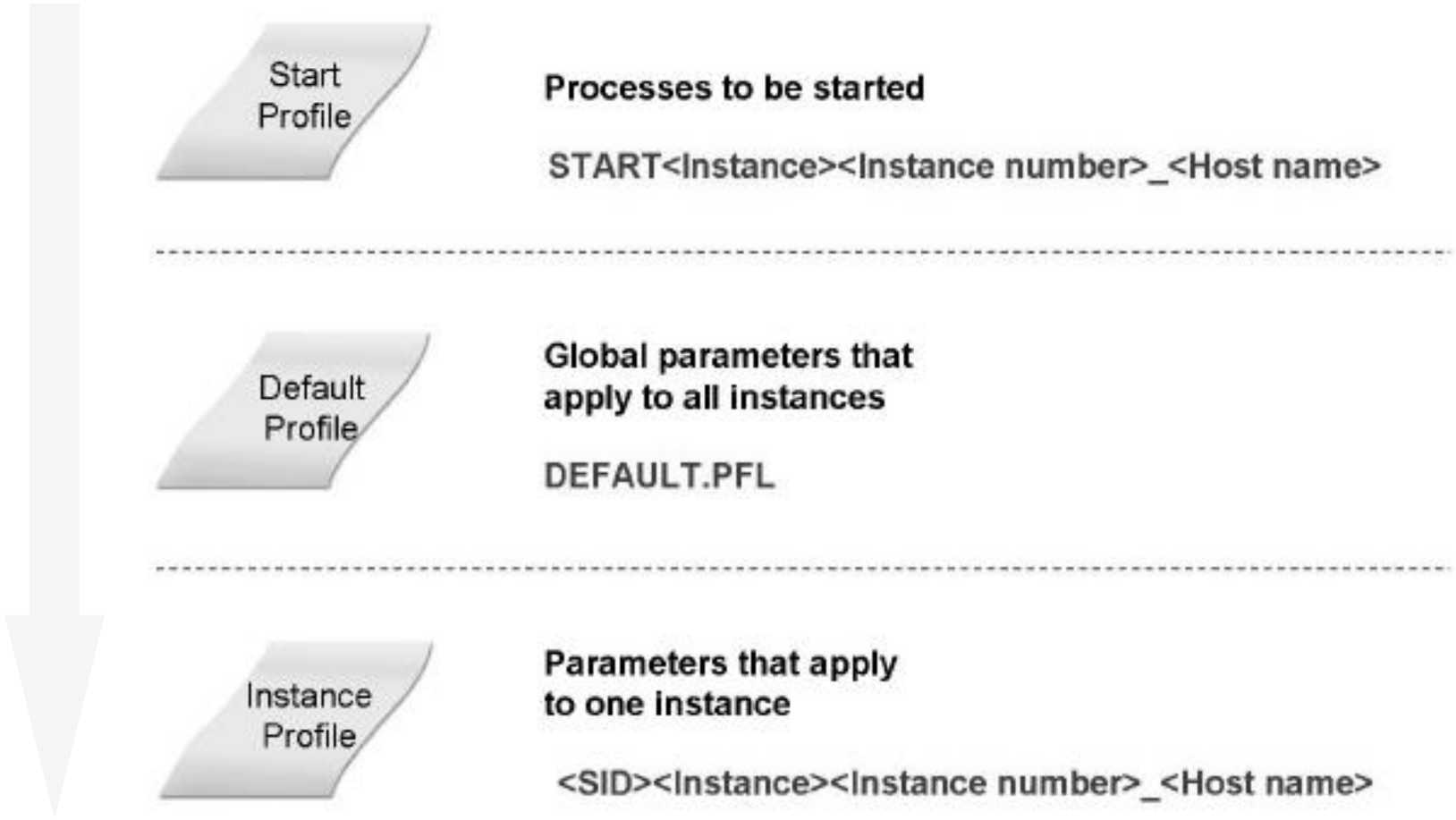
- START PROFILE
- DEFAULT PROFILE
- INSTANCE PROFILE

The start profile is read by the sapstartsrv process and inputs are provided on the SAP system ID and number , as well the physical filepaths of the sap executables for starting message service and enqueue service

Once the dispatcher work process is started, the Default Profile file is read.This file provides the necessary information to the dispatcher on the memory and sap application performance settings required to run the instance

The instance profile is the last file to be read. Any settings in the instance profile file will override the settings in the default profile file

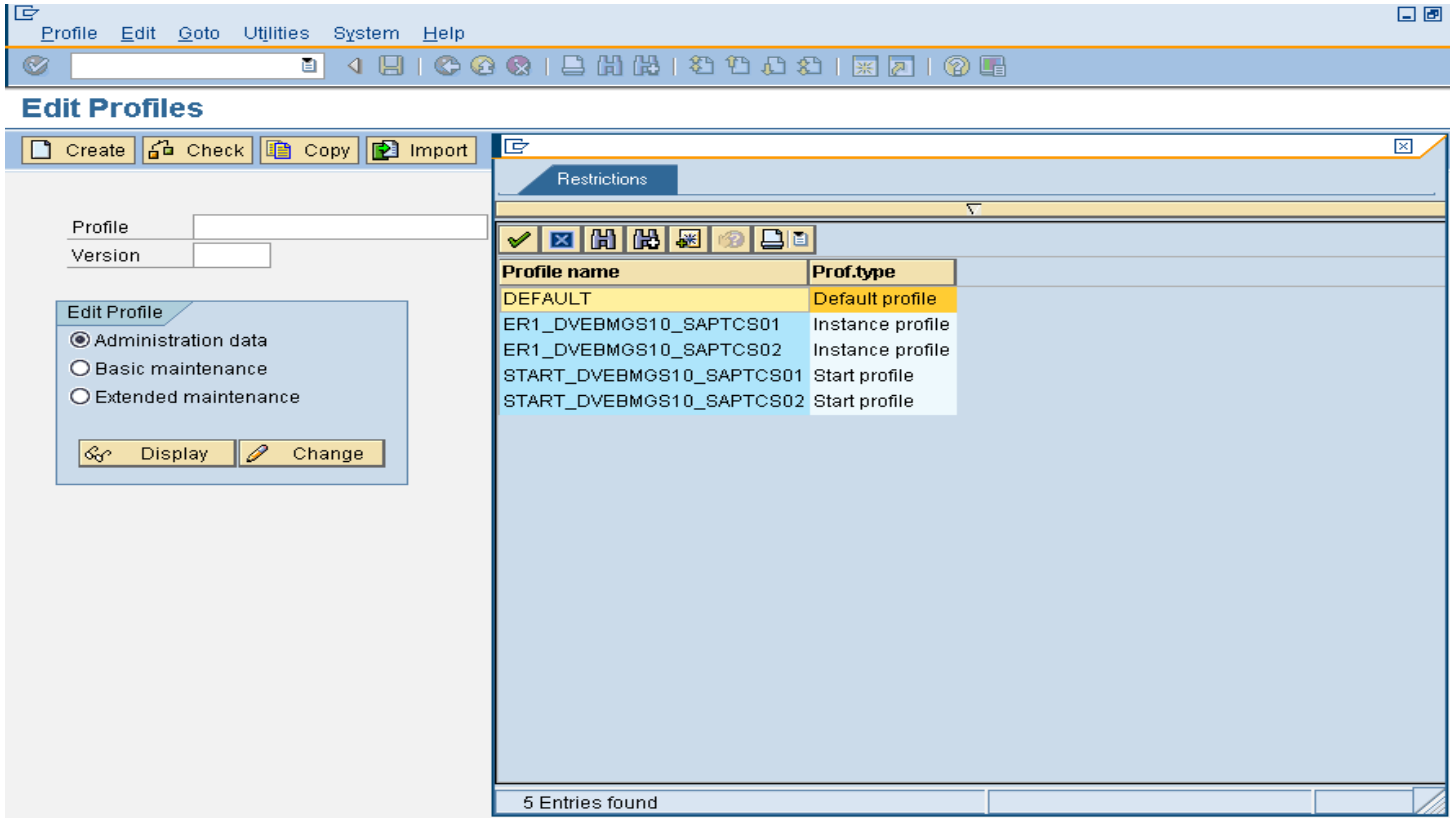
Overview of SAP Profile Files



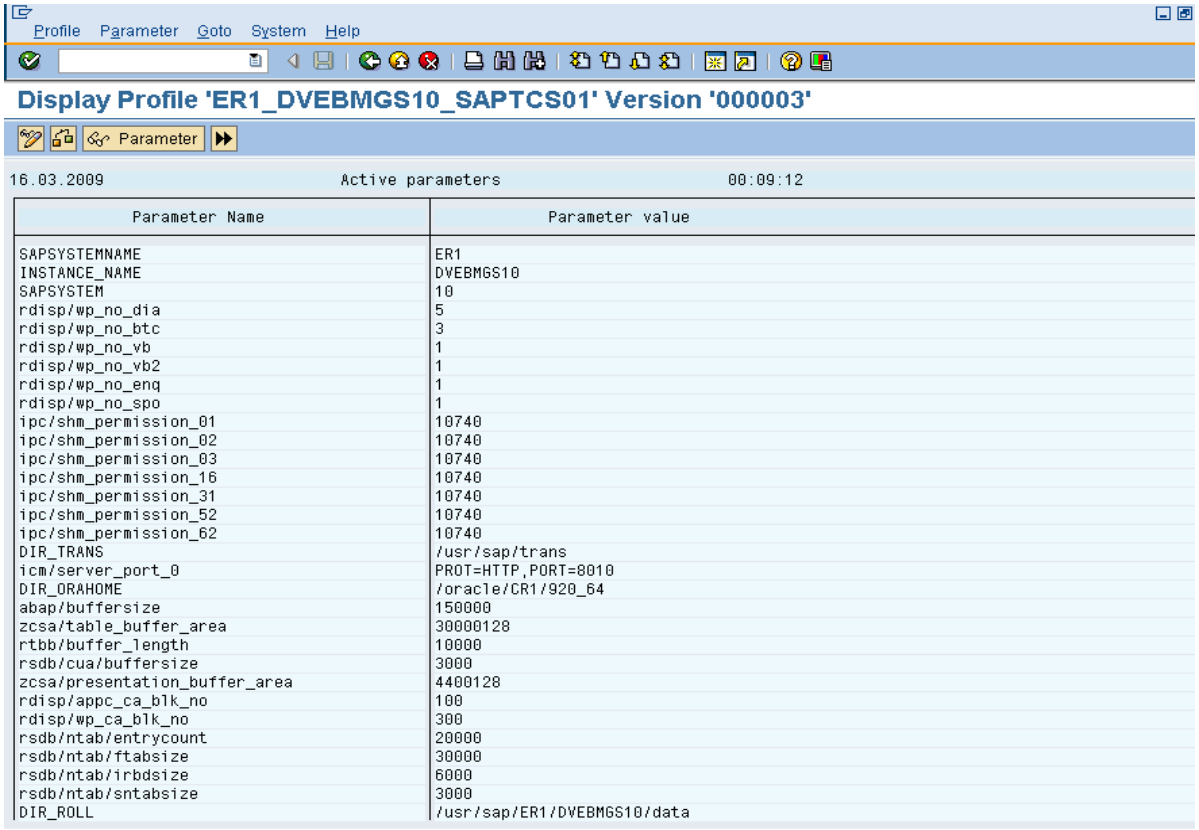
Usage of RZ10

It is possible to view the current values of SAP profile parameters using transaction RZ10 and RZ11

You can change the values of parameters using RZ11



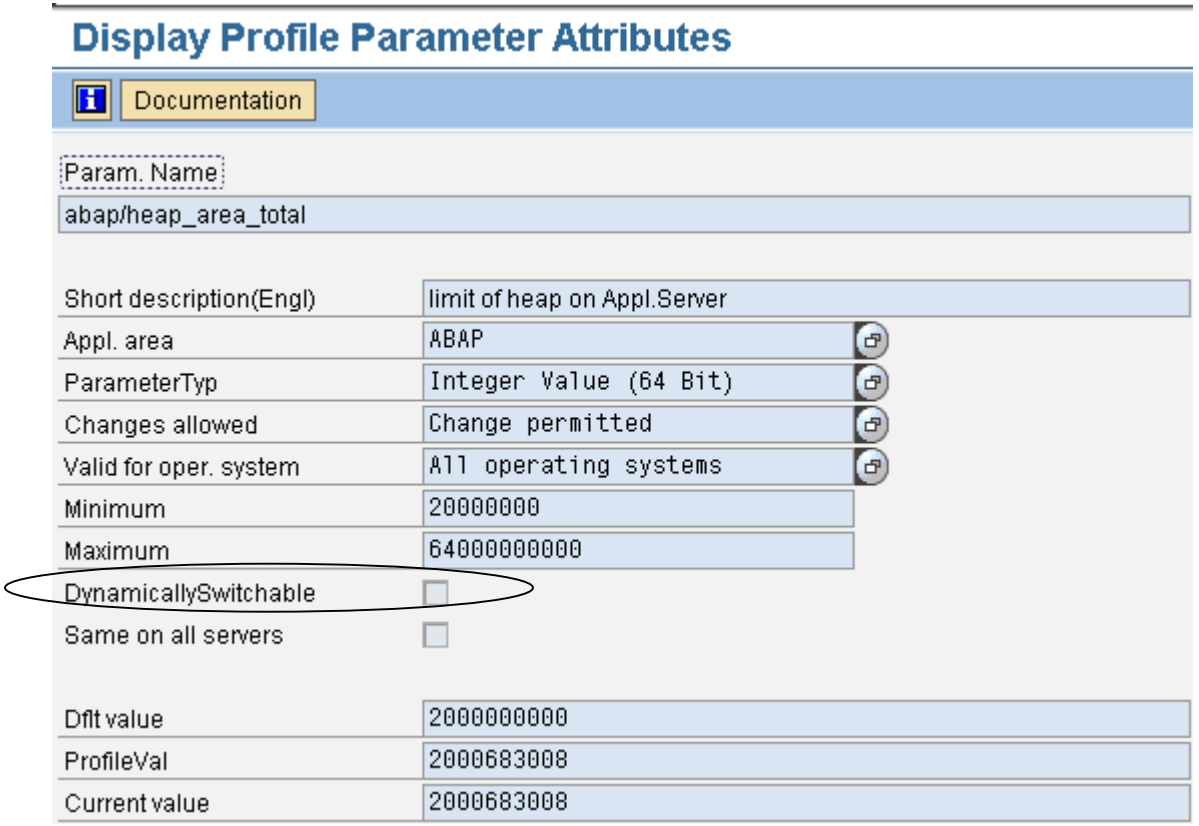
Changing Profile Parameters



Parameter Name	Parameter value
SAPSYSTEMNAME	ER1
INSTANCE_NAME	DVEBMGS10
SAPSYSTEM	10
rdisp/wp_no_dia	5
rdisp/wp_no_btc	3
rdisp/wp_no_vb	1
rdisp/wp_no_vb2	1
rdisp/wp_no_enq	1
rdisp/wp_no_spo	1
ipc/shm_permission_01	10740
ipc/shm_permission_02	10740
ipc/shm_permission_03	10740
ipc/shm_permission_16	10740
ipc/shm_permission_31	10740
ipc/shm_permission_52	10740
ipc/shm_permission_62	10740
DIR_TRANS	/usr/sap/trans
icm/server_port_0	PROT=HTTP,PORT=8010
DIR_ORAHOME	/oracle/CR1/920_64
abap/buffersize	150000
zcsa/table_buffer_area	30000128
rtbb/buffer_length	10000
rsdb/cua/buffersize	3000
zcsa/presentation_buffer_area	4400128
rdisp/appc_ca_blk_no	100
rdisp/wp_ca_blk_no	300
rsdb/ntab/entrycount	20000
rsdb/ntab/ftabsize	30000
rsdb/ntab/irbdsize	6000
rsdb/ntab/sntabsize	3000
DIR_ROLL	/usr/sap/ER1/DVEBMGS10/data

Changing profile parameters may require a system restart. Dynamically switchable parameters do not require a restart. After changing SAP profile parameters , you are not required to restart the database. Restart only the SAP instance

Dynamic Profile Parameters



Changing Memory configuration in SAP will require a restart

The option of dynamic switching is not applicable to all parameters.

