

Oracle

Check the settings for the following parameters in the `init<SAPSID>.ora` file. The listed values are minimum values. Use these settings to ensure smooth operation of the SAP

System:

```
shared_pool_size = 52428800
db_block_buffers = 9000
sort_area_size = 2097152
```

End of the database-specific explanations

Process Flow

You upgrade the system in several different steps.

MSCS Cluster

In an MSCS cluster configuration, all the steps, except the SAP upgrade and Kernel upgrade, need to be performed on each node of the cluster.

1. Operating system upgrade
2. Database migration or database upgrade
3. PREPARE
4. Upgrade

You must also perform different steps to prepare for running the `PREPARE` program or the upgrade.

Upgrade your oracle version supported for the present R3 system.

PREPARE

Use

Use the `PREPARE` program to prepare your SAP System for the upgrade.

- You can execute this program while the system is running.
 - It checks the requirements for the upgrade and provides further information when executing the optional module.
 - Import a number of tools into your database.
 - It copies data and programs to the upgrade directory.
- `PREPARE` performs the majority of the required checks automatically. Afterwards, you must also check the operating system, database and SAP System manually as well.

Prerequisites

You must meet a number of requirements before you run the `PREPARE` program. These are described in the section *User Actions Before Starting PREPARE*.

Features

All the actions performed by `PREPARE` execute in phases. These phases are combined into `PREPARE` modules. A complete list of the modules and the phases which execute in these modules can be found in the phase list for `PREPARE`.

The `PREPARE` modules have the following features:

- They can be mandatory or optional.
- They can have predecessors which must first be executed. For example, the analysis tools must be imported before they can be executed.
- There are `PREPARE` modules which you must only execute once and those which you can execute as often as you require.
- `PREPARE` modules can be executed individually.

The following graphic gives an overview of all the `PREPARE` modules and their predecessors.

Import Import
CD Read CD Read

Initialization Initialization

Required checks
for conversions

Required checks
for conversions

Optional
checks for
conversions

Optional
checks for
conversions

Modification
support

Modification
support

Activation
checks

Activation
checks

General
checks

General
checks

Preliminary
execution

Preliminary
execution

Parameter
entry

Parameter
entry

For more information about the contents and features of the `PREPARE` modules, see the online help for `PREPARE`. You can find it easily by choosing *Help* when selecting the modules.

Results of PREPARE

`PREPARE` writes the results for the modules that you selected for execution to the file `CHECKS.LOG`. This file is in the subdirectory `log` of the upgrade directory.

Look at this file and carry out the necessary measures based on the information it contains. To be sure that all the requirements are met, you can choose certain `PREPARE` modules more than once. If the file `CHECKS.LOG` already exists, it is overwritten each time a module is executed again. Its contents are saved in file `CHECKS.SAV`.

Creating the Upgrade Directory

Use

For the upgrade and the `PREPARE` program, you need to have a `\usr\sap\put` directory on the host with the central instance. This directory is also called the upgrade directory. The following table shows the size of this directory. The database and source release you use can change this size by up to 25%.

Required Disk Space in the Subdirectories of the Upgrade Directory

Data exe Log Remaining Total

700	100	400	400	1600
-----	-----	-----	-----	------

The Repository Switch uses dynamic sections in `\usr\sap\put\data` and `\usr\sap\put\log`. We recommend creating the directory with more space

than specified in the table above if your systems include extensive customer developments or large amounts of individual documentation. If you want to include Support Packages and add-ons in the upgrade, you also need to make these directories larger.

Additional space of up to 300 MB is also required in the directory `\usr\sap\put` for each language other than English or German.

Procedure

1. On the host with the central instance create the subdirectory `put` in the file structure `\\$(SAPGLOBALHOST)\sapmnt`.

If you cannot create the upgrade directory under the share `sapmnt`, or you could not use the default path `\usr\sap\put`, you can find more information under

If the upgrade directory `\usr\sap\put` already exists, check whether it still contains data from the previous upgrade. In this case, we recommend backing up at least `\usr\sap\put\log` for documentation purposes.

2. Make sure that the `\usr\sap\put` directory is **empty** before starting `PREPARE`.

Procedure

To substitute the SAP Kernel, proceed as follows:

1. Stop the SAP System.

2. Stop all SAP programs and all Microsoft Management Consoles. Stop the services `SAP<SAPSID>_<INSTANCENO>` and `SAPOSCOL`.

3. Before substituting the SAP Kernel, back up the existing Kernel directory.

4. To substitute the SAP Kernel, open a command prompt and go to the SAP Kernel directory `\usr\sap\<SAPSID>\sys\exe\run`.

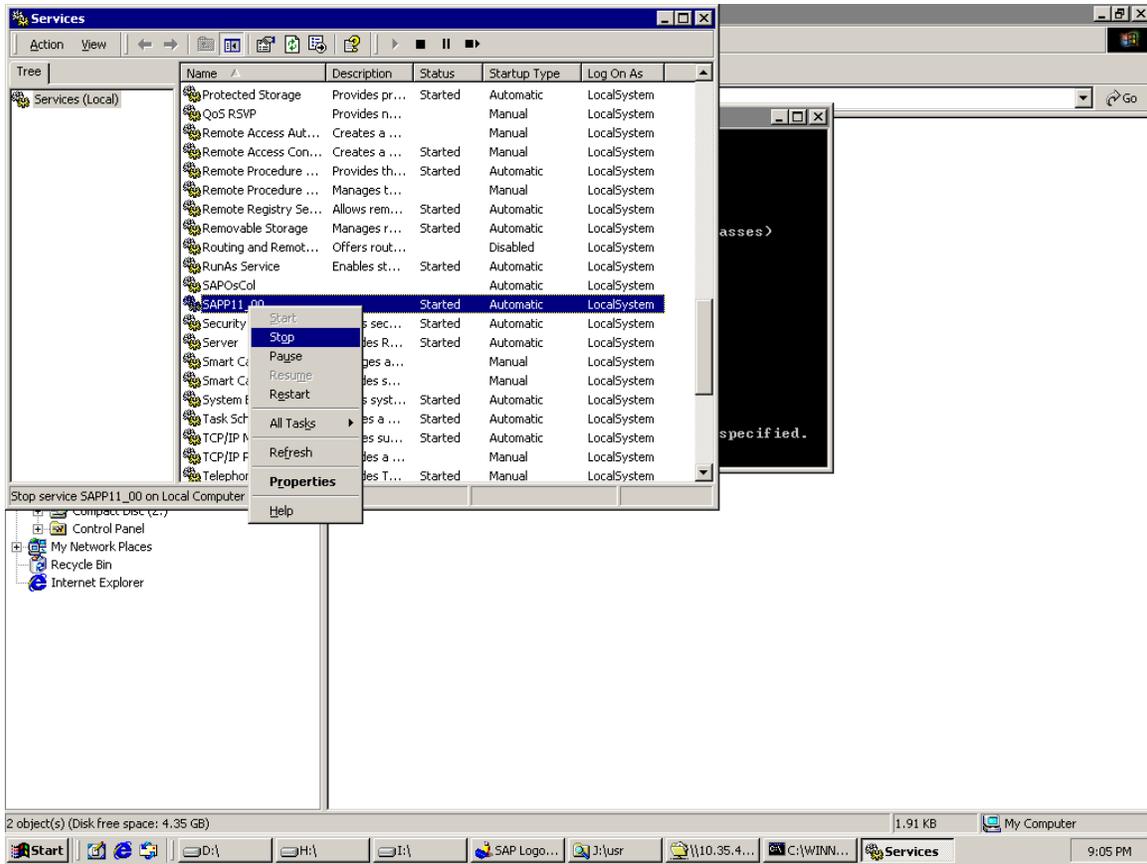
5. Use the following command to unpack the new Kernel from the CD *SAP Kernel*:

```
<CD_D>:\NT\I386\SAPCAR.EXE -xvf <CD_D>:\NT\I386\KRNLUPGR.SAR
```

```
(DEC-ALPHA: <CD_D>:\NT\ALPHA\SAPCAR.EXE -xvf <CD_D>:\NT\ALPHA\KRNLUPGR.SAR)
```

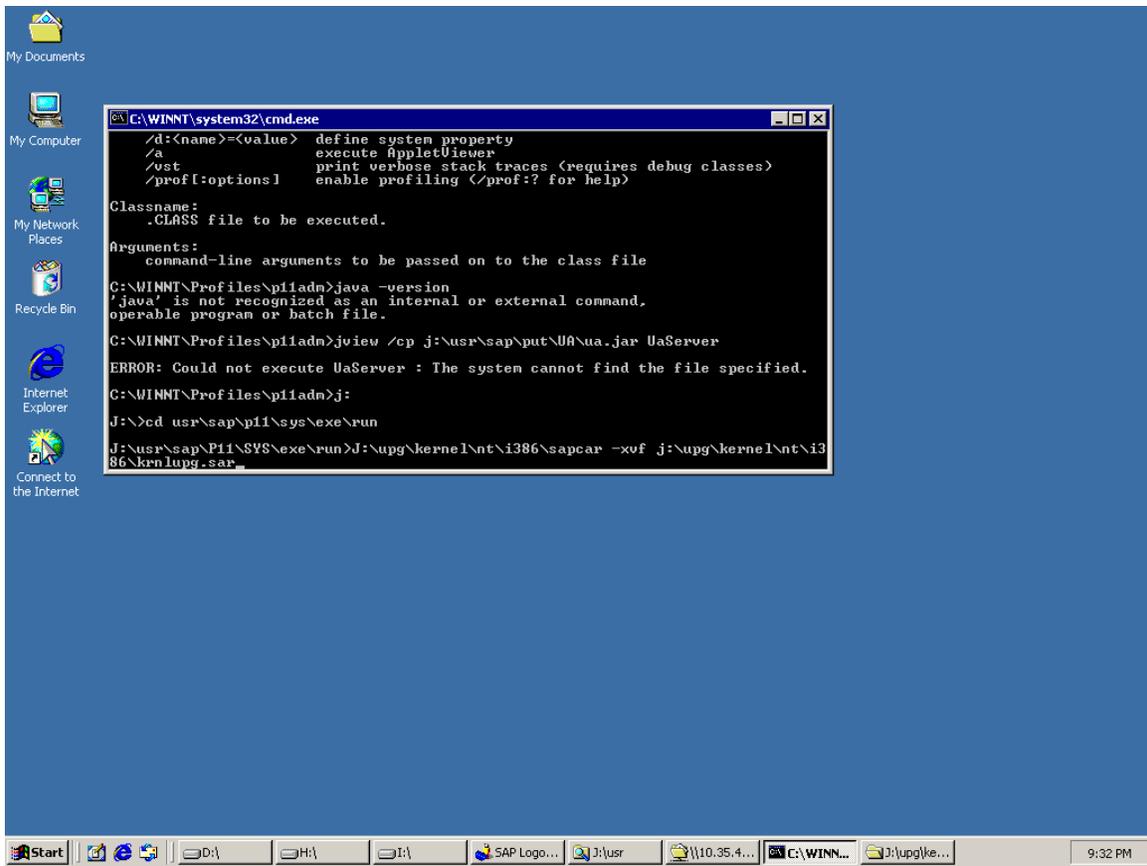
```
<CD_D:> is the CD drive.
```

Stop SAP services 1. `saposcol` & `Sapservice <sid>`

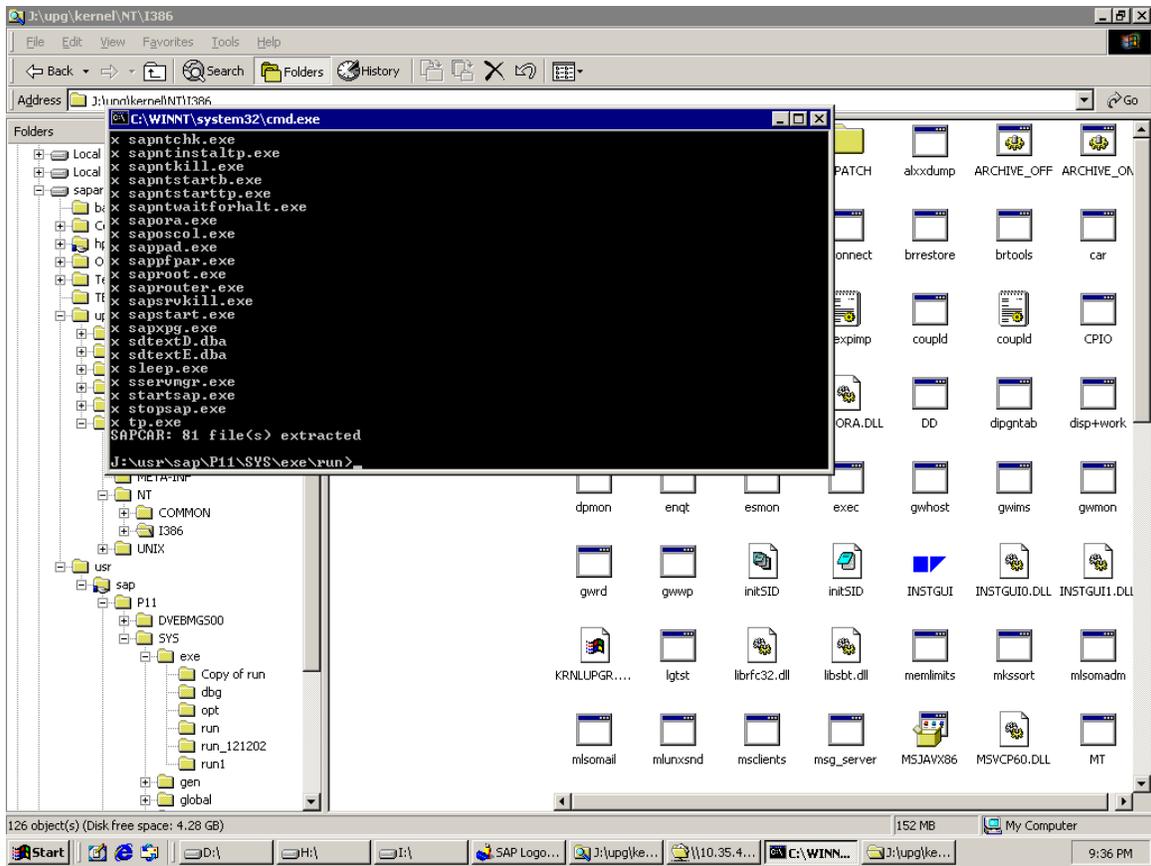


Backup the run folder in `usr\sap\sid\sys\exe\run`

Execute the following



the files are extracted as below



Checking Database-Specific Requirements for PREPARE

Oracle 8: At least Version 8.0.4

Starting PREPARE for the First Time Use

You can use `PREPARE` in scroll mode or with the Upgrade Assistant. We recommend that you use the Upgrade Assistant to execute `PREPARE`. To copy and unpack it from the CD, you must start `PREPARE` once directly from the CD.

Prerequisites

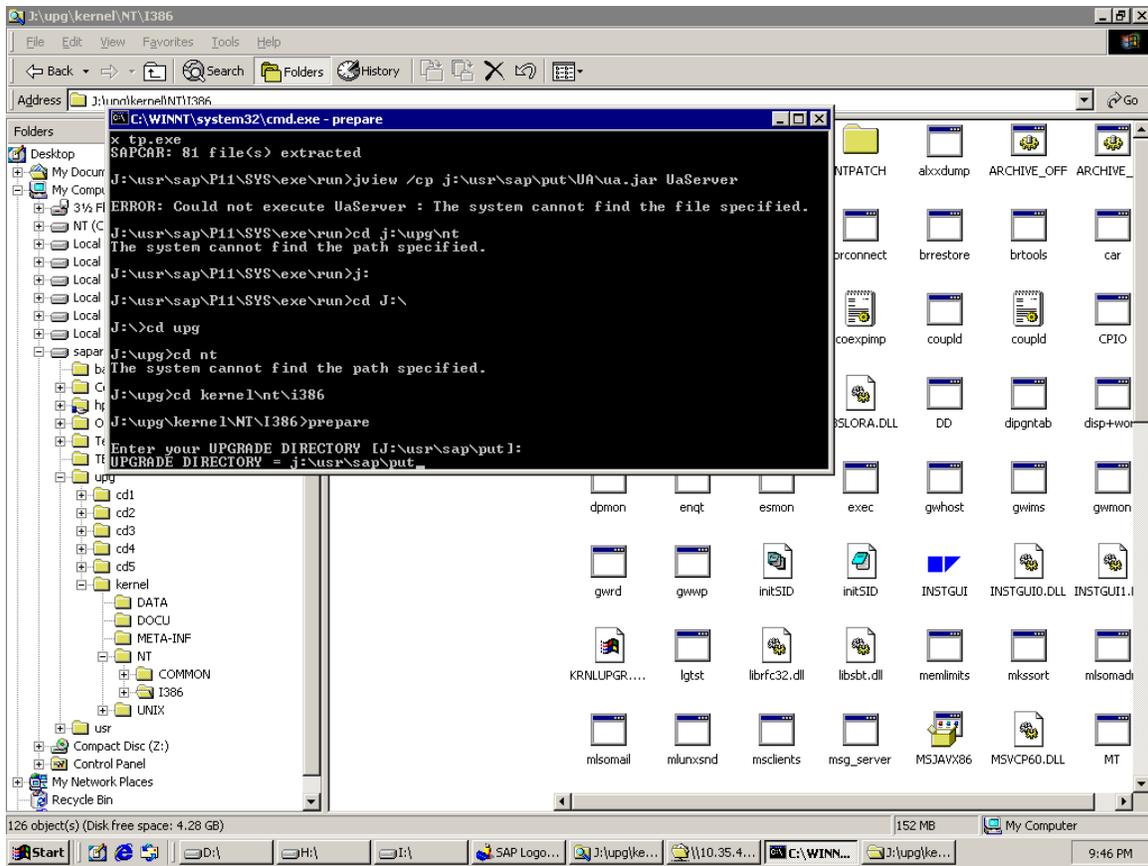
Make sure that you have met all prerequisites for `PREPARE`; see [User Actions Before Starting PREPARE \[Page 60\]](#).

Procedure

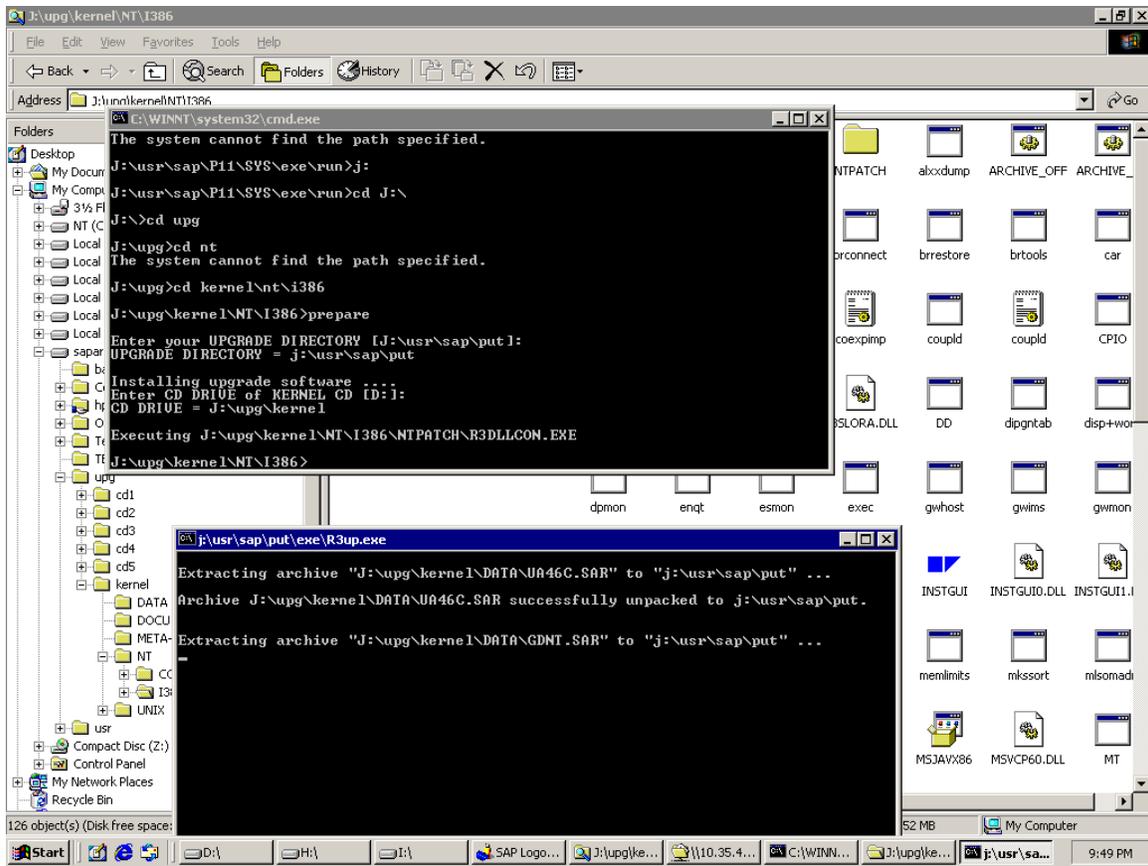
1. Make sure that the database and the SAP System have been started.
2. Insert the *SAP Kernel CD*.
3. Log on to the host on which the central instance is running as user `<SAPSID>ADM`.
4. In the *Windows NT Explorer*, change to subdirectory `NT\I386` (or `NT\ALPHA`) on the CD drive. Start `PREPARE.EXE`.

Directory `\usr\sap\put\ua` is created, in which the Upgrade Assistant is unpacked.

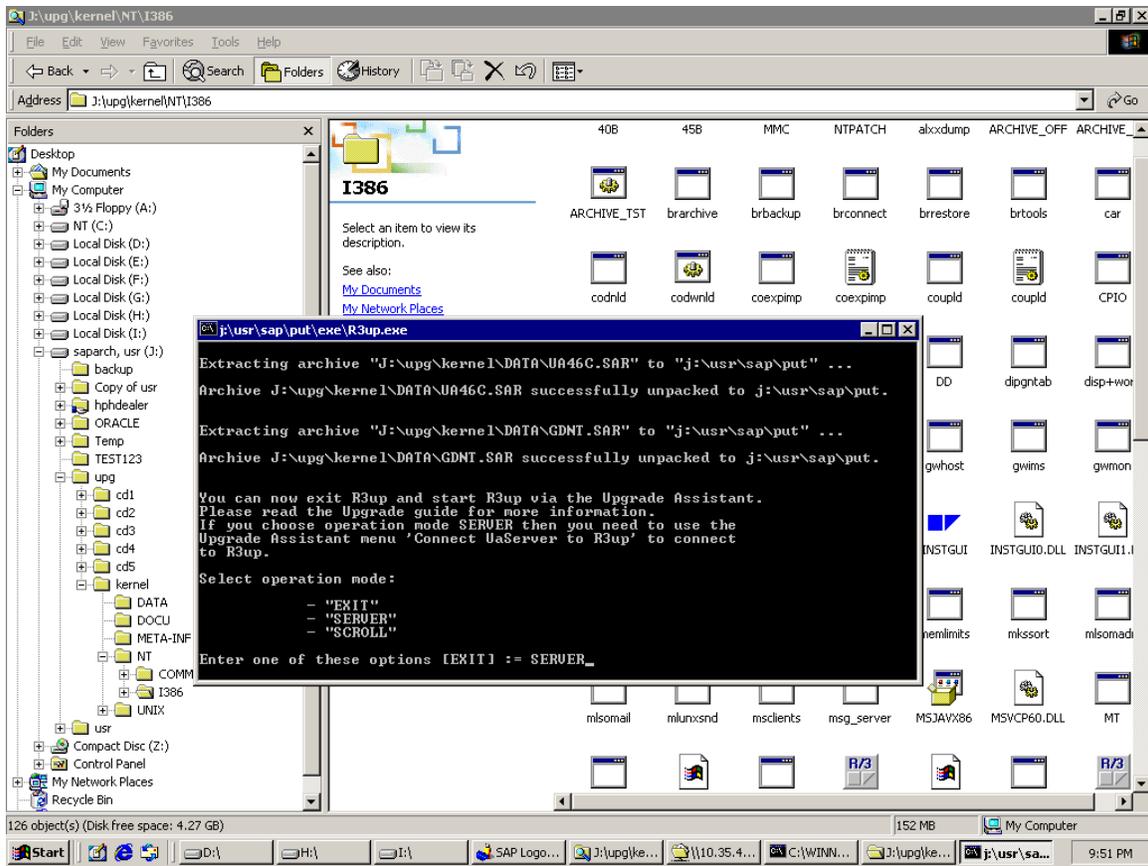
5. Now decide which display mode you want:
 - a. Scroll mode: Enter `SCROLL`.
 - b. Upgrade Assistant: Confirm the default value `SERVER`.