Check SAP Notes for the same

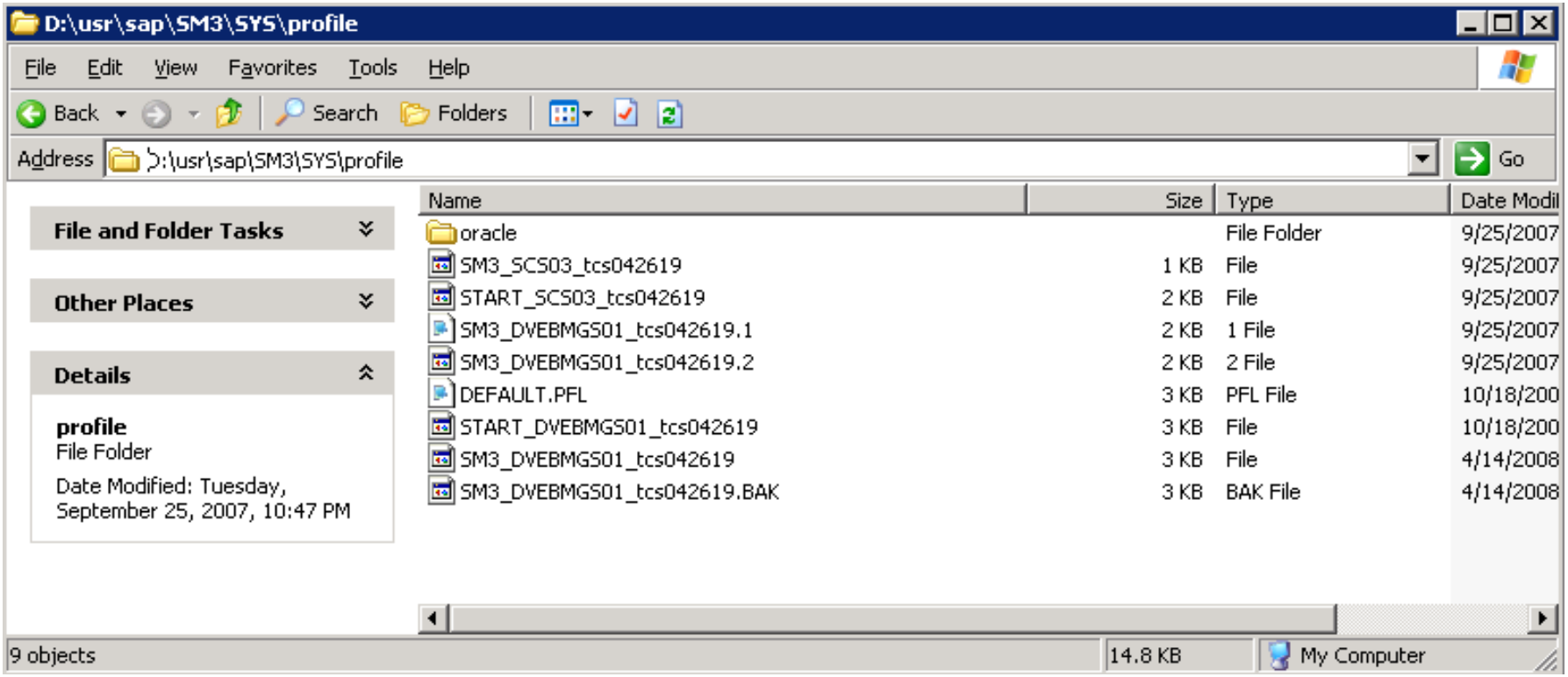
Location of SAP Profile Files in Unix

UNIX : /sapmnt/<Sys-ID>/profile or /usr/sap/<Sys-ID>/SYS/profile

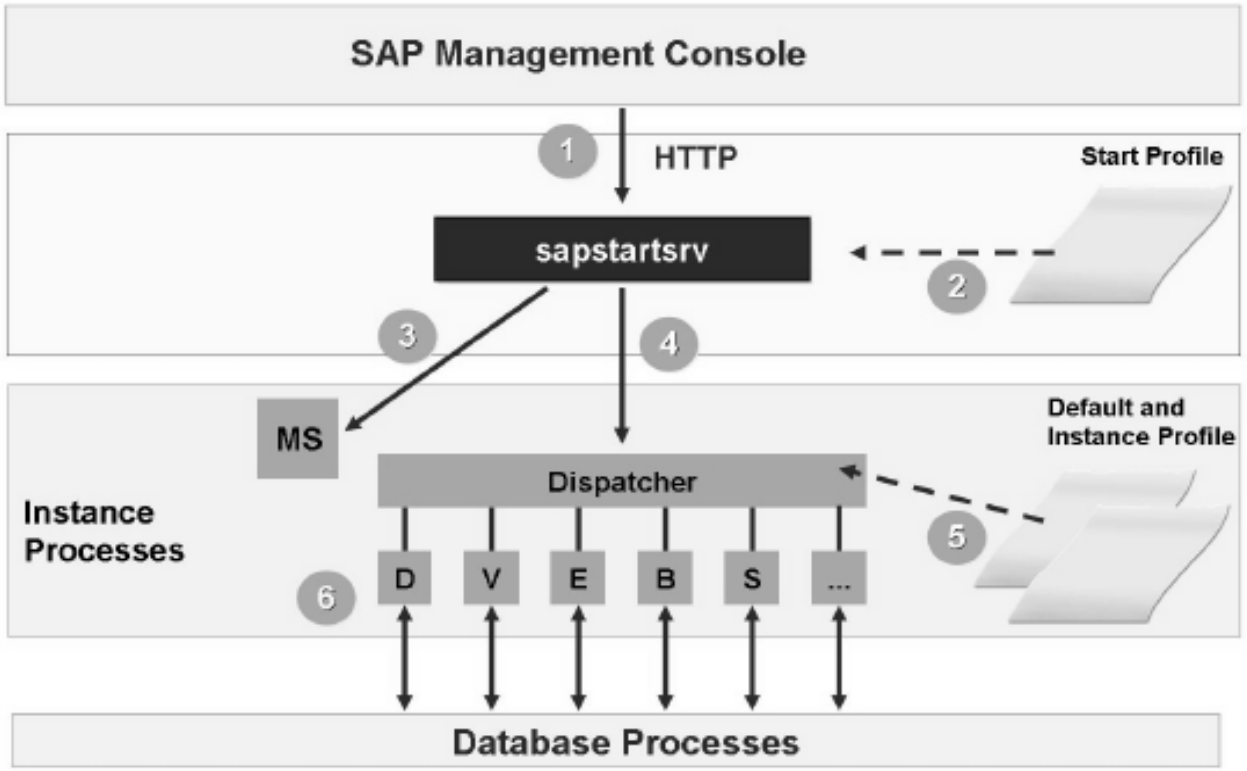
```
idesecc:idsadm 44% pwd
/sapmnt/IDS/profile
idesecc:idsadm 45% ls -ltr
total 84
drwxr-xr-x   2 idsadm   sapsys       512 Feb 13  2007 oracle
drwxr-xr-x   2 root     root         512 Feb 16  2007 back
-rw-r--r--   1 idsadm   sapsys      3828 Oct  5  2007 START_DVEBMGS00_idesecc
-rw-r--r--   1 idsadm   sapsys      1794 Feb 25  2008 dev_dpmon
-rw-rw----   1 idsadm   sapsys      3098 Feb 28  2008 DEFAULT.BAK
-rw-r--r--   1 idsadm   sapsys      3227 Feb 28  2008 DEFAULT.PFL
-rw-rw----   1 idsadm   sapsys     12612 May 20  2008 IDS_DVEBMGS00_idesecc.BAK
-rw-r--r--   1 idsadm   sapsys     12722 May 20  2008 IDS_DVEBMGS00_idesecc
idesecc:idsadm 46%
```