Enter the path of the upgrade directory as shown above also enter the drive where kernel cd is located

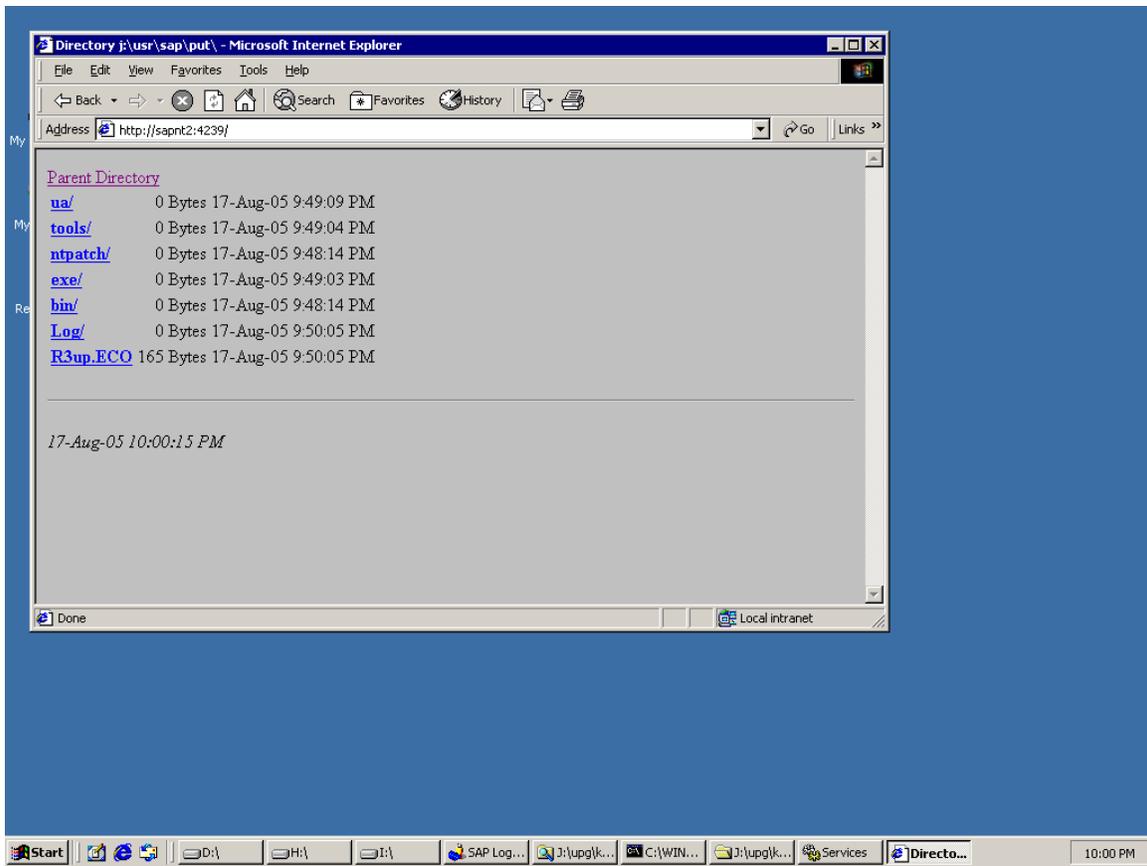


After which you need to type the mode "SERVER"

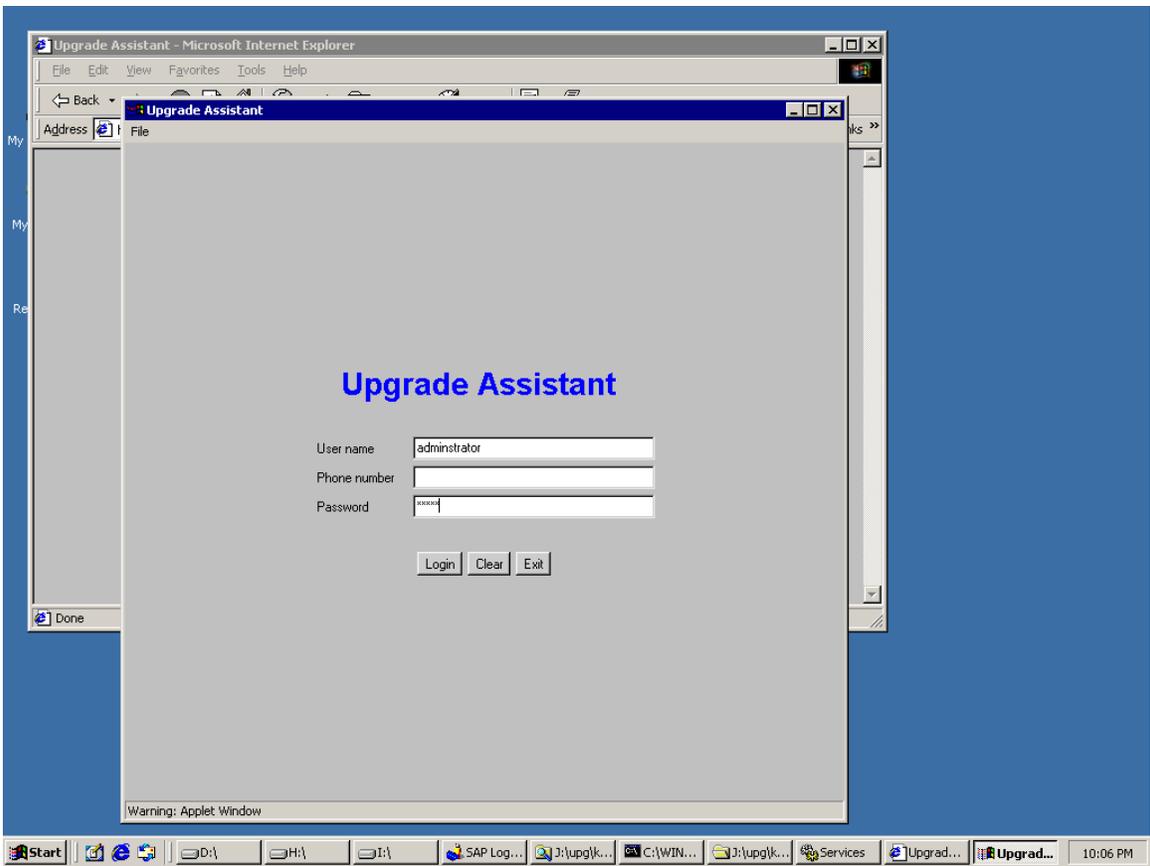


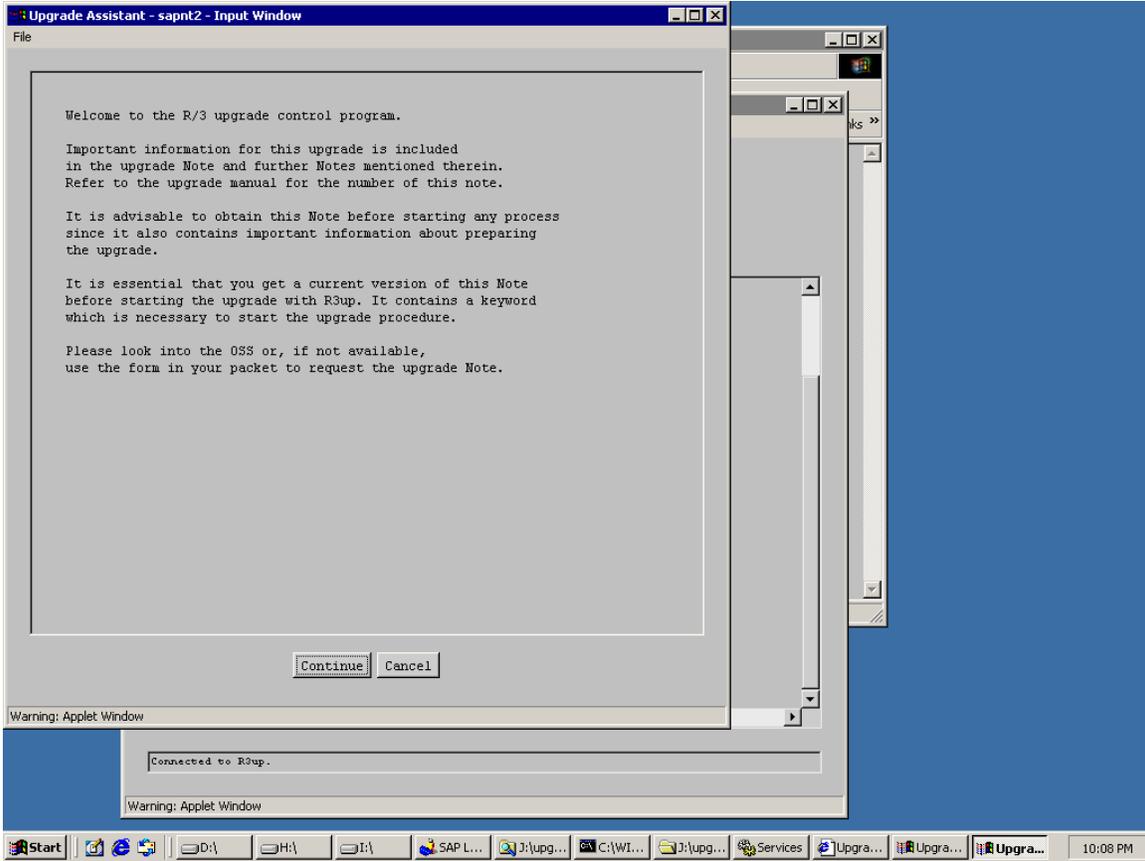
Make sure that the database is open and services started.

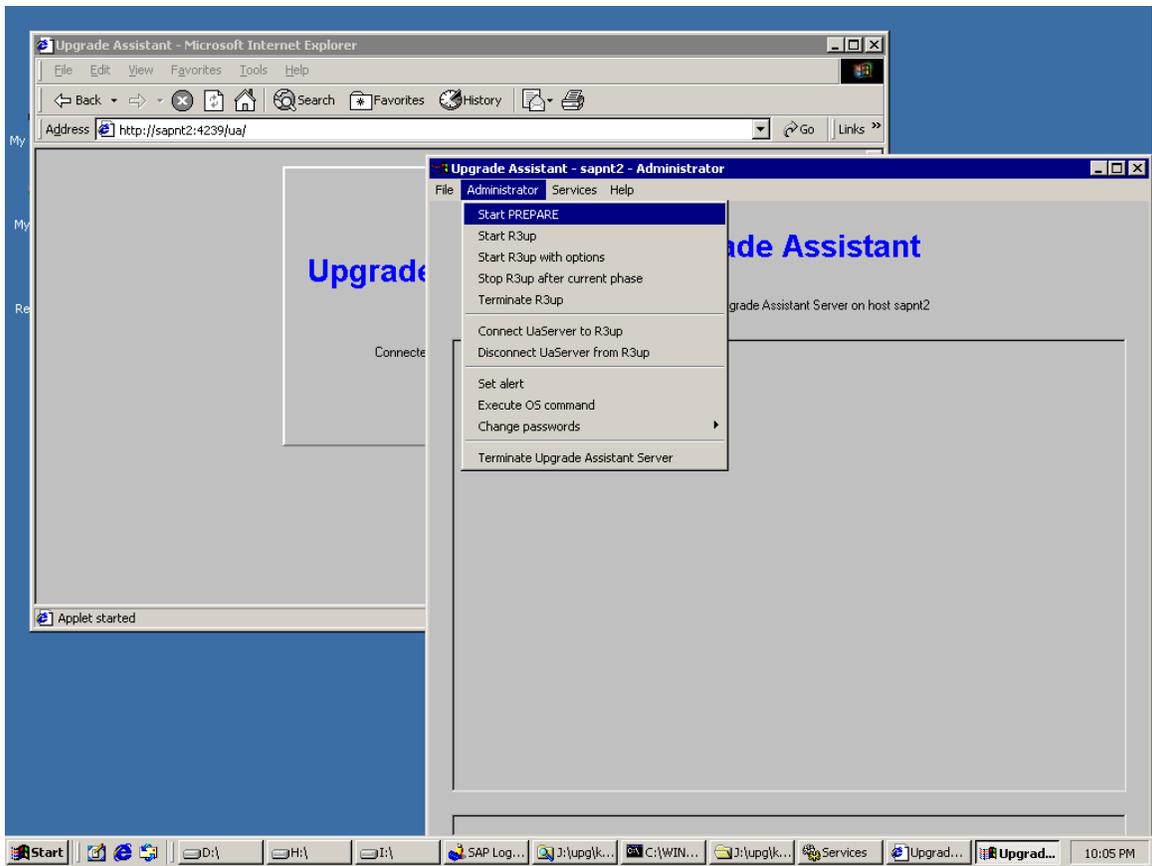
After that go to internet explorer and type "http://?<hostname>:4239\
You will get the below screen



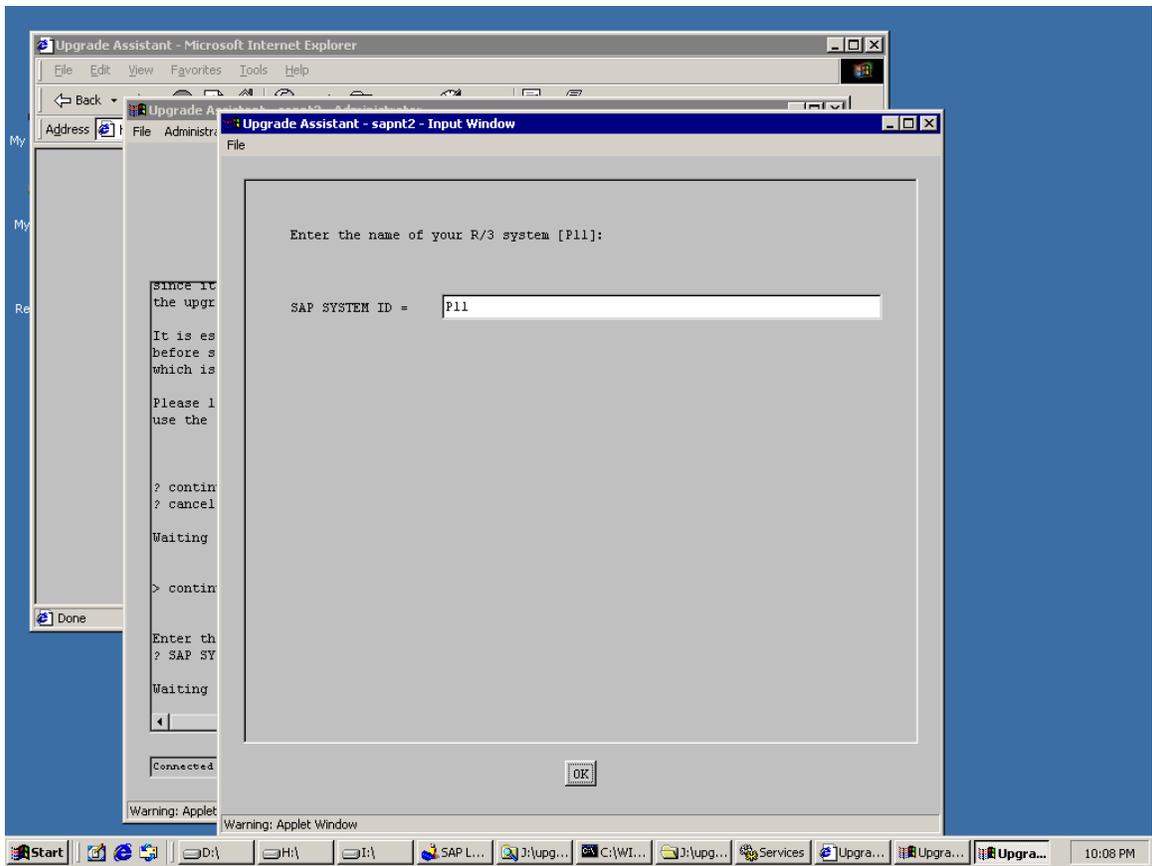
Choose "UA" to get below screen
Enter user name "administrator" & password "admin"
After which you will get the below screen