Location of SAP Profile Files in Windows

Windows : <DIR_HOME>\<Sys-ID>\SYS\profile



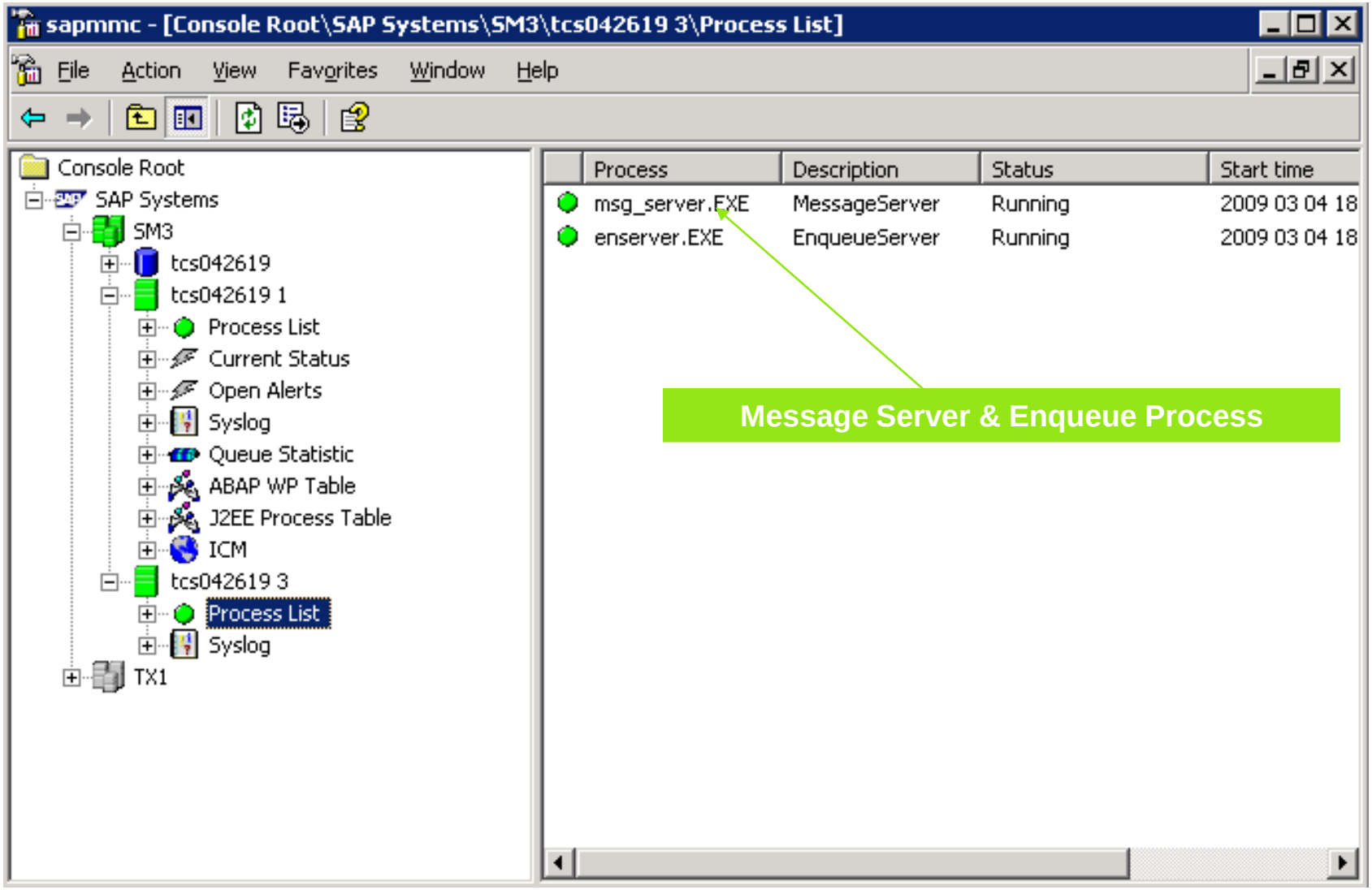
Starting SAP from MMC



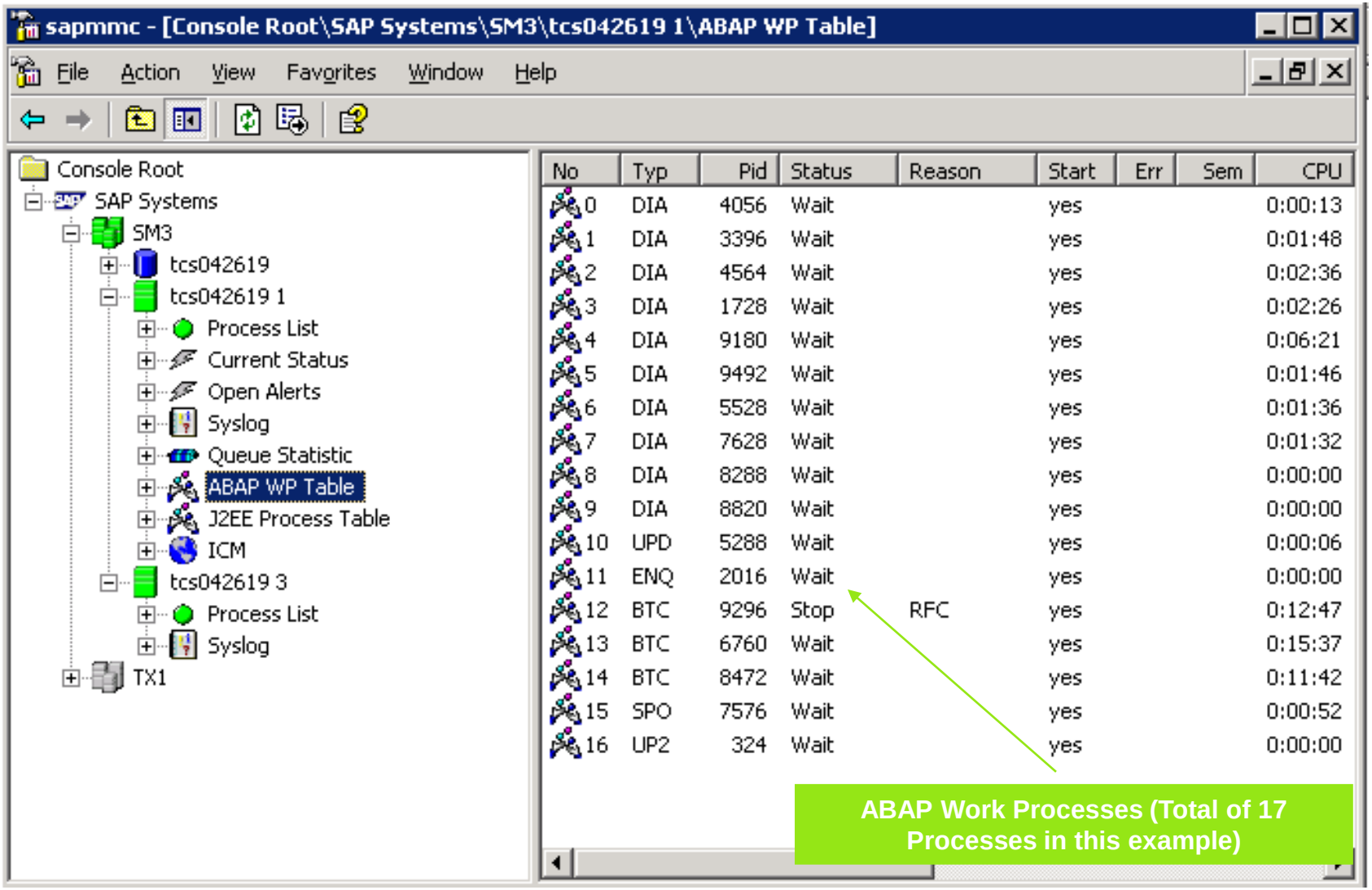
Netweaver 7.0 provides a SAP service called sapstartsrv.exe in Windows and a daemon called sapstartsrv for Unix OS

This process runs on each SAP instance and does not terminate even when the instance is stopped

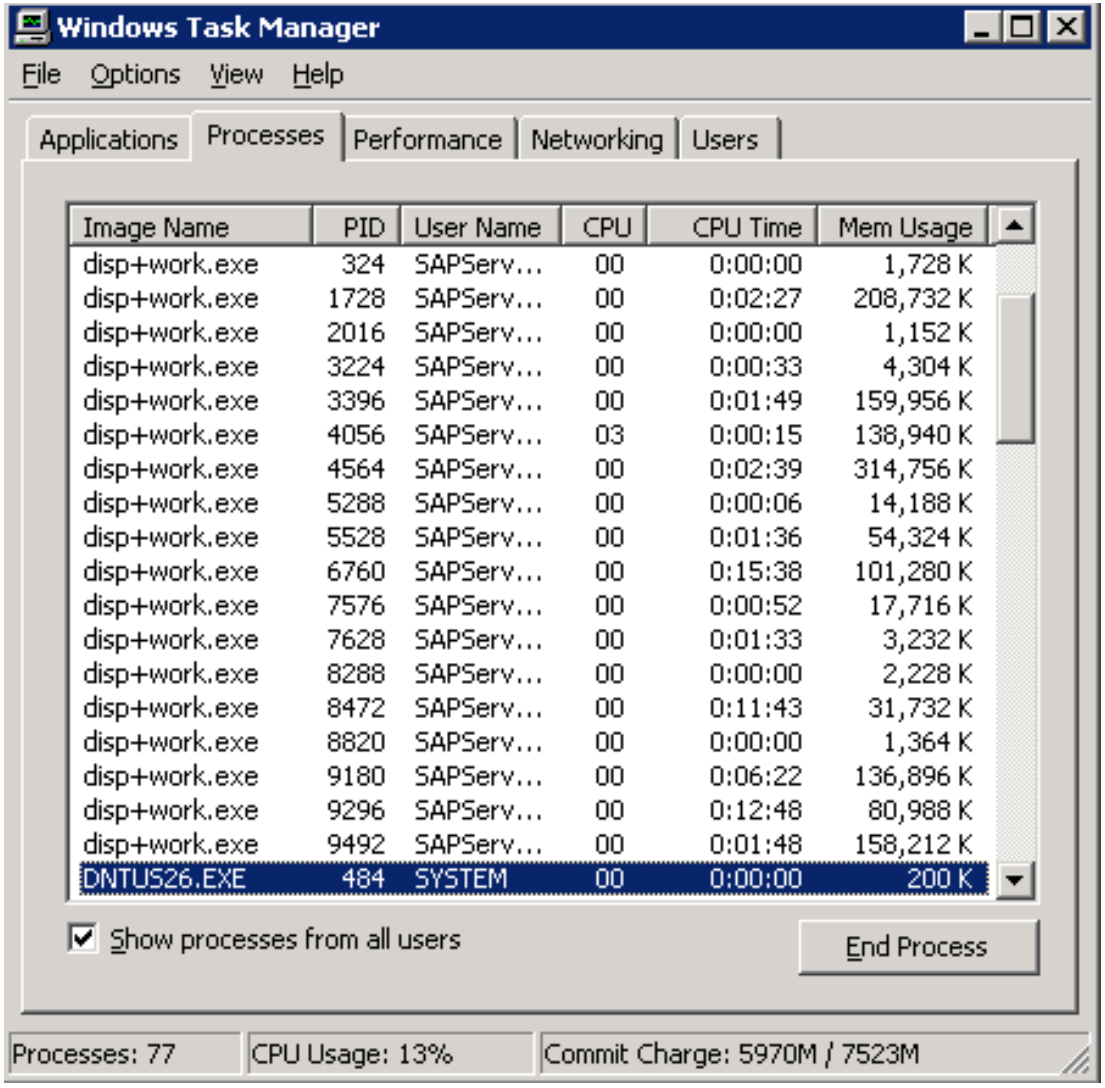
Example of Services in SAP MMC



Example of Processes in SAP MMC



Correlation between ABAP and Windows Processes



There are a total of 18 disp+work.exe processes in this example.This is because the dispatcher work process is an additional process which is not displayed in the SAP MMC Work Process Table

Important Note : Killing the SAP MMC Window or Process from the Task manager will not stop the SAP application.You have to invoke the stopsap or SAP MMC Stop button to stop the SAP instance

Starting SAP from the Unix Command

The sapstartsrv process need not be explicitly called to start SAP in Unix.

The syntax of the SAP start command is :

Usage: startsap [db|r3|j2ee|ccms|all|check] [<instance>] [<virtual hostname>]

Specify instance if you have installed multiple instances of the same system on one host.

Example: startsap r3 DVEBMGS00 idesecc

Explanation :

The command option for starting SAP application instance is “r3” , followed by the instance name. The instance name is always DVEBMGS<Sys-Nr> , followed by <Sys-ID> and then the server hostname

Continued..

There are options to start the database using this command , but during the course of this training we recommend you DO NOT use this command. It is better to start the Database Instance from the SQL prompt (in case of Oracle)

Each SAP Dialog Instance will have its own DVEBMGS<Sys-Nr> identification.Therefore the start sap command has to be executed explicitly if the dialog instance and central instance are on the same host. If the identity is not specified , the generic startsap r3 command will not execute correctly.

SAP Processes in Unix

```
idesecc:idsadm 11% ps -ef | grep dw.sapIDS
  idsadm  9903 21320   0 14:56:40 ?           0:03 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 21375 21320   0   Feb 09 ?           0:07 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 10216 21320   0 18:37:59 ?           0:06 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 21378 21320   0   Feb 09 ?           0:42 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 27010 21320   0   Feb 18 ?           2:03 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 23591 21320   0   Feb 12 ?           6:44 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 21358 21320   0   Feb 09 ?          10:31 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 21320 21286   0   Feb 09 ?           8:45 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm  9906 21320   0 14:57:12 ?           1:22 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 21361 21320   0   Feb 09 ?           0:06 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 21373 21320   0   Feb 09 ?           4:58 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 24226 21320   0   Feb 13 ?           3:20 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 10238  9959   0 19:13:41 pts/2       0:00 grep dw.sapIDS
  idsadm  6275 21320   0   Mar 07 ?           0:42 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm  9948 21320   0 16:36:56 ?           0:10 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm  9895 21320   0 14:53:40 ?           0:02 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm   298 21320   0   Feb 24 ?           5:19 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm  9891 21320   0 14:51:45 ?           0:19 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm   797 21320   0   Feb 25 ?          12:49 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm  9894 21320   0 14:53:40 ?           2:54 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 29619 21320   0   Feb 23 ?           1:53 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 21380 21320   0   Feb 09 ?           0:08 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm  9935 21320   0 16:16:56 ?           0:07 dw.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
idesecc:idsadm 12%
```

The dw process in Unix indicates the dispatcher and work processes

```
idesecc:idsadm 14% ps -ef | grep ms.sapIDS
  idsadm 21319 21286   0   Feb 09 ?           0:37 ms.sapIDS_DVEBMGS00 pf=/usr/sap/IDS/SYS/profile/IDS_DVEBMGS00_idesecc
  idsadm 10245  9959   0 19:17:15 pts/2       0:00 grep ms.sapIDS
idesecc:idsadm 15%
```

The ms process in Unix indicates the message server

Other processes

icman – This process is started in both Unix and Windows as icman , visible with the Task Manager and with the ps -ef command

gwrd – You can find the Gateway process by seeing gwrd.exe in the Task Manager or using ps –ef | grep gwrd command in unix

saposcol - Visible in Task Manager and Unix OS with the same name

Starting SAP from the MMC

EXERCISE

Login into the Windows Remote Desktop

Start Oracle Database Instance from the Services Panel

Start the AS ABAP Central Services

Start the AS ABAP Central Instance

Start the AS ABAP Dialog Instance

Explore the various services started under MMC

Open Windows Task Manager and correlate the disp+work work processes with the total number of dispatcher and ABAP work processes

Display the Look and Feel of the SAP Start , Default and Instance Profiles

Starting SAP from the Unix Command Line

EXERCISE

Login with <sid>adm into the SAP Host

Change to ora<sid> user

Start Oracle Database Instance from the SQL Prompt

Command : $ sqlplus “/ as sysdba”

SQL > startup

Check if the Oracle process has started using $ ps -ef | grep ora

Exit ora<sid> user

Start the SAP application using startsap command

Start the SAP Dialog instance seperately

Run the ps -ef | grep <sid> command

Lunch BREAK

Overview of AS ABAP Operations – SAP Logs & Trace Files

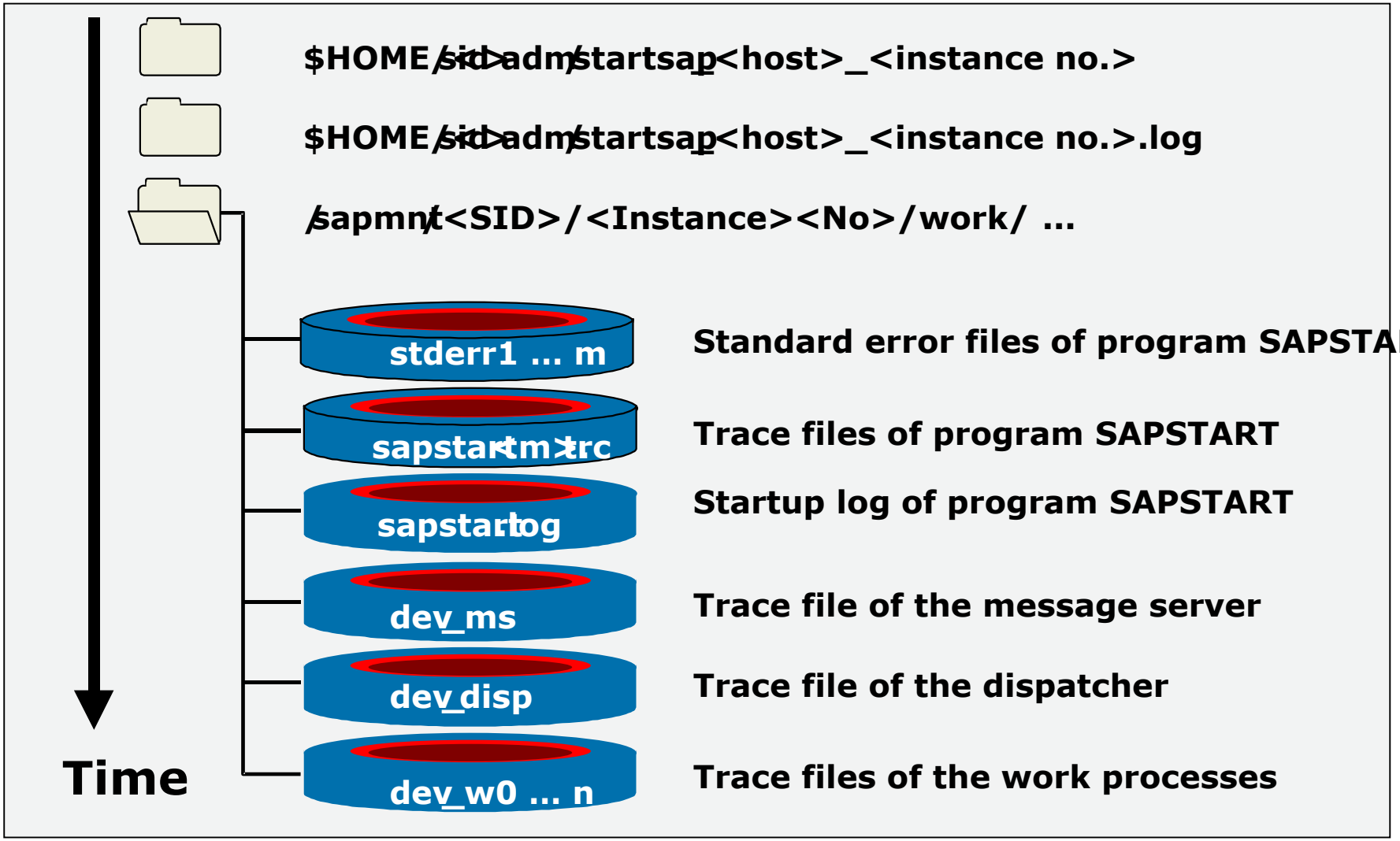
SAP System Logs & Traces

During the starting of SAP system , events are written to log files.