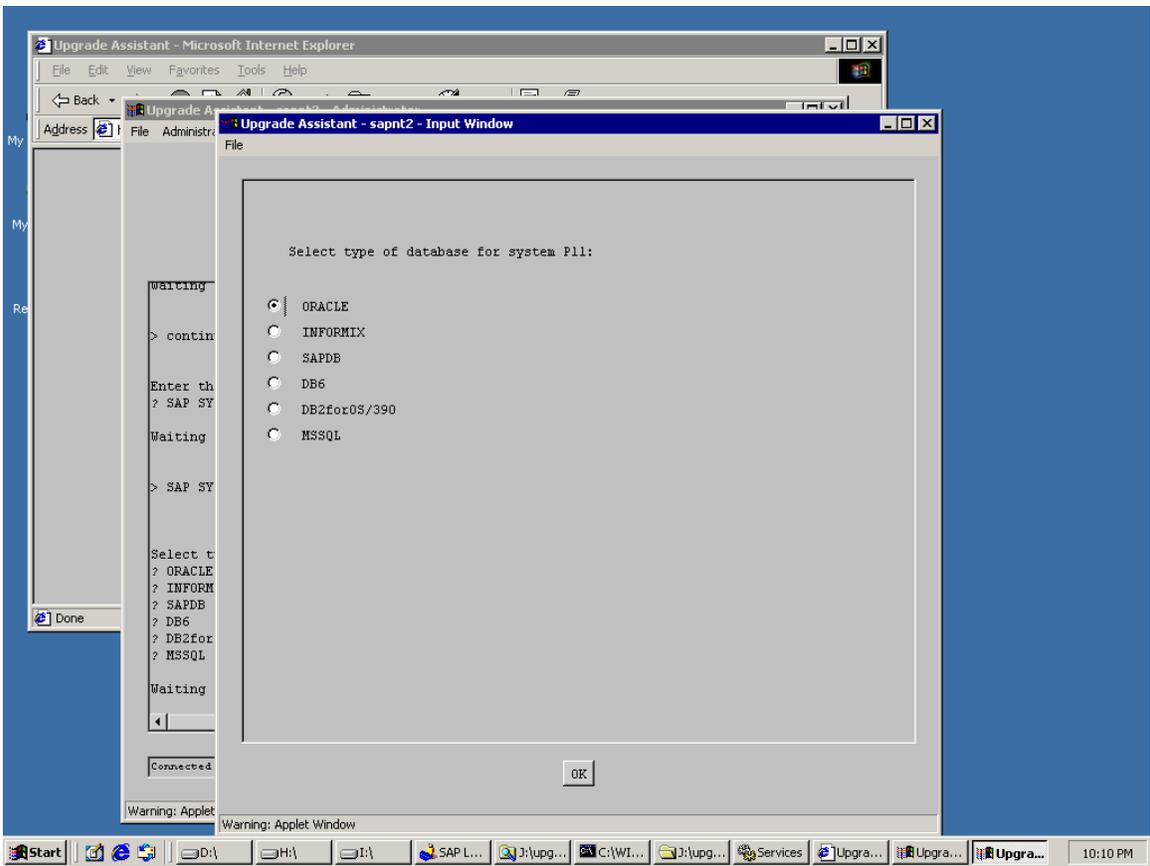


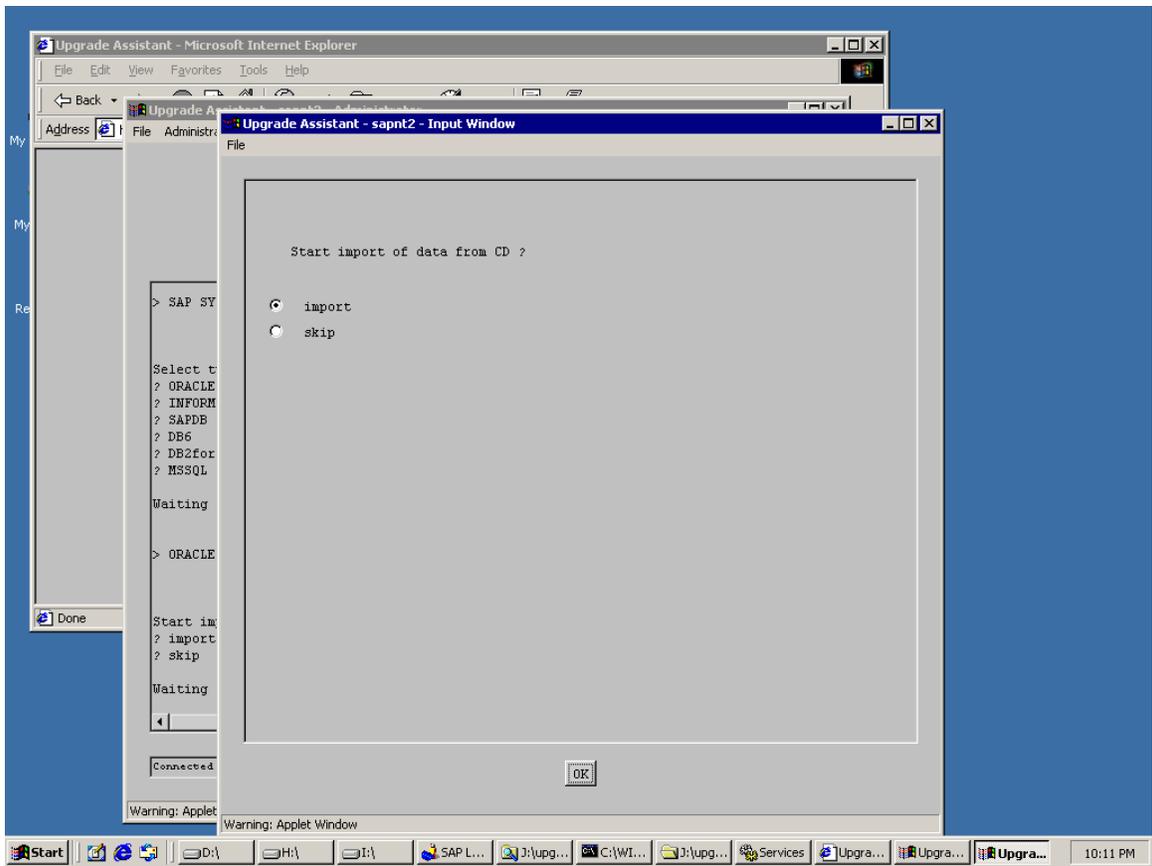


Enter the System ID

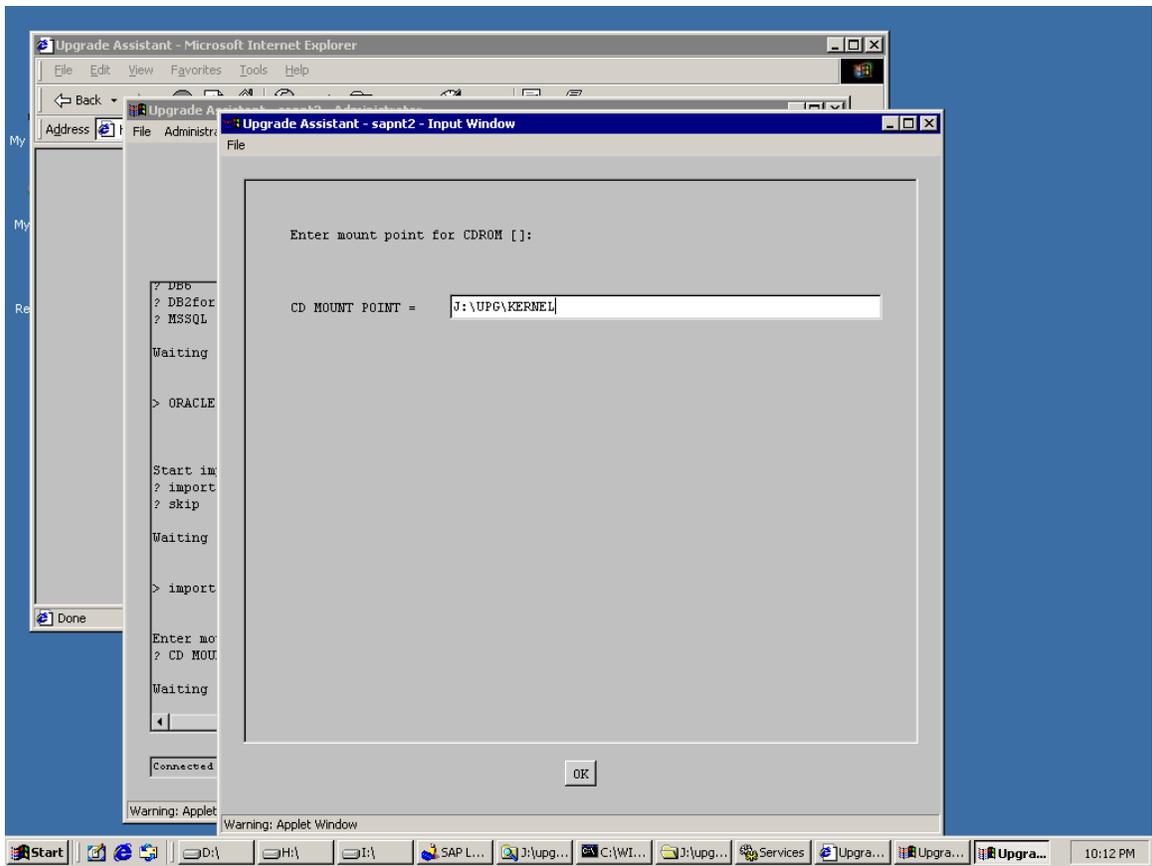


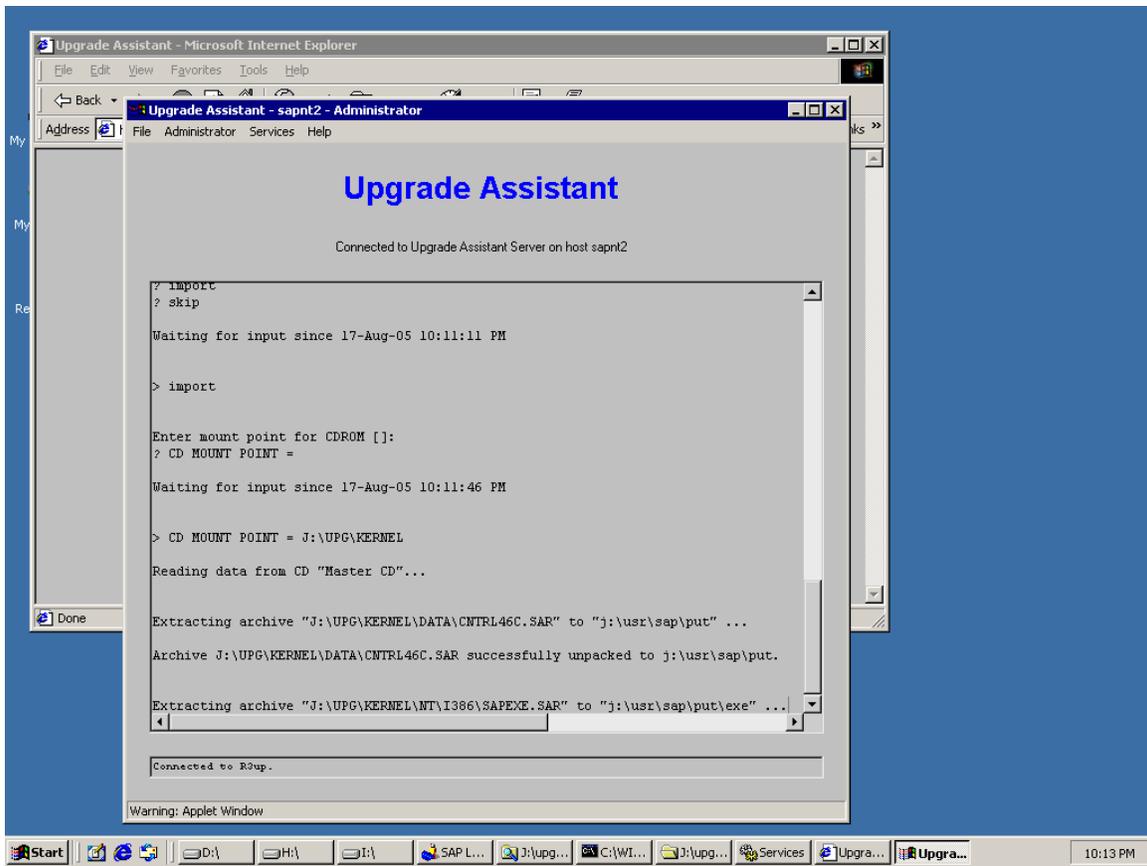
Choose the type of Database , in this case “ORACLE”