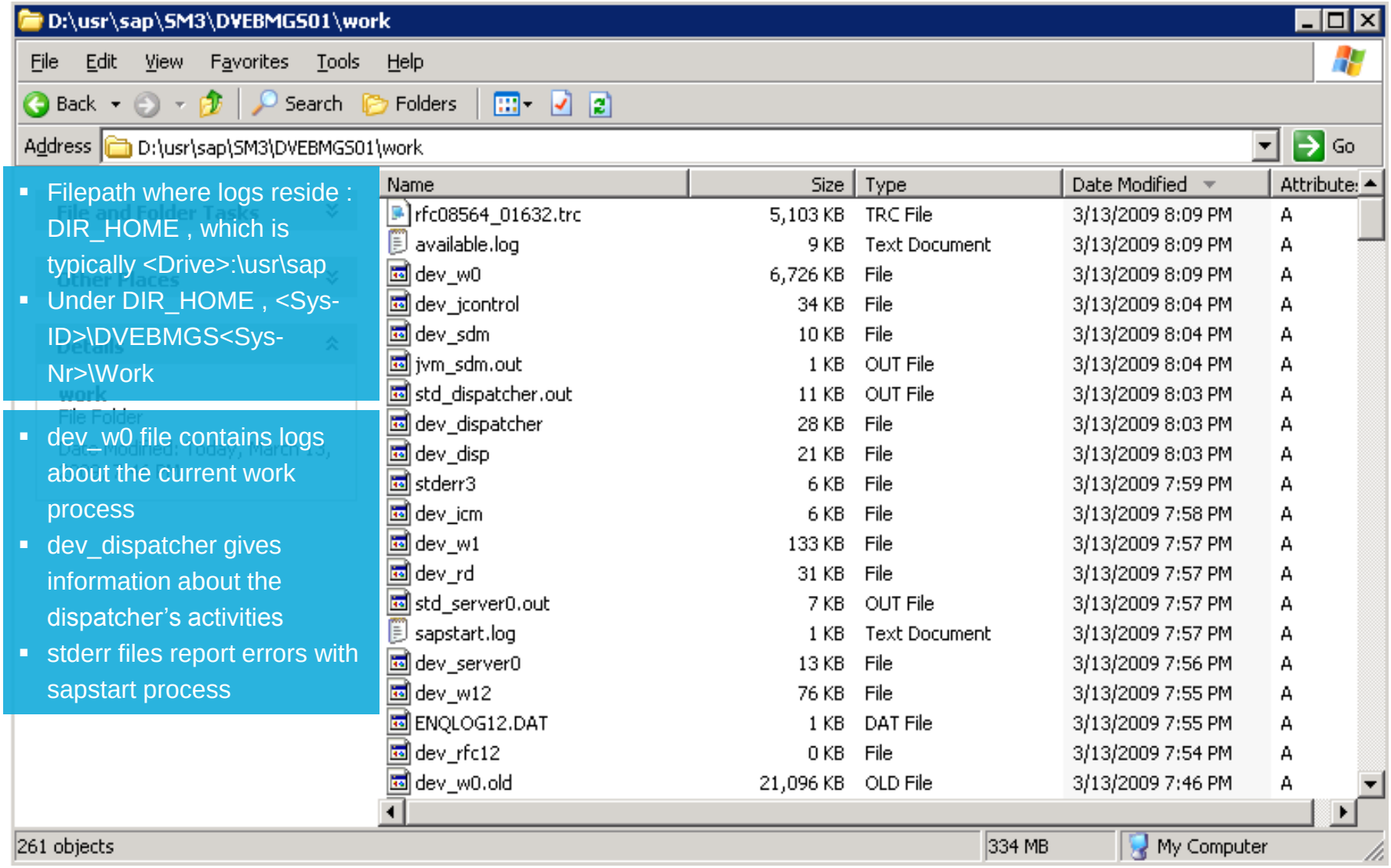
These files are extremely important from the point of view of identifying and troubleshooting problems

Logs of the SAP start process are stored in the filesystem and can be opened and read by the <sid>adm user

SAP System Logs & Traces



Example in Windows



- Filepath where logs reside : DIR_HOME , which is typically <Drive>:\usr\sap
- Under DIR_HOME , <Sys-ID>\DVEBMGS<Sys-Nr>\Work

- dev_w0 file contains logs about the current work process
- dev_dispatcher gives information about the dispatcher's activities
- stderr files report errors with sapstart process

Example in Unix

```
idesecc:idsadm 40% ls -alt | more
total 4374250
-rwxr-xr-x   1 idsadm   sapsys      4698 Mar 13 20:05 available.log
-rw-r--r--   1 idsadm   sapsys  16213266 Mar 13 20:04 dev_w1
-rw-r--r--   1 idsadm   sapsys  17697453 Mar 13 20:04 rfc21324_00006.trc
-rw-r--r--   1 idsadm   sapsys    907494 Mar 13 20:04 dev_w2
-rw-r--r--   1 idsadm   sapsys   3920512 Mar 13 20:04 dev_w0
-rw-r--r--   1 idsadm   sapsys     58487 Mar 13 20:00 dev_rfc0
-rw-r--r--   1 idsadm   sapsys  12212839 Mar 13 20:00 dev_icm
-rw-r--r--   1 idsadm   sapsys    458840 Mar 13 20:00 dev_w5
-rw-r--r--   1 idsadm   sapsys   8249131 Mar 13 19:40 dev_w13
-rwxr-xr-x   1 idsadm   sapsys     97328 Mar 13 19:38 ENQLOG13
-rw-r--r--   1 idsadm   sapsys         0 Mar 13 19:38 dev_rfc13
-rw-r--r--   1 idsadm   sapsys    188743 Mar 13 19:38 dev_disp
-rwxr-xr-x   1 idsadm   sapsys    302242 Mar 13 19:38 stdout1
-rw-r--r--   1 idsadm   sapsys   1168401 Mar 13 19:27 dev_w15
-rw-r--r--   1 idsadm   sapsys    181083 Mar 13 19:10 dev_w16
-rw-r--r--   1 idsadm   sapsys   1173285 Mar 13 19:10 dev_w14
-rw-r--r--   1 idsadm   sapsys      9766 Mar 13 18:31 dev_w19
-rw-r--r--   1 idsadm   sapsys     23644 Mar 13 18:31 dev_rfc1
-rw-r--r--   1 idsadm   sapsys    226132 Mar 13 18:30 dev_w6
-rw-r--r--   1 idsadm   sapsys       440 Mar 13 18:30 dev_rfc5
drwxr-xr-x   2 idsadm   sapsys     12288 Mar 13 18:27 .
-rwxr-xr-x   1 idsadm   sapsys      7672 Mar 13 16:36 ENQLOG14
-rw-r--r--   1 idsadm   sapsys         0 Mar 13 16:36 dev_rfc14
-rwxr-xr-x   1 idsadm   sapsys     12040 Mar 13 16:16 ENQLOG15
-rw-r--r--   1 idsadm   sapsys         0 Mar 13 16:16 dev_rfc15
-rwxr-xr-x   1 idsadm   sapsys     31472 Mar 13 14:57 ENQLOG01
-rwxr-xr-x   1 idsadm   sapsys       392 Mar 13 14:56 ENQLOG05
-rw-r--r--   1 idsadm   sapsys      1033 Mar 13 14:56 dev_rfc2
-rw-r--r--   1 idsadm   sapsys     19692 Mar 13 14:56 dev_w4
-rw-r--r--   1 idsadm   sapsys    268170 Mar 13 14:55 dev_w8
-rw-r--r--   1 idsadm   sapsys         0 Mar 13 14:54 dev_rfc6
-rwxr-xr-x   1 idsadm   sapsys     18424 Mar 13 14:53 ENQLOG00
-rwxr-xr-x   1 idsadm   sapsys      3696 Mar 13 14:53 ENQLOG06
-rwxr-xr-x   1 idsadm   sapsys       784 Mar 13 14:52 ENQLOG02
-rw-r--r--   1 idsadm   sapsys    605127 Mar 13 14:52 dev_w3
-rw-r--r--   1 idsadm   sapsys      2887 Mar 13 14:51 dev_rfc7
-rw-r--r--   1 idsadm   sapsys    370040 Mar 13 14:51 dev_w7
-rw-r--r--   1 idsadm   sapsys    205781 Mar 13 14:49 dev_w9
-rw-r--r--   1 idsadm   sapsys    150209 Mar 13 14:46 dev_w10
--More--
```

- The path is typically : DIR_HOME , which is almost always /usr/sap
- Underneath DIR_HOME : <DIR_HOME>/Sys-ID/DVEBMGS<Sys-Nr>/work

```
idesecc:idsadm 42% pwd
/usr/sap/IDS/DVEBMGS00/work
idesecc:idsadm 43%
```

- dev_w0 work process contains information about the latest ABAP work process.But it can happen at time that the other work processes may fail or create errors.If that is the case , one has to identify the work process by its number and open the log file and examine the issue

Information about Trace files

During the start process, the STDERR<n> log files are created by the SAP service.

The starting processes write to the individual files, depending on the sequence in which they are listed in the start profile. The contents of these log files therefore depends on the individual system setup, and could, for example, be as follows:

STDERR1: Information about the start process of the database system.

STDERR2: Information about the start process of the message server.

STDERR3: Information about the start process of the dispatcher.

You can set the level of detail of the logged information to four levels using the rdisp/TRACE profile parameter. The possible values for this parameter are:

0: Errors only

1: Error messages and warnings (default)

2: Error messages and a short trace

3: Error messages and a complete trace

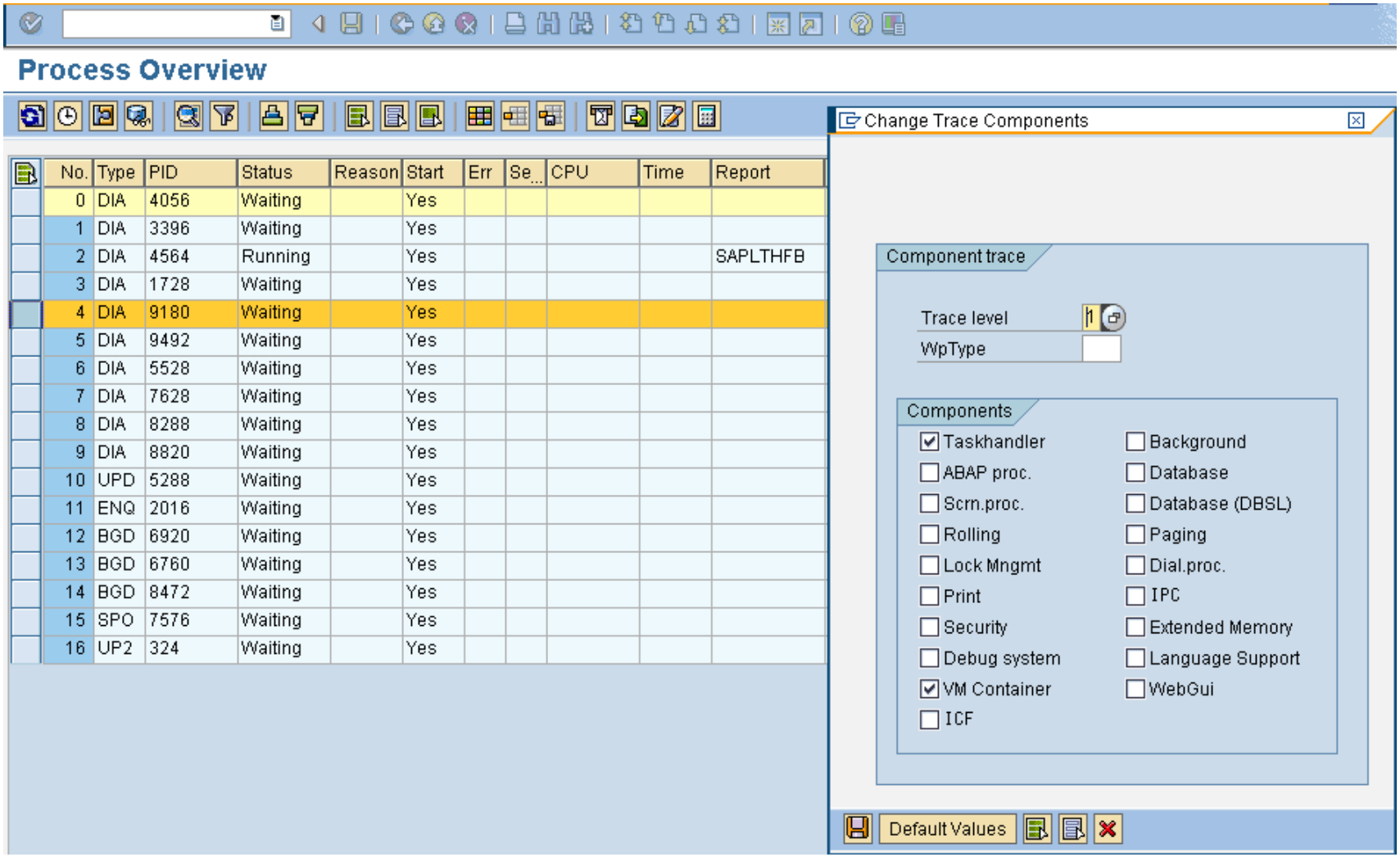
Continued..

The rdisp/TRACE parameter has to be set explicitly in the instance profile

The higher the trace level, the larger the amount of logged information, and therefore the larger the size of the files. You should therefore only increase the default value for short periods for problem analysis

It is possible to set trace level for individual work processes in SM50 transaction

Example in Windows



Troubleshooting using logs & traces

If the SAP system does not start correctly, this can be due to a variety of reasons. To analyze the problem, proceed as follows:

Check the error messages and warnings of the respective operating system with the corresponding operating system tools.

Check the status of the respective database system using the error log files. This will taken up during the course “Database Administration”

Check the start log in the SAP MMC. Select the instance that is affected, and from the context menu, choose List Developer Traces.

Check the error files stderr<n> that were created by the SAP Service.