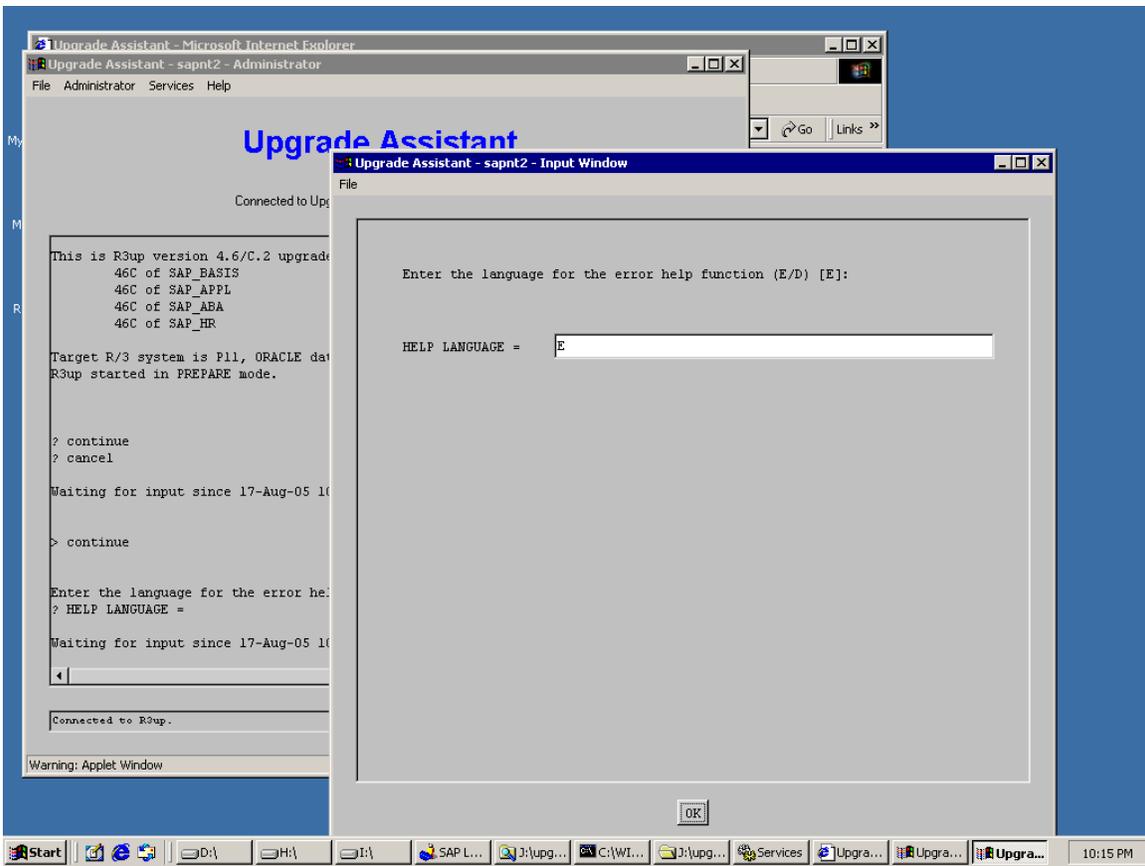


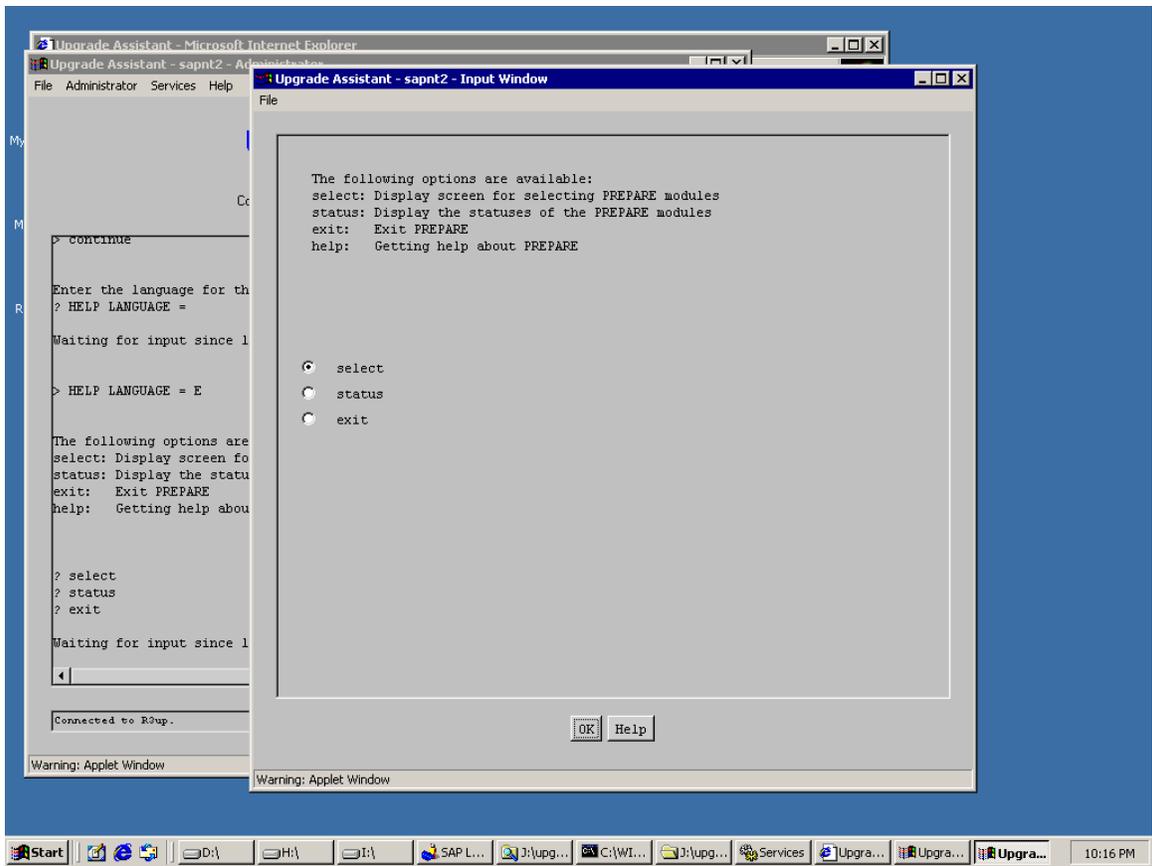
TYPE THE PATH OF THE CD MOUNT POINT



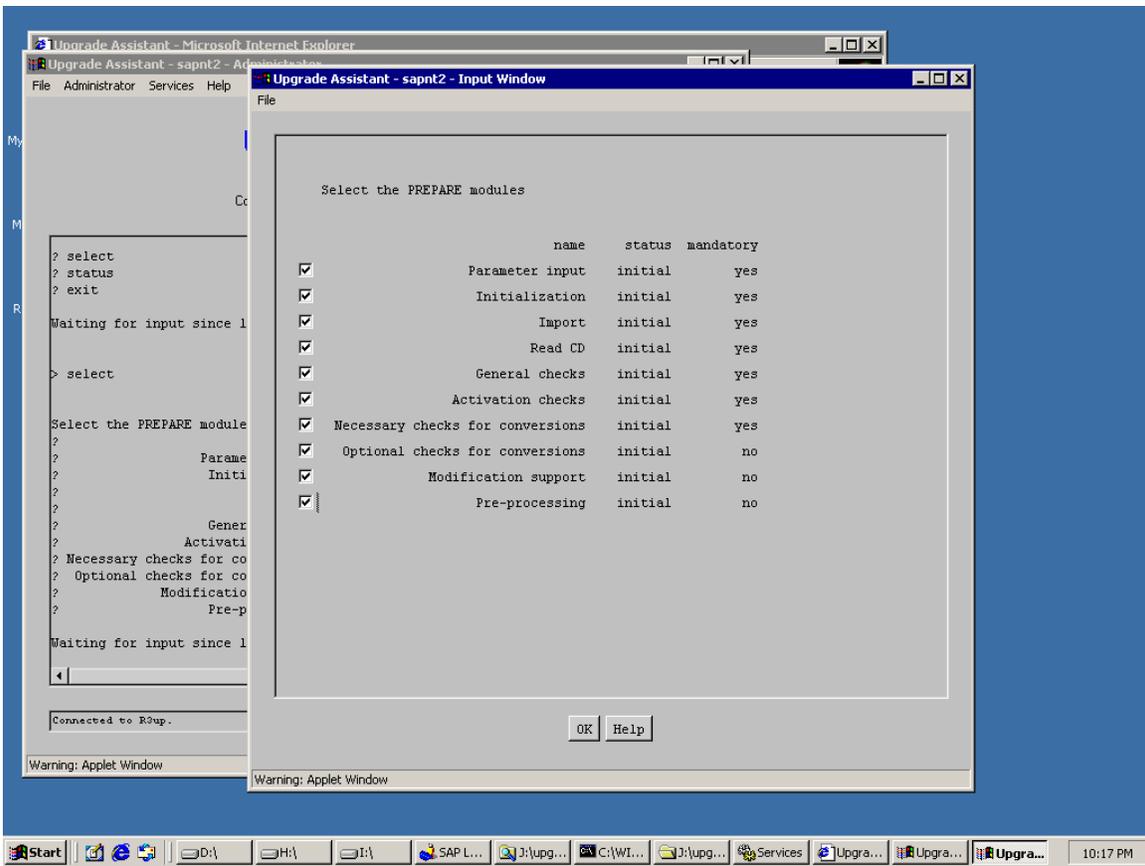


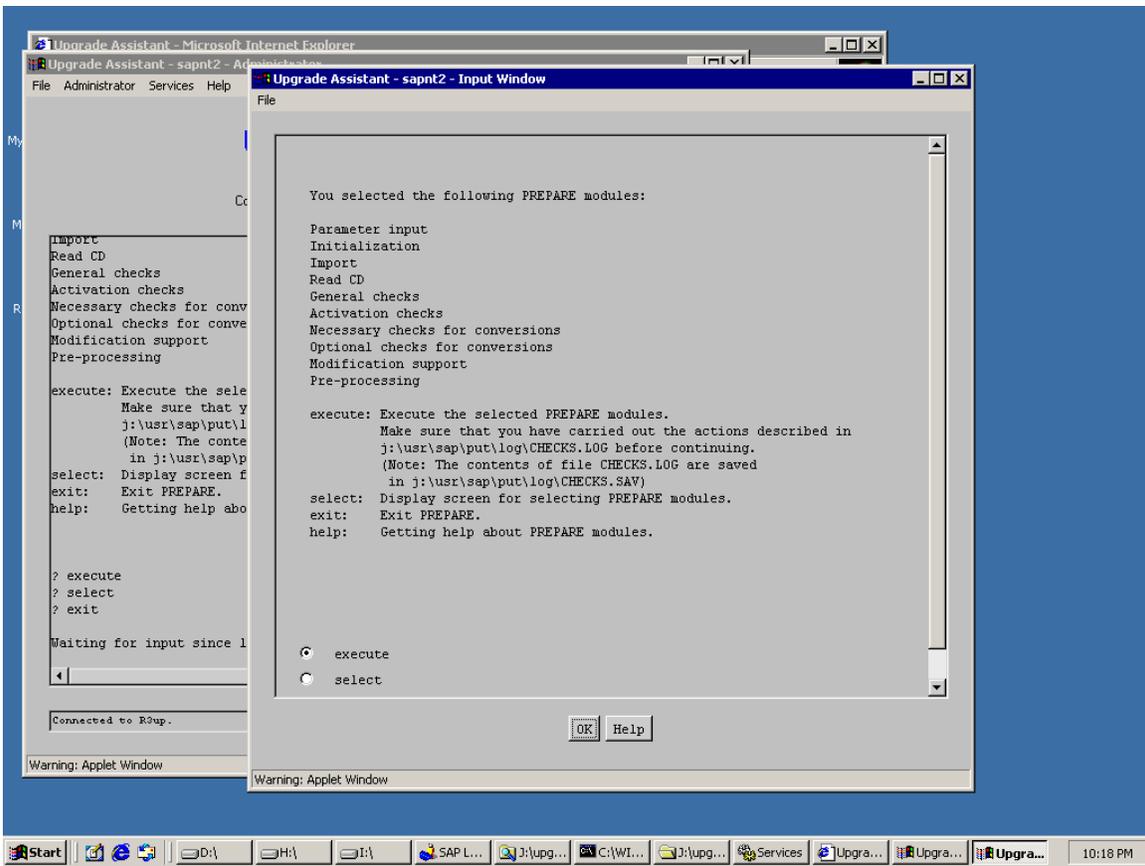
This will extract all kernel files

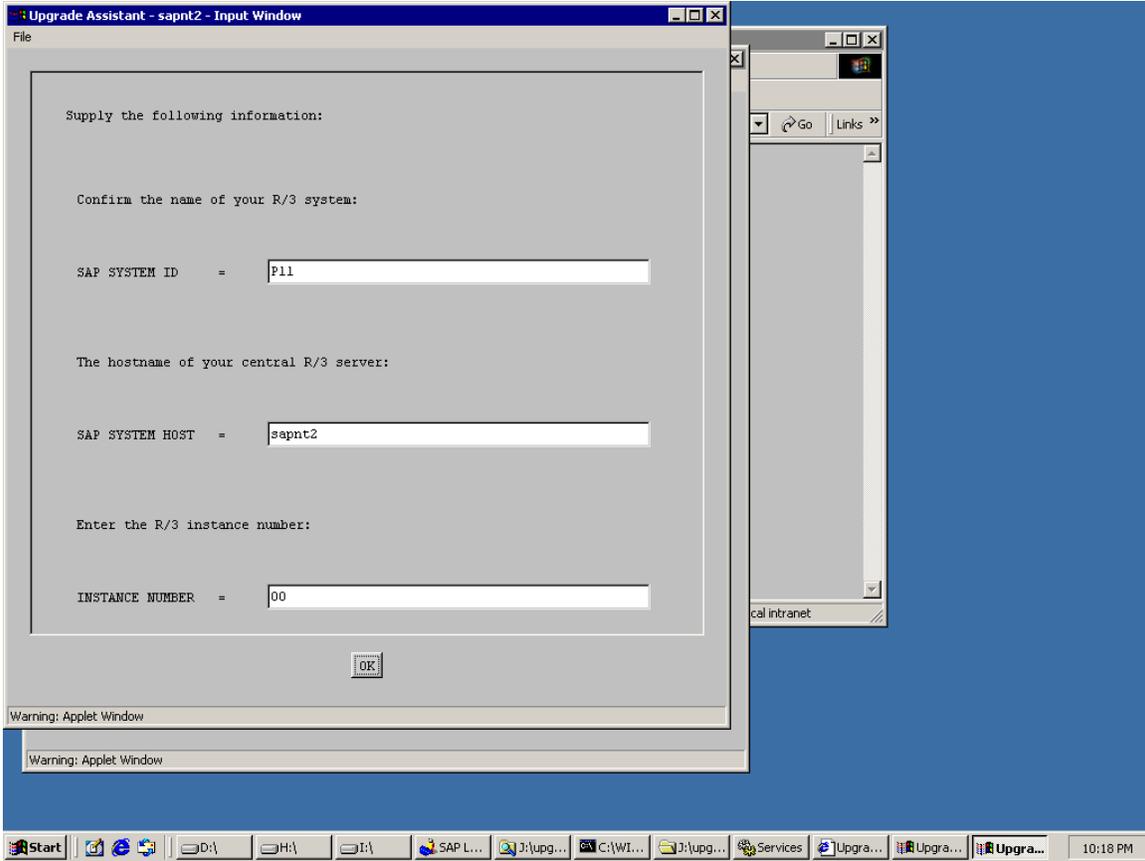


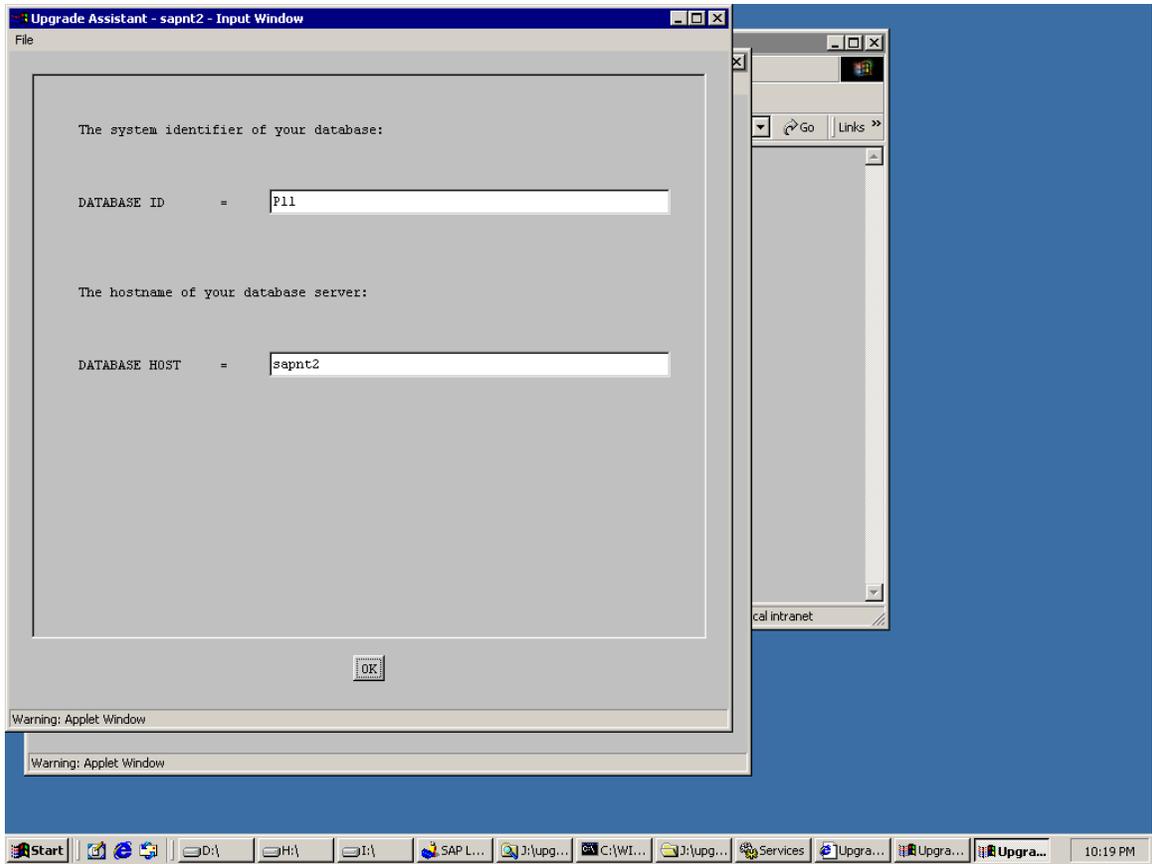


select all the options

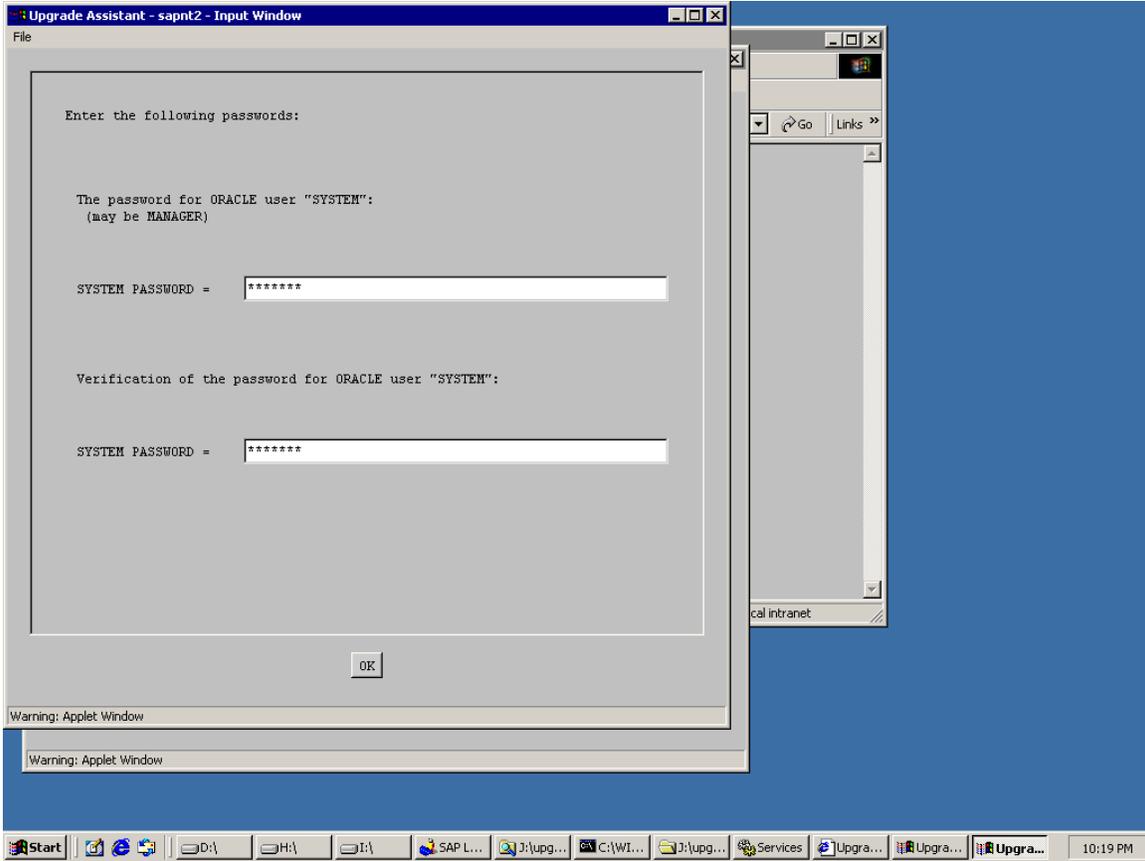


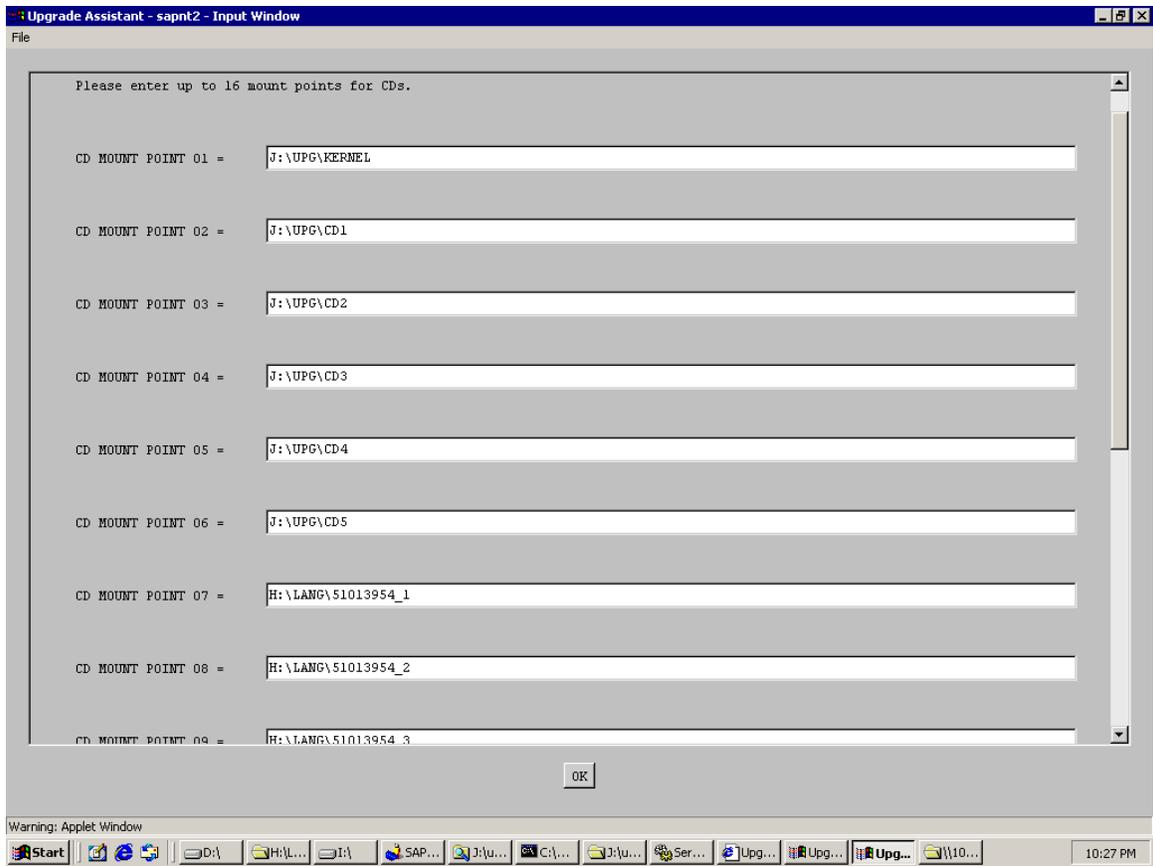




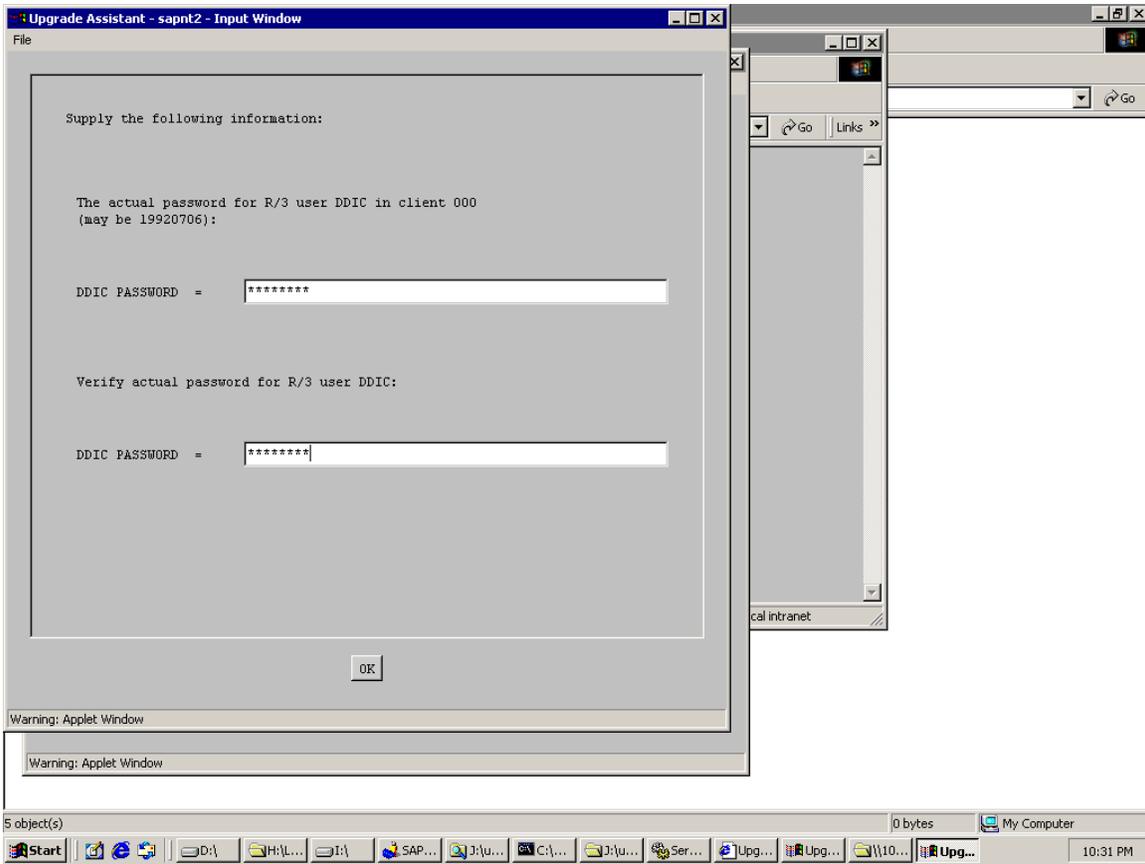


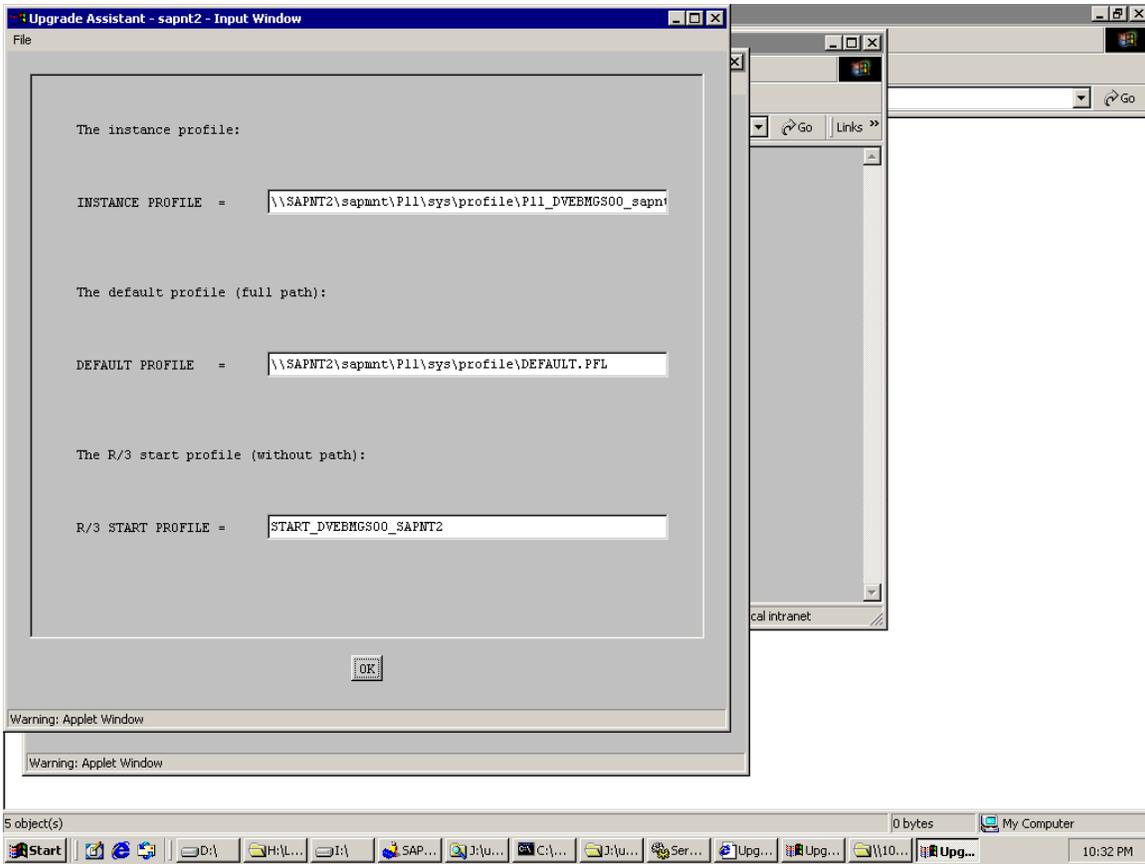
Enter both the passwords as 'MANAGER'





ENTER THE PATH OF KERNEL, EXPORT & LANGUAGE cds.





\\SAPNT2\sapmnt\P11\SYS\profile

File Edit View Favorites Tools Help

Upgrade Assistant - sapnt2 - Input Window

Address: \\SAPNT2\sapmnt\P11\SYS\profil

Name

- Co
- Co
- Di
- Di
- P:
- ST.
- ST.

profile

DEFAULT.PFL
PFL File
Modified: 6/23/1999 6:52 PM
Size: 1.36 KB
Attributes: (normal)

The hostname of your batch server:

BATCH HOST =

OK

Warning: Applet Window

Type: PFL File Size: 1.36 KB

1.36 KB Local intranet

Start | S | I. | J. | H | D | M | J. | C | S. | J. | C | R | U | U | S. | P | N | C | I. | 6:57 PM

\\SAPNT2\sapmnt\P11\SYS\profile

File Edit View Favorites Tools Help

Upgrade Assistant - sapnt2 - Input Window

Address: \\SAPNT2\sapmnt\P11\SYS\profil

Name

- Co
- Co
- Di
- Di
- P:
- ST:
- ST:

profile

DEFAULT.PFL
PFL File
Modified: 6/23/1999 6:52 PM
Size: 1.36 KB
Attributes: (normal)

Supply the following information:

The number of parallel import processes:

RSTRANS PROCESSES =

The maximum profile value of "bufreftime":

MAXIMUM SYNC TIME =

OK