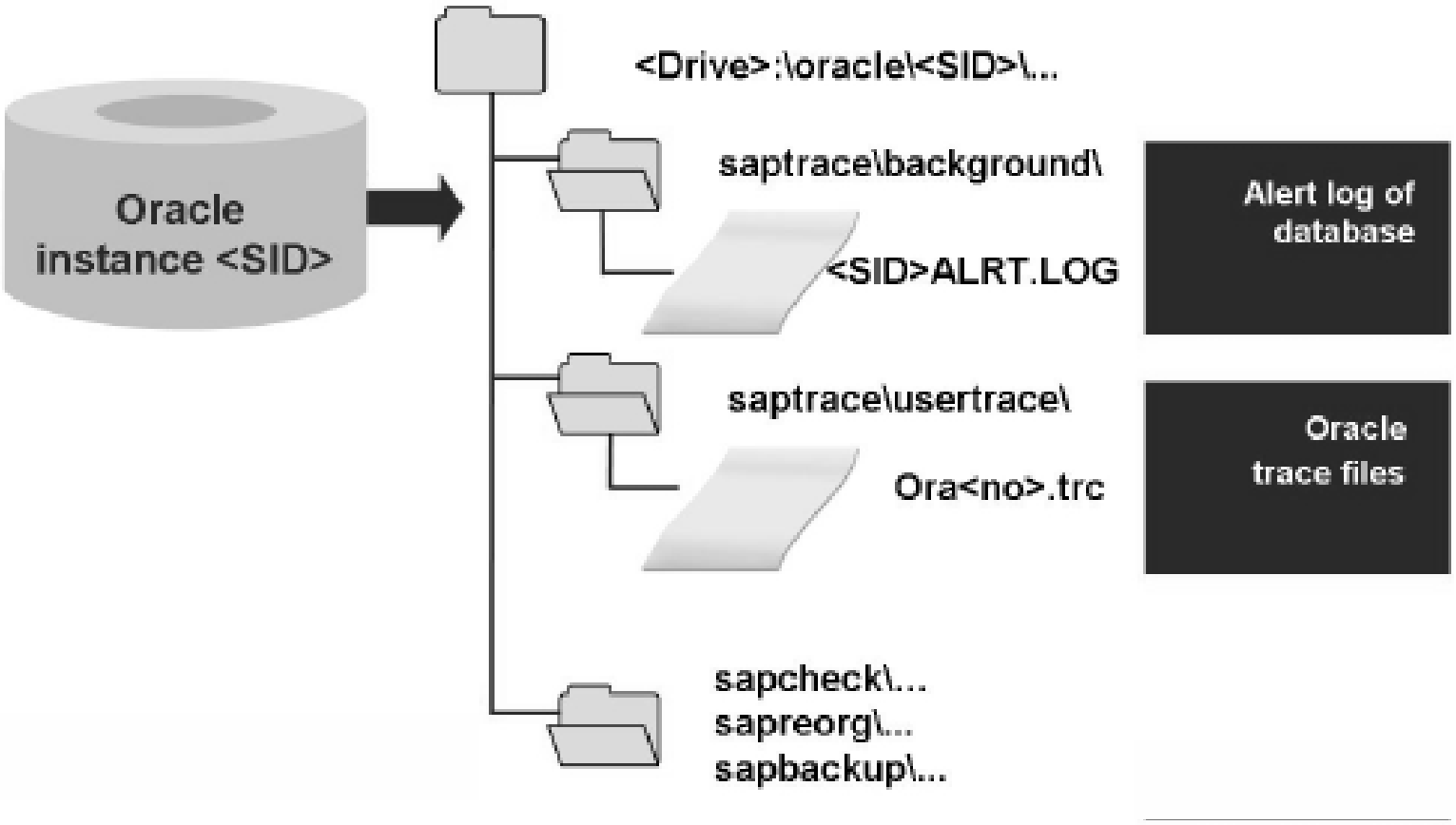
Check the trace files of the individual SAP work processes:

Continued..

- dev_ms: Developer trace for the message server
- dev_rd: Developer trace for the gateway
- dev_disp: Developer trace for the dispatcher
- dev_w<m> (m is the work process number): Developer trace for the work processes

If you can still log on to the SAP system, check the system log of the SAP system using transaction SM2

Oracle Logs & Trace files



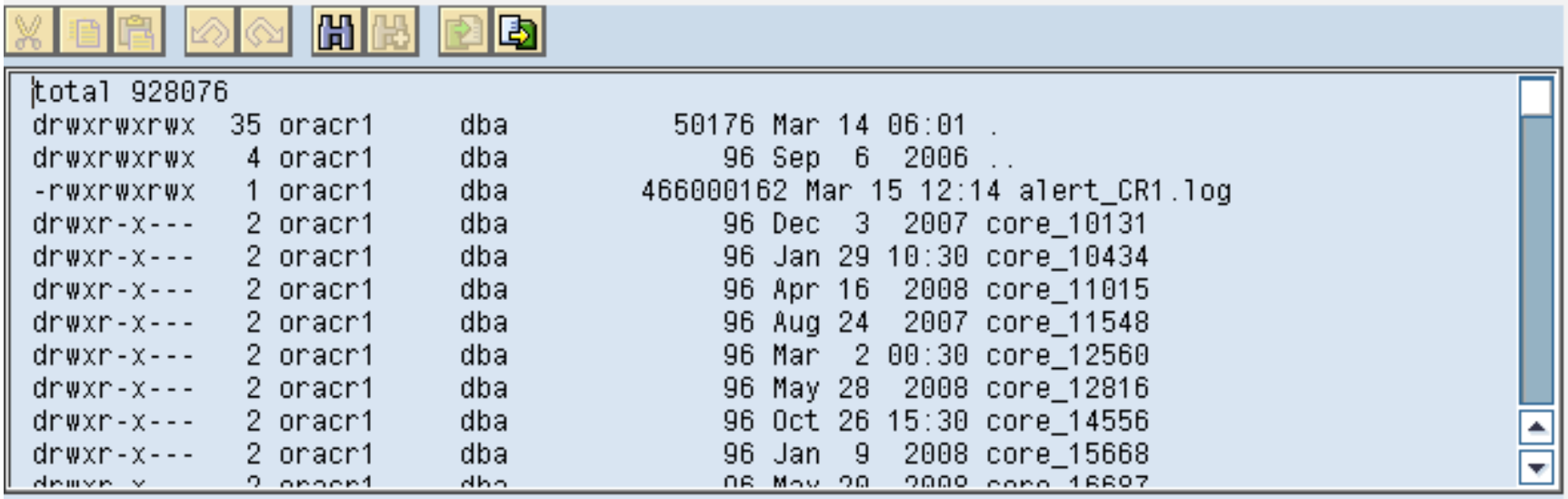
Oracle Alert Log File

Definition

Operating system command

ls

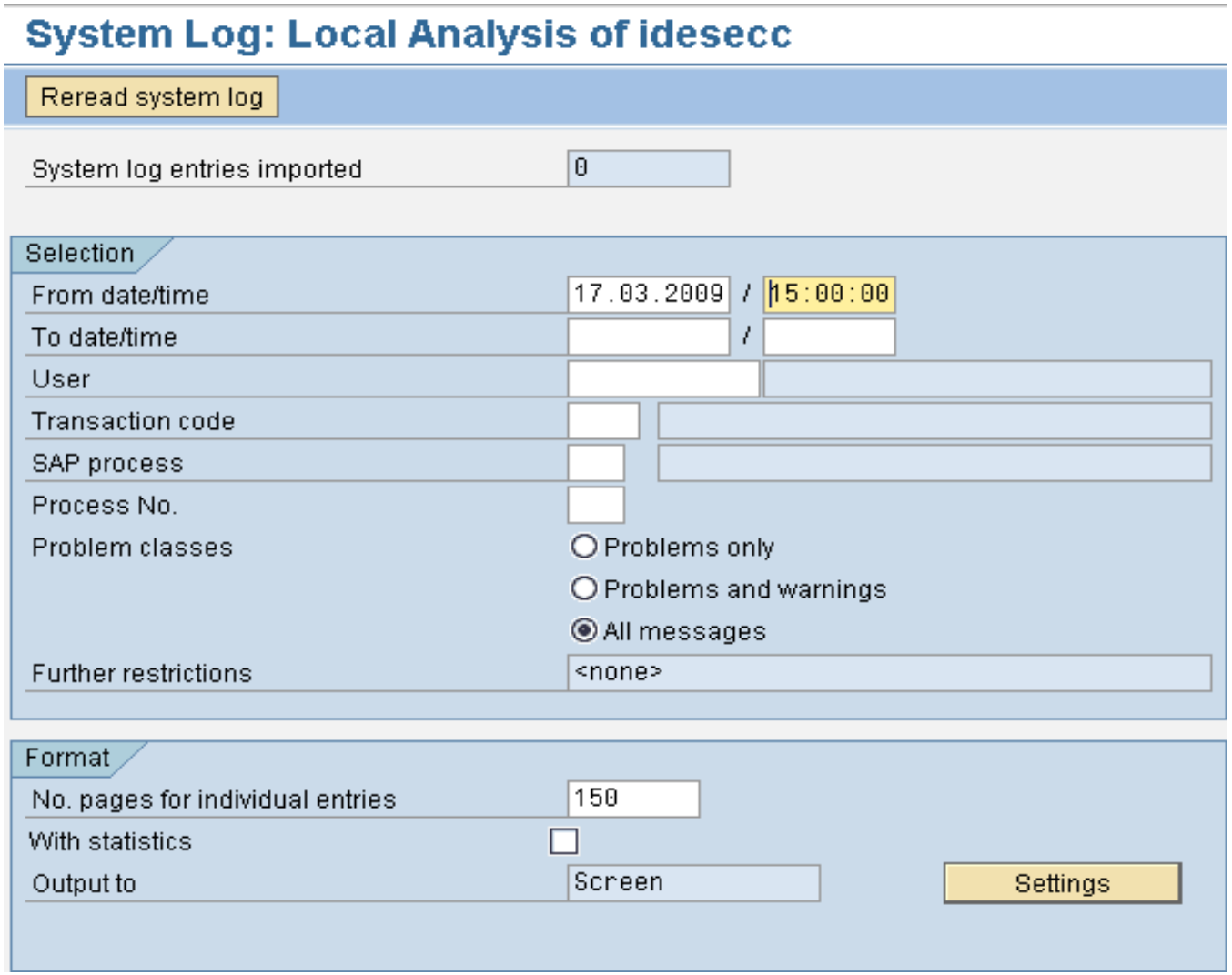
-la /oracle/CR1/saptrace/background



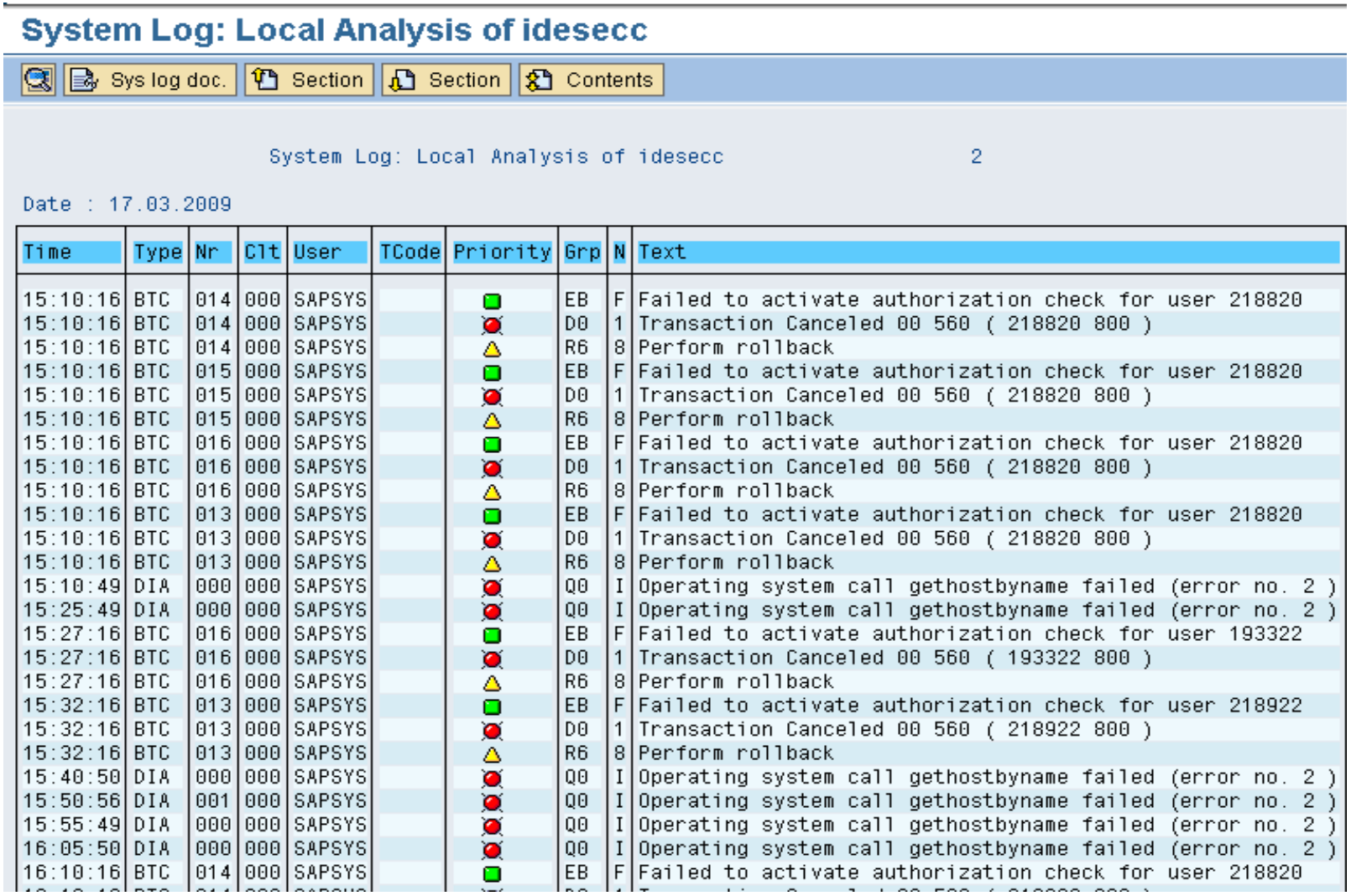
```
total 928076
drwxrwxrwx  35 oracr1     dba          50176 Mar 14 06:01 .
drwxrwxrwx   4 oracr1     dba             96 Sep  6  2006 ..
-rwxrwxrwx   1 oracr1     dba      466000162 Mar 15 12:14 alert_CR1.log
drwxr-x---   2 oracr1     dba             96 Dec  3  2007 core_10131
drwxr-x---   2 oracr1     dba             96 Jan 29 10:30 core_10434
drwxr-x---   2 oracr1     dba             96 Apr 16  2008 core_11015
drwxr-x---   2 oracr1     dba             96 Aug 24  2007 core_11548
drwxr-x---   2 oracr1     dba             96 Mar  2 00:30 core_12560
drwxr-x---   2 oracr1     dba             96 May 28  2008 core_12816
drwxr-x---   2 oracr1     dba             96 Oct 26 15:30 core_14556
drwxr-x---   2 oracr1     dba             96 Jan  9  2008 core_15668
```

The oracle alert log file is the most important file for troubleshooting purposes.All Oracle errors are captured in this log file , and it continues to grow as a single file.The location of this file is in /oracle/<SID>/saptrace/background

Analyzing System Logs – SM21



Analyzing System Logs – SM21



System Log: Local Analysis of idesecc

Sys log doc. | Section | Section | Contents

System Log: Local Analysis of idesecc 2

Date : 17.03.2009

Time	Type	Nr	Clt	User	TCode	Priority	Grp	N	Text
15:10:16	BTC	014	000	SAPSYS			EB	F	Failed to activate authorization check for user 218820
15:10:16	BTC	014	000	SAPSYS			D0	1	Transaction Canceled 00 560 (218820 800)
15:10:16	BTC	014	000	SAPSYS			R6	8	Perform rollback
15:10:16	BTC	015	000	SAPSYS			EB	F	Failed to activate authorization check for user 218820
15:10:16	BTC	015	000	SAPSYS			D0	1	Transaction Canceled 00 560 (218820 800)
15:10:16	BTC	015	000	SAPSYS			R6	8	Perform rollback
15:10:16	BTC	016	000	SAPSYS			EB	F	Failed to activate authorization check for user 218820
15:10:16	BTC	016	000	SAPSYS			D0	1	Transaction Canceled 00 560 (218820 800)
15:10:16	BTC	016	000	SAPSYS			R6	8	Perform rollback
15:10:16	BTC	013	000	SAPSYS			EB	F	Failed to activate authorization check for user 218820
15:10:16	BTC	013	000	SAPSYS			D0	1	Transaction Canceled 00 560 (218820 800)
15:10:16	BTC	013	000	SAPSYS			R6	8	Perform rollback
15:10:49	DIA	000	000	SAPSYS			Q0	I	Operating system call gethostbyname failed (error no. 2)
15:25:49	DIA	000	000	SAPSYS			Q0	I	Operating system call gethostbyname failed (error no. 2)
15:27:16	BTC	016	000	SAPSYS			EB	F	Failed to activate authorization check for user 193322
15:27:16	BTC	016	000	SAPSYS			D0	1	Transaction Canceled 00 560 (193322 800)
15:27:16	BTC	016	000	SAPSYS			R6	8	Perform rollback
15:32:16	BTC	013	000	SAPSYS			EB	F	Failed to activate authorization check for user 218922
15:32:16	BTC	013	000	SAPSYS			D0	1	Transaction Canceled 00 560 (218922 800)
15:32:16	BTC	013	000	SAPSYS			R6	8	Perform rollback
15:40:50	DIA	000	000	SAPSYS			Q0	I	Operating system call gethostbyname failed (error no. 2)
15:50:56	DIA	001	000	SAPSYS			Q0	I	Operating system call gethostbyname failed (error no. 2)
15:55:49	DIA	000	000	SAPSYS			Q0	I	Operating system call gethostbyname failed (error no. 2)
16:05:50	DIA	000	000	SAPSYS			Q0	I	Operating system call gethostbyname failed (error no. 2)
16:10:16	BTC	014	000	SAPSYS			EB	F	Failed to activate authorization check for user 218820

BREAK

Overview of AS ABAP Operations – System Shutdown Checks

Shutdown of SAP Systems

Conditions for Stopping an SAP System

The SAP system may need to be stopped due to maintenance purposes.

These include activities such as :

Taking an offline database backup

Upgrading the SAP kernel

Activation of modified profile parameters

Upgrade of the SAP instance

Restarting due to system performance issues

Sequence of Stopping an SAP system

Stop all Dialog Instances one by one (there is no sequence to be followed here)

Continued..

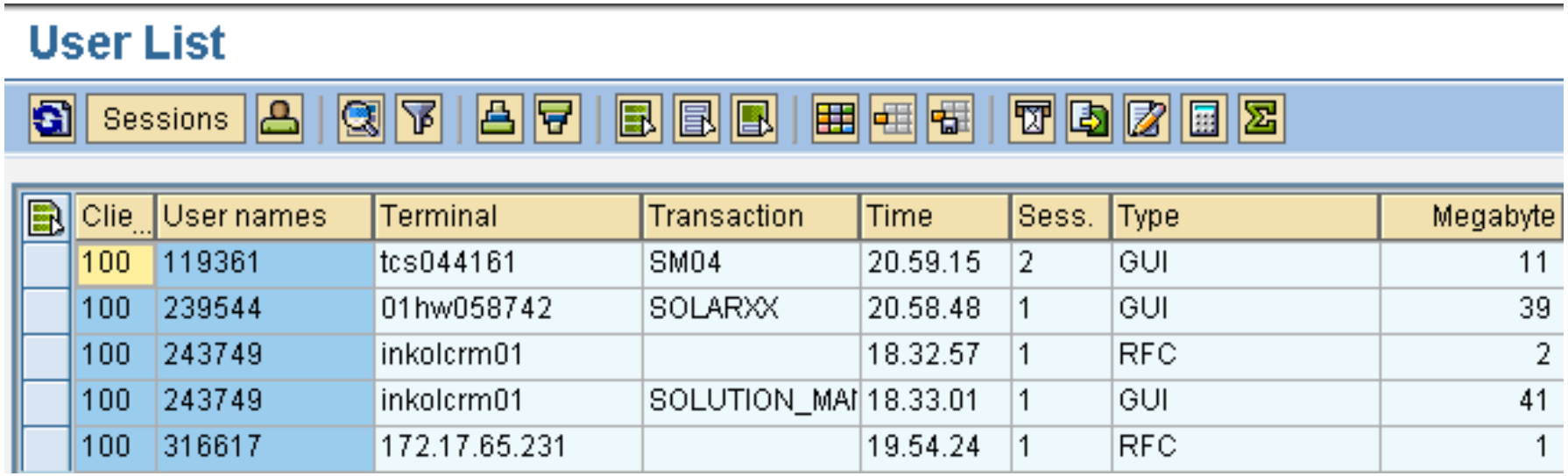
Stop the Central Instance

Stop the Central Services Instance if it is on a separate host other than the Central Instance

Finally , Stop the Database Instance

Checks to be performed before shutting down

Check transaction SM04 to find out if users are active



Clie...	User names	Terminal	Transaction	Time	Sess.	Type	Megabyte
100	119361	tcs044161	SM04	20.59.15	2	GUI	11
100	239544	01hw058742	SOLARXX	20.58.48	1	GUI	39
100	243749	inkolcrm01		18.32.57	1	RFC	2
100	243749	inkolcrm01	SOLUTION_MAI	18.33.01	1	GUI	41
100	316617	172.17.65.231		19.54.24	1	RFC	1

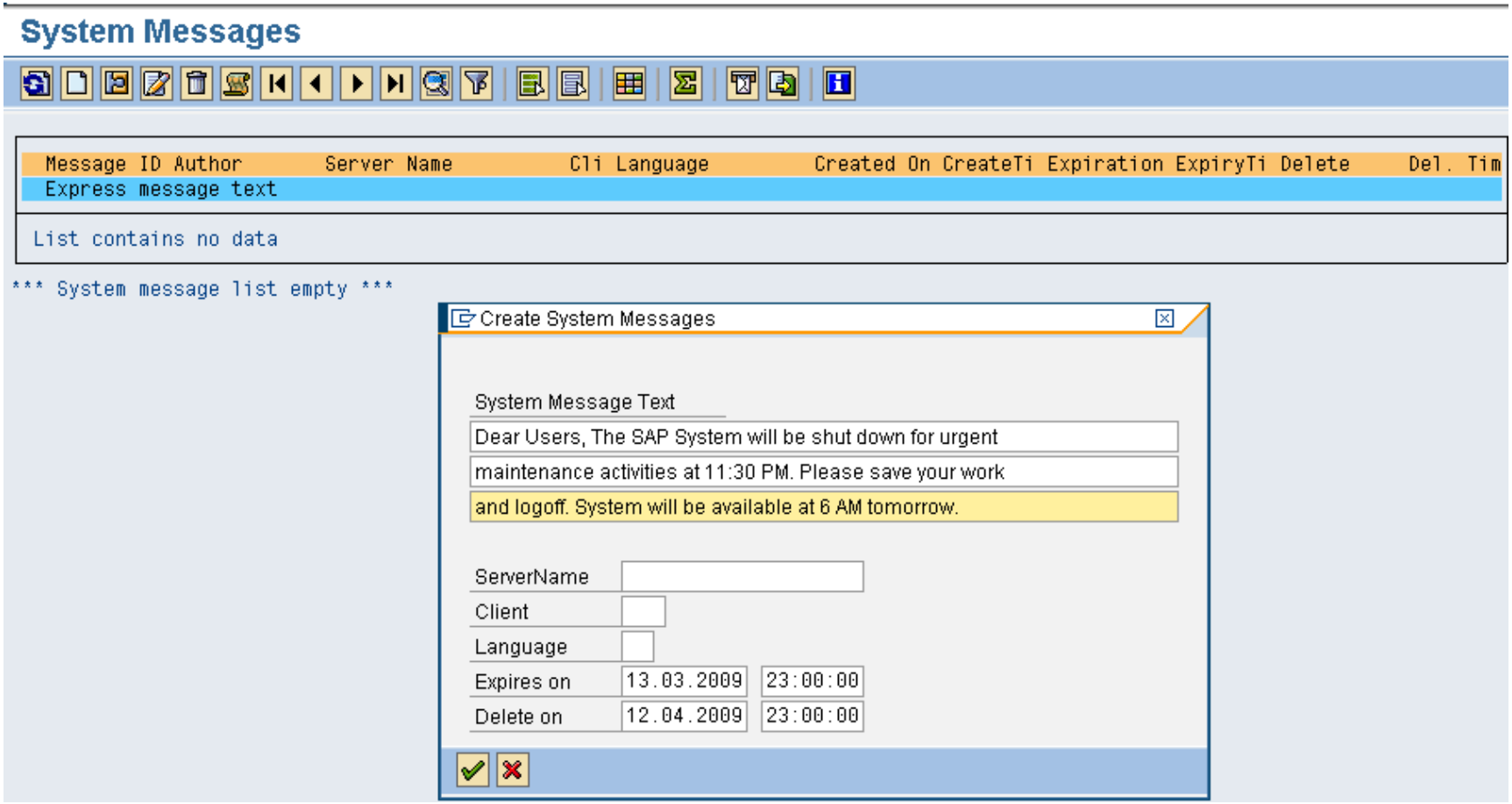
It is a best practice to post a message on the SAP system informing the active users about the decision to shut down the system