Warning: Applet Window

Type: PFL File Size: 1.36 KB

1.36 KB Local intranet

Start | S | I | J | H | D | M | J | C | S | J | C | R | U | U | S | P | N | C | I. | 7:03 PM

\\SAPNT2\sapmnt\P11\SYS\profile

File

Address: \\SAPNT2\sapmnt\P11\SYS\profil

Name

- Co
- Co
- Di
- Di
- P:
- ST.
- ST.

profile

DEFAULT.PFL
PFL File
Modified: 6/23/1999 6:52 PM
Size: 1.36 KB
Attributes: (normal)

The path to the EPS inbox directory:

EPS INBOX = \\SAPNT2\sapmnt\trans\EPS\in

The local syslog directory:

LOCAL SYSLOG PATH = J:\usr\sap\P11\DVEBMGS00\log

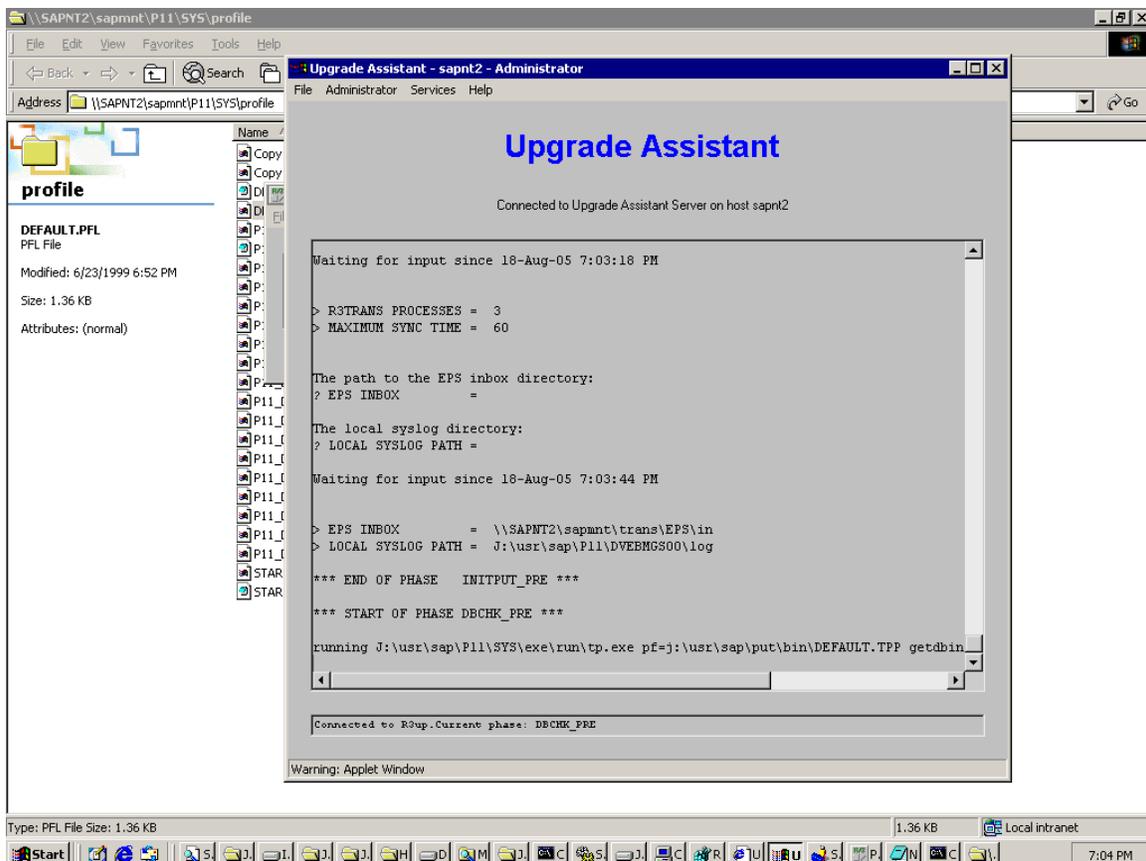
OK

Warning: Applet Window

Type: PFL File Size: 1.36 KB

1.36 KB Local intranet

Start | S | I | J | H | D | M | J | C | S | J | C | R | U | U | S | P | N | C | 7:03 PM



1. Check the value of the parameter `shared_pool_size` in the file `%ORACLE_HOME%\database\init<SID>.ora`. If the value is lower than 50 MB, increase it to at least 50 MB and restart the database.
2. Log on as user `<SAPSID>ADM` at the operating system level.
3. Log on to the database as the Oracle user `SYSTEM` (default password is `manager`) with the appropriate Server Manager for your database release (`svrmgr23`, `svrmgr30`).
4. Check the resource quotas of the database user `sapr3`:

Oracle error 1536 can occur during the upgrade if the resource quotas of the database user `SAPR3` are limited. Make sure that these quotas are unlimited. Check whether table `DBA_SYS_PRIVS` contains one of the following entries:

```
grantee='SAPR3',privilege='UNLIMITED TABLESPACE',adm='YES'
grantee='SAPR3',privilege='UNLIMITED TABLESPACE',adm='NO'
```