You can create a system message using transaction SM02

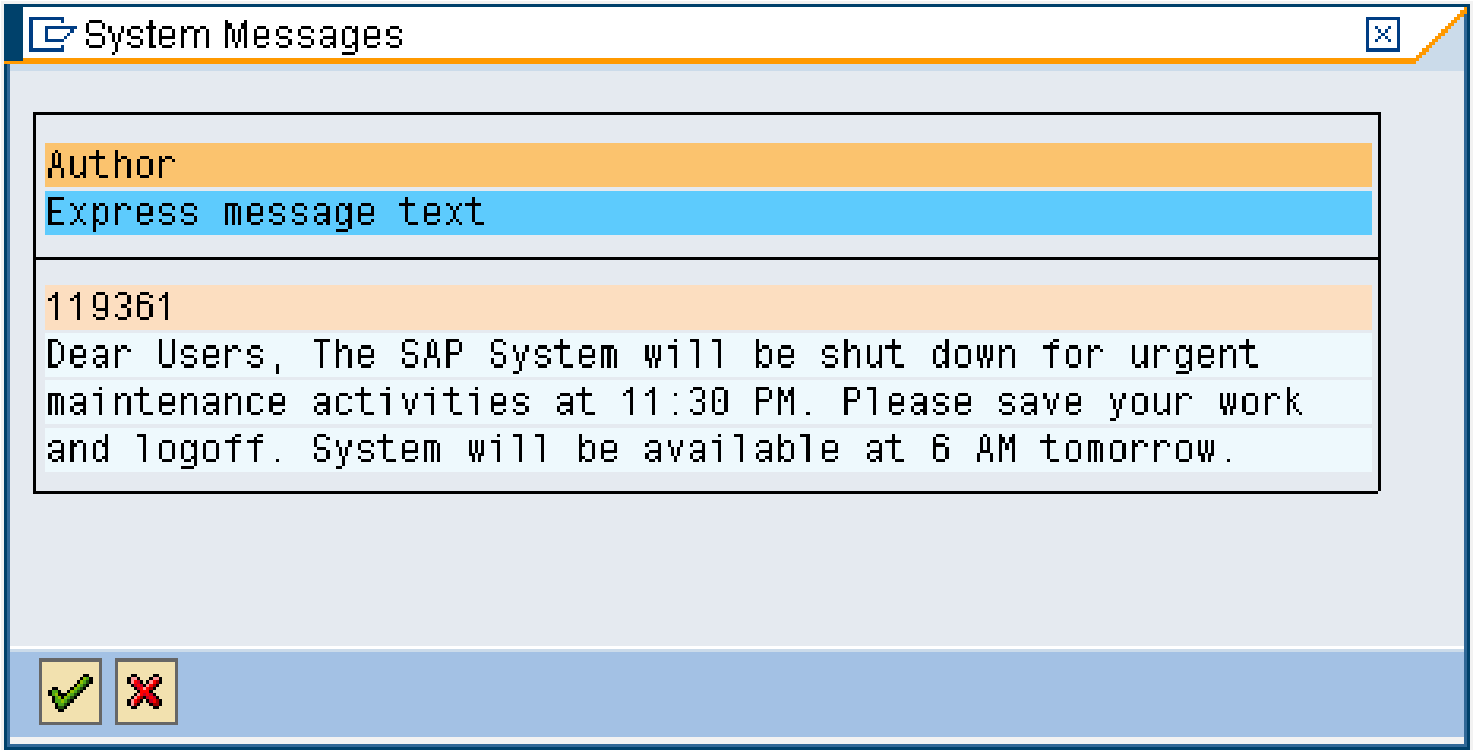
Posting Messages – SM02

Create a system wide message on SM02

This will be displayed on all instances , application and dialog

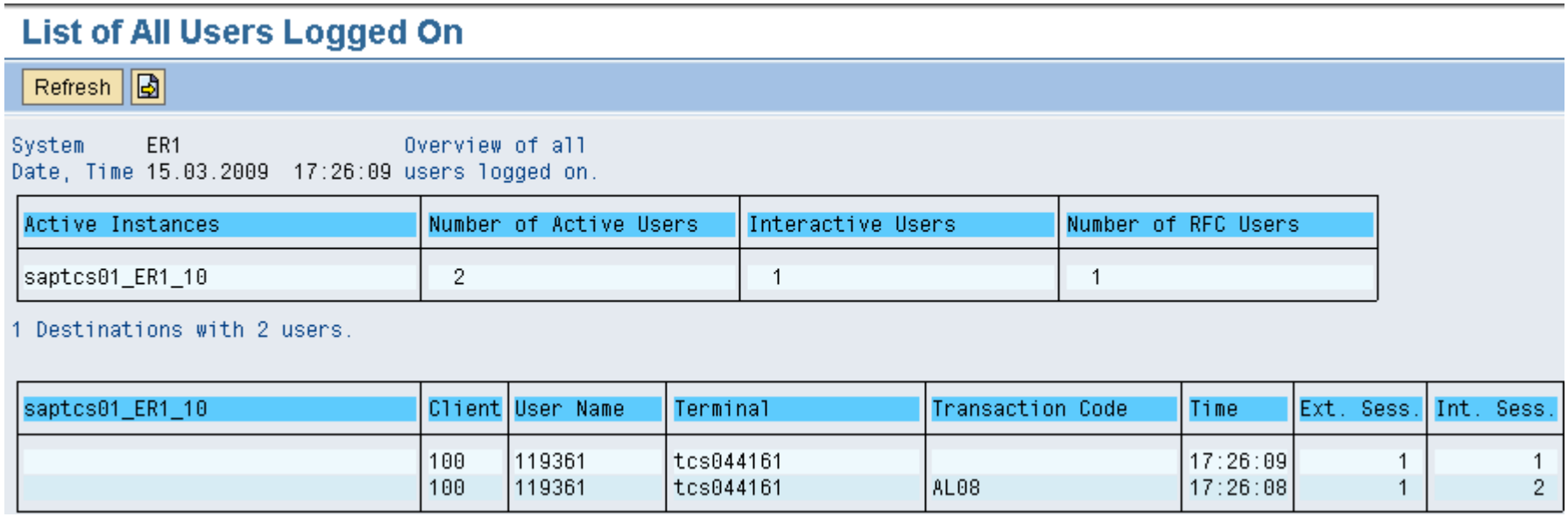


Message Visible to Active Users



Check for All users using AL08

SM04 command will show only the users logged onto the particular dialog instance.



List of All Users Logged On

Refresh

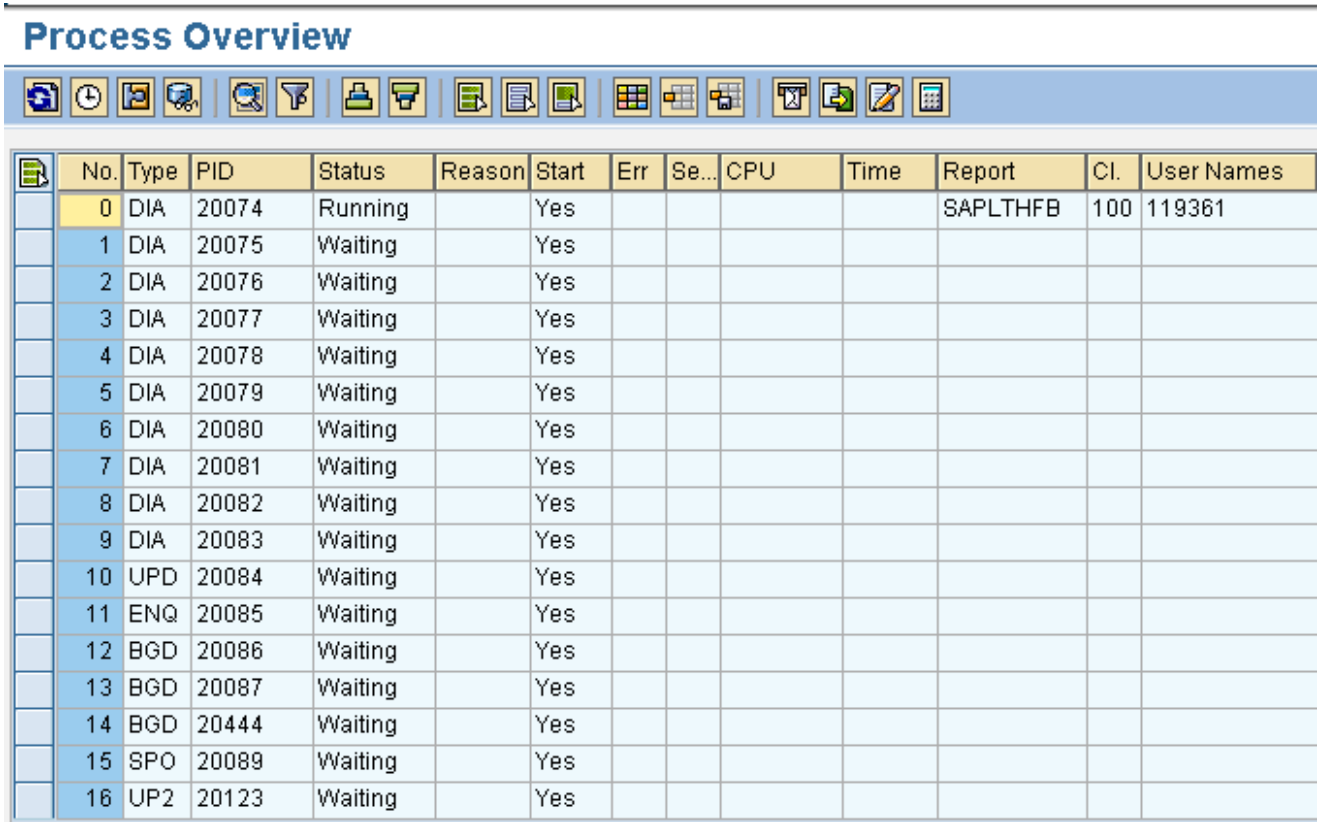
System ER1 Overview of all
Date, Time 15.03.2009 17:26:09 users logged on.

Active Instances	Number of Active Users	Interactive Users	Number of RFC Users
saptcs01_ER1_10	2	1	1

1 Destinations with 2 users.

saptcs01_ER1_10	Client	User Name	Terminal	Transaction Code	Time	Ext. Sess.	Int. Sess.
	100	119361	tcs044161		17:26:09	1	1
	100	119361	tcs044161	AL08	17:26:08	1	2

Check for Background Processes – SM50



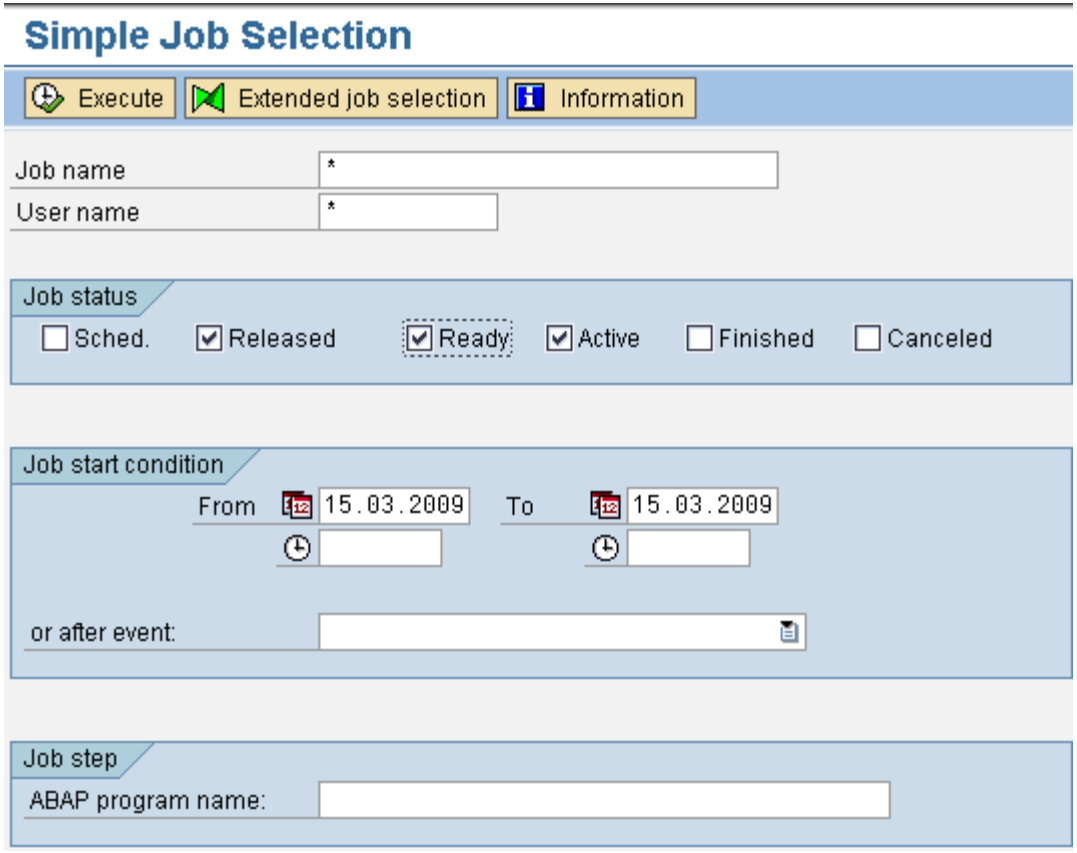
Process Overview

No.	Type	PID	Status	Reason	Start	Err	Se...	CPU	Time	Report	Cl.	User Names
0	DIA	20074	Running		Yes					SAPLTHFB	100	119361
1	DIA	20075	Waiting		Yes							
2	DIA	20076	Waiting		Yes							
3	DIA	20077	Waiting		Yes							
4	DIA	20078	Waiting		Yes							
5	DIA	20079	Waiting		Yes							
6	DIA	20080	Waiting		Yes							
7	DIA	20081	Waiting		Yes							
8	DIA	20082	Waiting		Yes							
9	DIA	20083	Waiting		Yes							
10	UPD	20084	Waiting		Yes							
11	ENQ	20085	Waiting		Yes							
12	BGD	20086	Waiting		Yes							
13	BGD	20087	Waiting		Yes							
14	BGD	20444	Waiting		Yes							
15	SPO	20089	Waiting		Yes							
16	UP2	20123	Waiting		Yes							

Check if there are no critical background jobs running before shutdown.If there are such jobs , identify the job owner and inform them about the shutdown reasons.Also plan to restart the jobs after the system is up and running

NOTE : Transaction SM51 is the correct transaction to use , for viewing processes running for different dialog instances

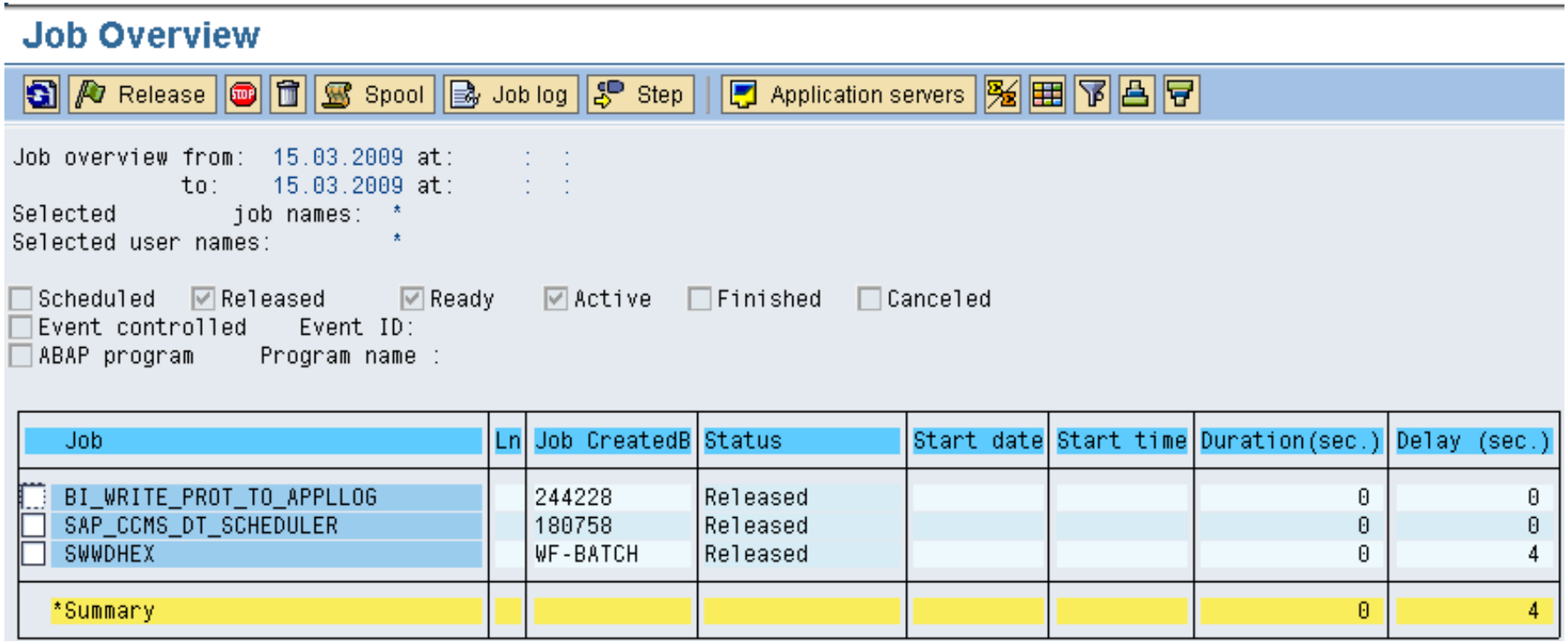
Check for Background Jobs – SM37



Check using SM37 , for released , ready and active jobs.

During the course of shutdown , the active and just released jobs might fail , and cause inconsistencies in transaction processing. If so , speak to the Job owner and ask them to reschedule the jobs or cancel the active ones.

Currently Active Jobs – SM37



Job Overview

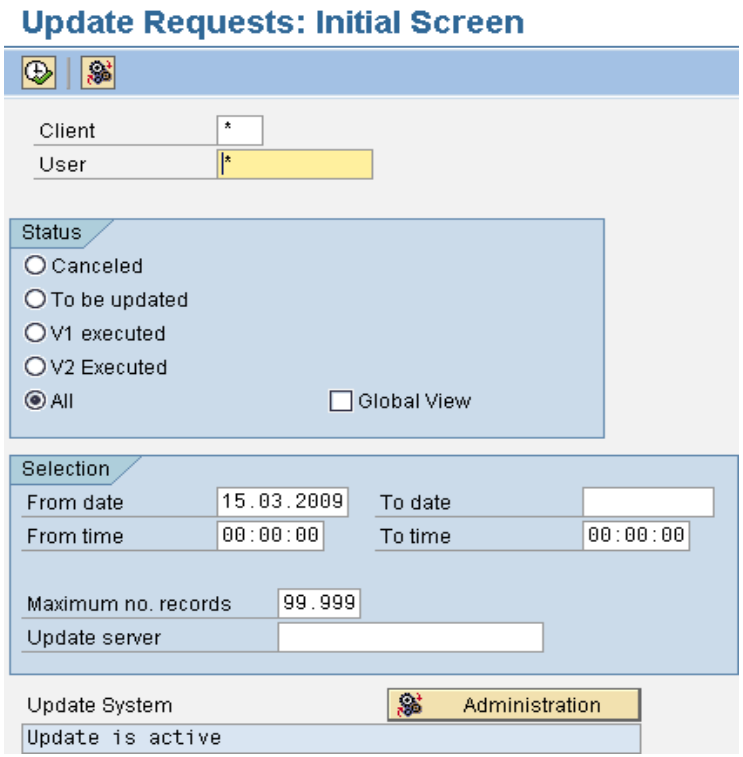
Release | Spool | Job log | Step | Application servers

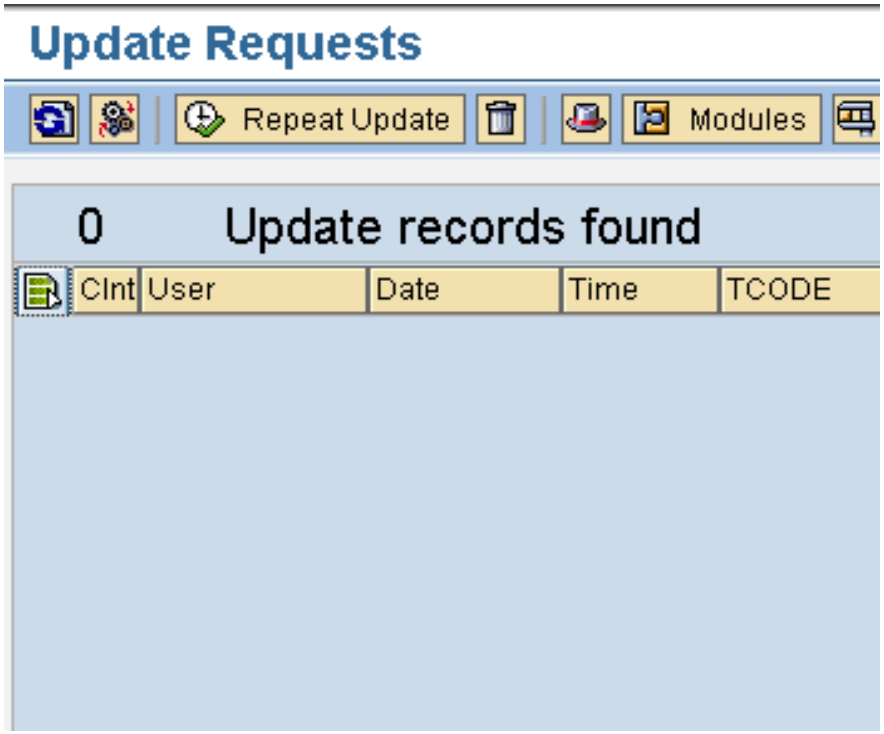
Job overview from: 15.03.2009 at: : :
to: 15.03.2009 at: : :
Selected job names: *
Selected user names: *

☐ Scheduled ☑ Released ☑ Ready ☑ Active ☐ Finished ☐ Canceled
☐ Event controlled Event ID:
☐ ABAP program Program name :

Job	Ln	Job CreatedB	Status	Start date	Start time	Duration(sec.)	Delay (sec.)
BI_WRITE_PROT_TO_APPLLOG		244228	Released			0	0
SAP_CCMS_DT_SCHEDULER		180758	Released			0	0
SWWDHEX		WF-BATCH	Released			0	4
*Summary						0	4

Check for Updates – SM13



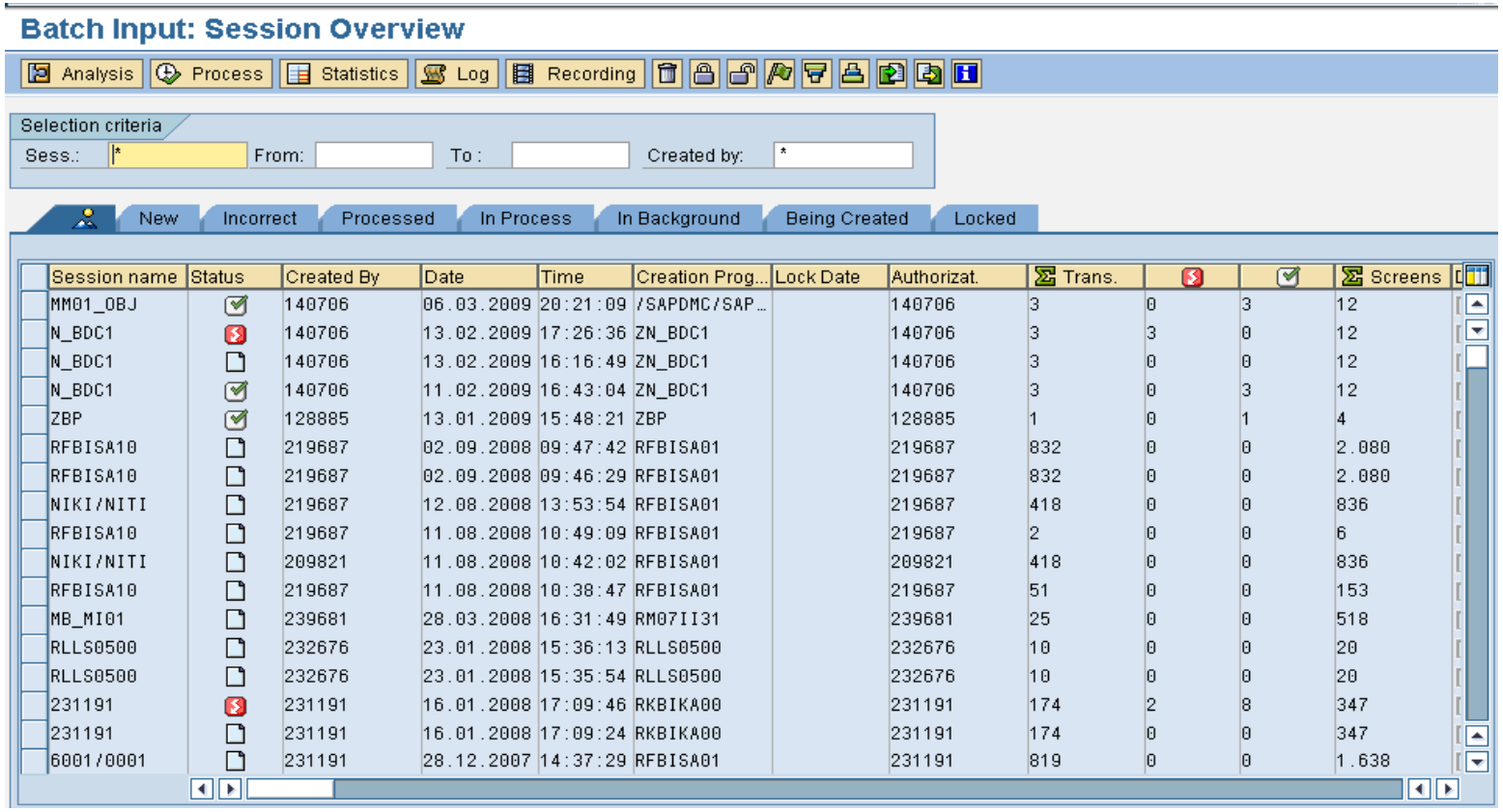


It is important to check if there are any open updates pending

If there are any open updates , check the logs and trace files to identify the reason for the delay. In many cases , the updates may be pending because of excessive database activities.

Before deleting any open update , always check the SQL analysis transaction ST04

Check Batch Inputs – SM35



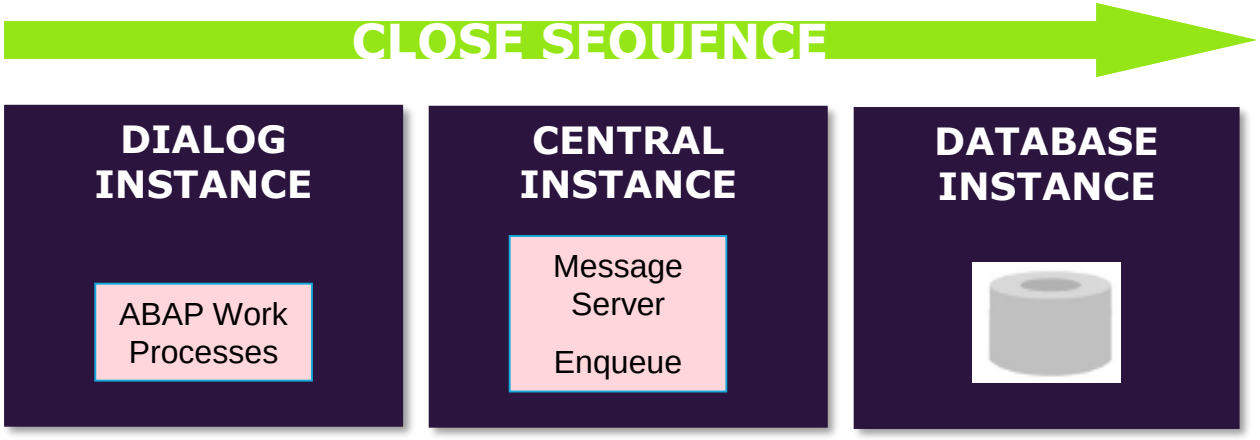
Session name	Status	Created By	Date	Time	Creation Prog...	Lock Date	Authorizat.	Σ Trans.			Σ Screens
MM01_OBJ		140706	06.03.2009	20:21:09	/SAPDMC/SAP…		140706	3	0	3	12
N_BDC1		140706	13.02.2009	17:26:36	ZN_BDC1		140706	3	3	0	12
N_BDC1		140706	13.02.2009	16:16:49	ZN_BDC1		140706	3	0	0	12
N_BDC1		140706	11.02.2009	16:43:04	ZN_BDC1		140706	3	0	3	12
ZBP		128885	13.01.2009	15:48:21	ZBP		128885	1	0	1	4
RFBISA10		219687	02.09.2008	09:47:42	RFBISA01		219687	832	0	0	2.080
RFBISA10		219687	02.09.2008	09:46:29	RFBISA01		219687	832	0	0	2.080
NIKI/NITI		219687	12.08.2008	13:53:54	RFBISA01		219687	418	0	0	836
RFBISA10		219687	11.08.2008	10:49:09	RFBISA01		219687	2	0	0	6
NIKI/NITI		209821	11.08.2008	10:42:02	RFBISA01		209821	418	0	0	836
RFBISA10		219687	11.08.2008	10:38:47	RFBISA01		219687	51	0	0	153
MB_MI01		239681	28.03.2008	16:31:49	RM07II31		239681	25	0	0	518
RLLS0500		232676	23.01.2008	15:36:13	RLLS0500		232676	10	0	0	20
RLLS0500		232676	23.01.2008	15:35:54	RLLS0500		232676	10	0	0	20
231191		231191	16.01.2008	17:09:46	RKBIKA00		231191	174	2	8	347
231191		231191	16.01.2008	17:09:24	RKBIKA00		231191	174	0	0	347
6001/0001		231191	28.12.2007	14:37:29	RFBISA01		231191	819	0	0	1.638

Batch inputs are sessions which are recorded by users and can contain a sequence of reports and transactions where certain data is entered. This session is periodically run depending on the business need. Make sure that there are no active batch inputs during shutdown

Sequence of Shutdown

The SAP System comprises of Database Instance , Central Services and finally the multiple Dialog Instances

The sequence of shutdown is extremely important. Stopping the processes out of sequence will result in an inconsistent state and may spawn zombie processes on the OS which will have to killed



Stopping SAP System on Windows

On Windows shutdown is accomplished by the SAP Management Console.

Before you stop the SAP system, check which users are logged on to your system. Send a system message

Stop the SAP system using the SAP Management Console. To do this, log on to the server for your training system with the Terminal Server Client.

Stopping SAP System on Unix

Stopping the SAP system using a command call from Unix Command Line

Log on to the server with the user <sid>adm over a Telnet connection.

Check whether your SAP system is running at operating system level.

Enter the command stopsap to stop an instance. To stop the entire SAP system,first stop the dialog instance and then the central instance.

The command stopsap only stops the selected instance. If the database is to be stopped, this must be done using database tools.

Stopping Database - Oracle

Switch to ora<sid> user on Unix systems

Run the sql command : sqlplus “/ as sysdba”

On the SQL prompt , issue the command >SHUTDOWN

Once the shutdown confirmation screen is shown , check if the oracle processes have shutdown normally using the command : ps –ef | grep ora. There should be any processes running , except TNS Listener process (More in later chapters)

Summary of Important BASIS Transactions

Transaction	Purpose
SM04	View Active User Sessions for the current instance
AL08	View active user sessions for all instances
SM50	Check Background Processes for current instance
SM51	Check Background Processes for all instances
SM21	Analyzing System Logs
SM66	Global Work processes overview
SM02	Post message for users
SM35	Check for Batch Input Sessions
SM37	Check scheduled , active , completed and cancelled BG Jobs
SM13	Check for failed and active updates
ST04	SQL Analyzer
RZ10,RZ11	Changing the parameter values for SAP Profile files

Normal and Exceptional Modes

Choose "normal operation" to define standard start and end times for operation modes. During normal operation, the system repeats the schedule every day, switching operation modes on and off according to the schedule. Use this mode to define your standard operation mode schedule.

Choose "exception operation" to specify a special one-time operation mode. The system switches to the operation mode only once for the time period that you specify. After the exceptional schedule ends, the system returns to the normal operation schedule. Use this mode to schedule a particular operation mode for a special purpose, such as installing an upgrade.

BREAKOUT SESSION

Transaction Walkthrough

EXERCISE

Login into the system using the userid/password provided by the instructor

Check transaction SM04 for checking all users in the system

Note to instructor : Post a message using SM02 , informing users about the shutdown

Check SM50 transaction to check the status of background processes

Check SM37 to see if there are active background jobs running

Shutdown the SAP system in the correct sequence