To do this, enter the following SQLPLUS command:

```
select * from dba_sys_privs where grantee = 'SAPR3';
```

If this entry does not exist, enter the SQLPLUS command:

```
grant unlimited tablespace to sapr3;
```

5. Log off from the database with the command `exit`.

6. Make sure that the storage parameters `MAXEXTENTS` and `NEXT` have the correct values for certain tables and indexes. Otherwise, they may overflow during the upgrade. **Note 201874** contains the tables and the required minimum values.

You can display the current settings with `SAPDBA`. The index names are not constant.

However, you can also determine these names with `SAPDBA`. **Note 11777** describes how to change the parameters `NEXT` and `MAXEXTENTS`.

7. For Source Releases 3.0x/3.1x Only:

In Release 3.0/3.1, the rule-based mode is the standard setting for the database optimizer. If you were working with the cost-based mode before the upgrade, you have to change the mode now.

Make sure that parameter `OPTIMIZER_MODE` has the following setting in the Oracle profile

<ORACLE_HOME>\DATABASE\init<SAPSID>.ora:

OPTIMIZER_MODE=RULE

If you have to change the parameter, restart the database afterward.

8. Check the value of the storage parameter `MAXEXTENTS` for the tablespace `PSAPTEMP`. If you are not sure, execute the script `psaptemp.sql` as the database administrator. This script sets the value of `MAXEXTENTS` to **UNLIMITED**.

This script is located in the `bin` subdirectory of the upgrade directory.

In the start profile (<SPECIFICATION><INSTANCE_NO>_<HOSTNAME>), delete parameter `AUTOSTART = 1` if it is set.

Setting parameter `Autostart = 1` causes the SAP service **and** the SAP System to start when the Windows NT system is booted. This mechanism must be switched off during the upgrade.

Prerequisites

You must be able to log on to the system in client 000 as user `DDIC`. The initial password for `DDIC` is **19920706** in a newly installed system.

If you need to adjust modifications, log on to client 000 as the appropriate user and call Transaction `SPDD`. This must be a user other than `DDIC`. `DDIC` cannot make the modification adjustment.

User `DDIC` needs to have the authorization `SAP_ALL` to be able to perform all the actions required during the upgrade.

If your system contains profile `SAP_NEW`, make sure that the following users are assigned this profile in addition to their existing profiles:

`DDIC`

`SAP*`

The user who performs the modification adjustment with Transaction `SPDD`

If the profile `SAP_NEW` is **not** available in your system, we recommend temporarily assigning the profile `SAP_ALL` to the user who performs the modification adjustment with Transaction `SPDD`.

Remove this assignment after the upgrade.

If you modified SAP objects in your SAP System, make sure that you meet the requirements for the modification adjustment.

In particular, make sure that changes to the Repository are allowed in the client in which you want to perform the modification adjustment. To check this, use Transaction `SCC4`.

Various background jobs are started during the upgrade. When you schedule time-dependent jobs, a check is made to see whether the SAP instance that you want to run them on is defined in an operation mode. The operation mode specifies which services are offered by the work processes (dialog, update, background processing, enqueue, spool, and so on).

Prerequisites

No operation modes must contain servers that do not belong to the current system.

Procedure

1. Before starting the upgrade, use Transaction `RZ04` to check the definition of your operation modes. Also check the operation mode `DUMMY`. In the case of operation mode `DUMMY`, in particular, the server name may be entered as `<host_name>_<SAPSID>`. Change this entry to `<host_name>_<SAPSID>_<instance_number>`.

2. Delete the invalid operation modes. If operation modes contain names of servers other than those belonging to the system, problems may arise in the background interface in some phases. The jobs may be released, but not set to status *active* (in theory, this affects all jobs scheduled to start on a specific server triggered by an event).
3. If the SAP instance on which you want to upgrade the system is not entered in an operation mode, create the operation mode for the upgrade as follows:
 - a. Call Transaction RZ04.
 - b. Choose *Operation mode* *Create*.
Enter a name for the operation mode, for example, *Upgrade*. Enter a short description and then save the operation mode.
 - c. Make sure that the instance required for the upgrade has been started up.
 - d. Position the cursor on the new operation mode and choose *Operation mode* *Maintain instances* *Operation mode view*.
 - e. Choose *Settings* *Based on current status* *New instances* *Generate*.
All instances and their current configuration appear.
 - f. Choose *Save*.
 - g. Enter the operation mode you have defined as an active operation mode for 24 hours using Transaction SM63. Select *Normal operation (24 hours)*.

Phase DBCHK

Use

This phase determines the version of the database and the release of the SAP System. R3up calls the transport control program *tp*, which logs on to the database and reads the necessary information from there. Any problems in this phase are normally due to the database connection being broken.

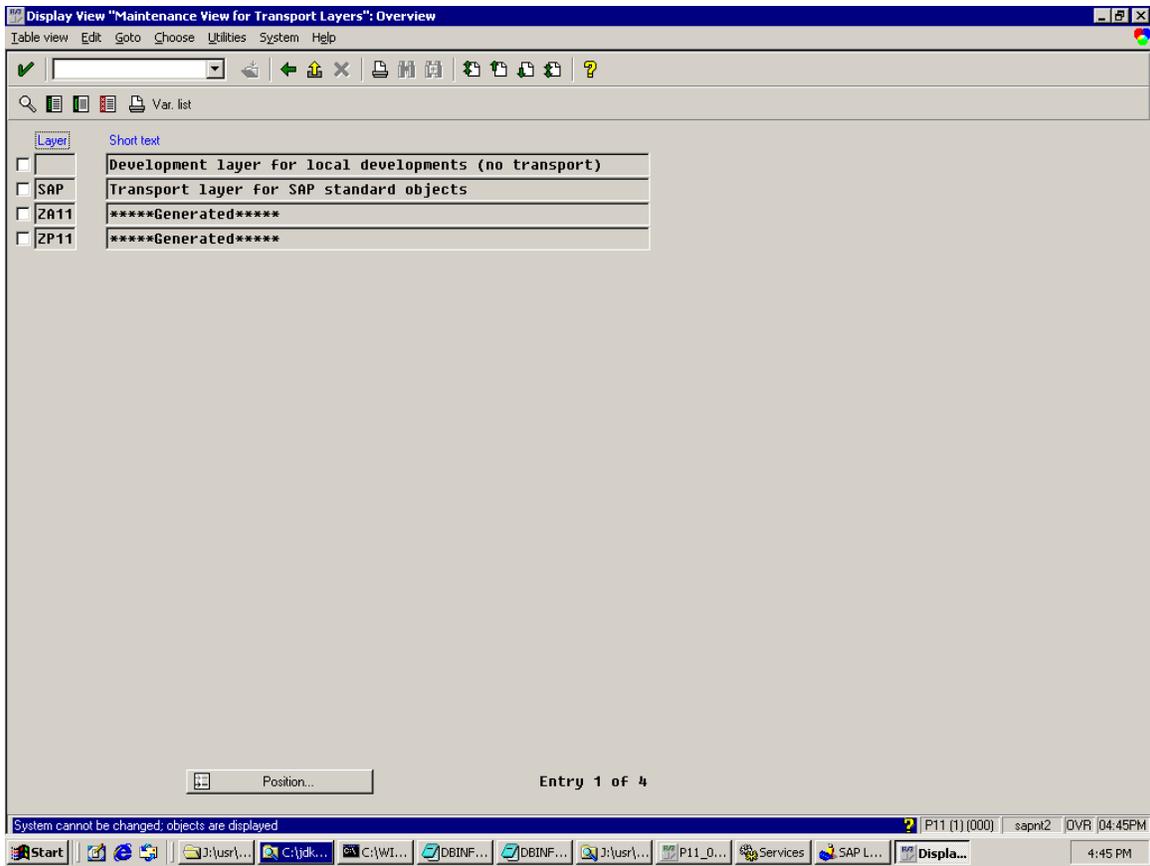
Activities

If the error message *No information received from the database* appears, check the file *SLOG46C* in the subdirectory *log* of the upgrade directory. A frequent source of problems with *tp* is an incorrectly configured Change and Transport System.

If this is the case, call Transaction SE06 in the SAP System as user DDIC.

Release 3.x – 4.5B:

1. Go to the initial screen of Transaction SE06, choose *New installation* as the system status and select the correct *System configuration*. Choose *Install*.
2. Confirm any other dialog boxes with *Yes* or *Continue* until the system settings have been completed. Then exit the transaction.



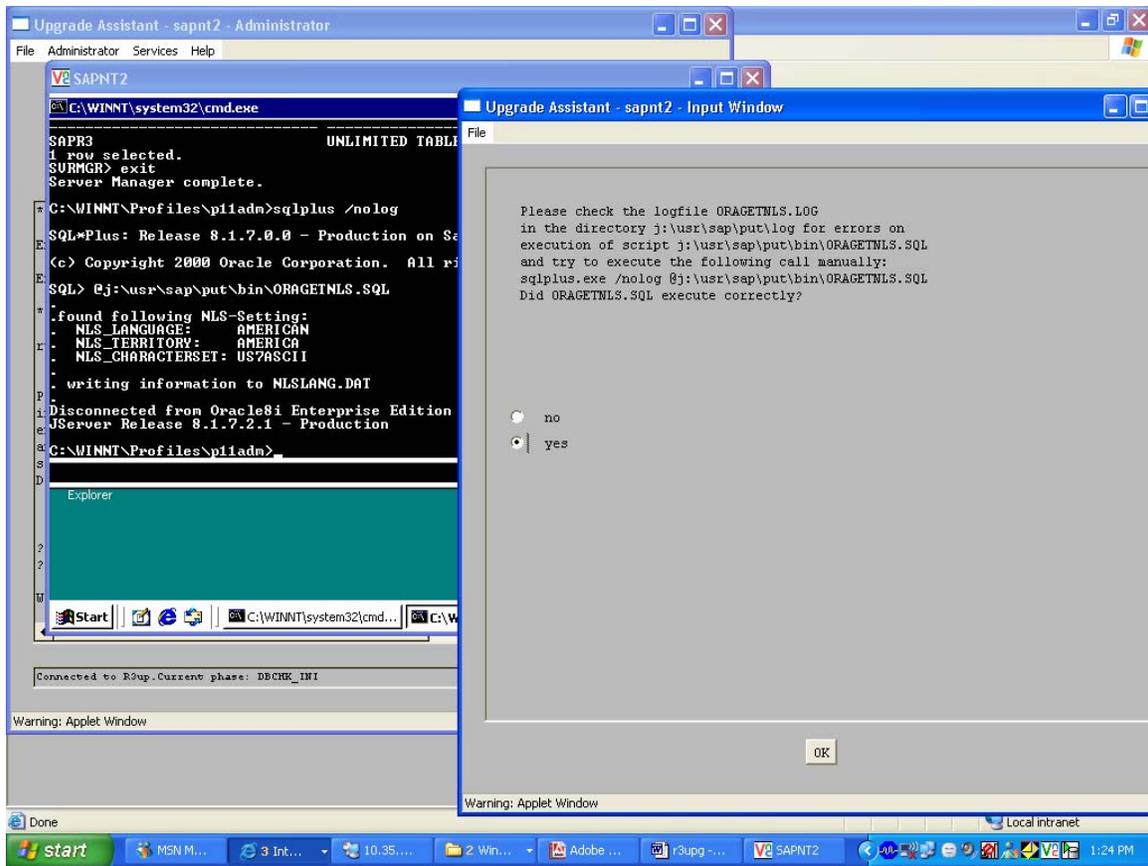
Phases INTCHK and INTCHK_SW

Use

This phase checks if the inactive nametab is empty. An error is returned if it is not empty.

Activities

1. To determine the objects that are affected, display the log file DDXTTCHK.LOG.
2. Activate these objects with Transaction SE11.
The inactive nametab is then empty.
3. Call R3up again using *repeat*.



error for dbchk

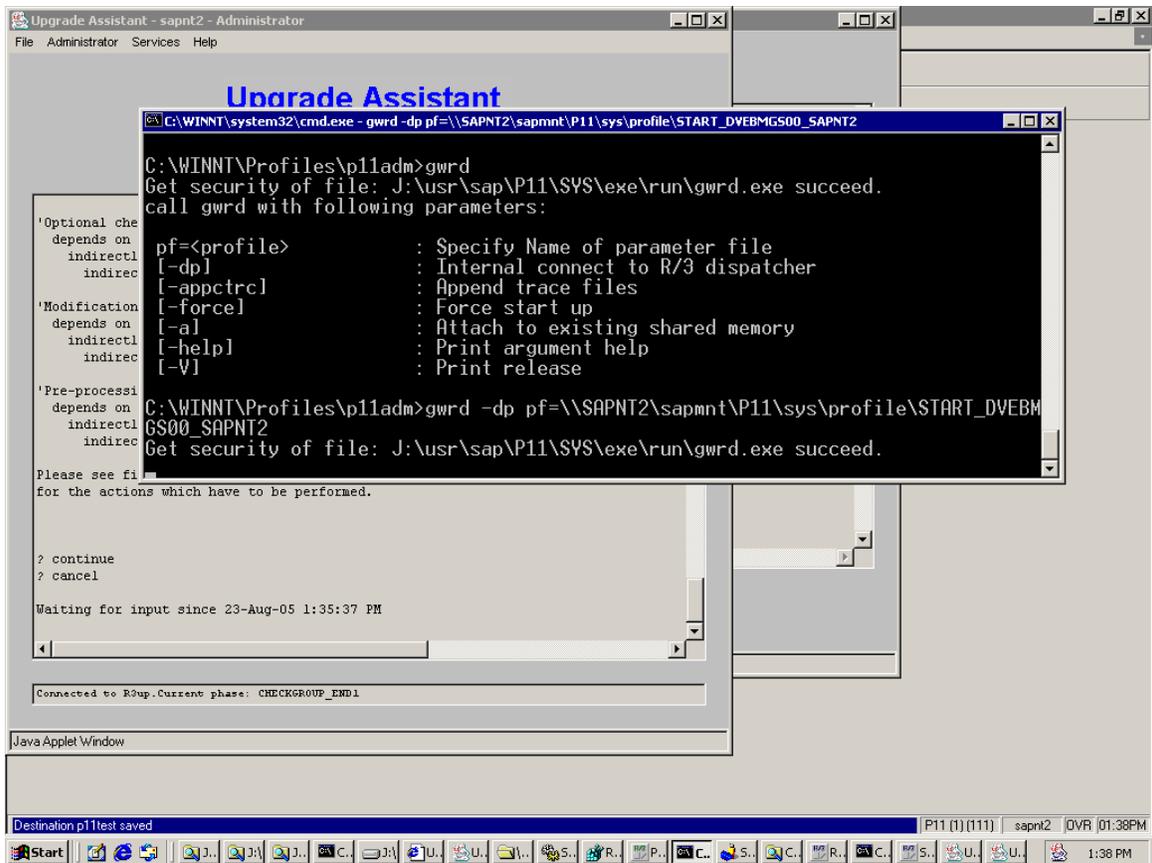
For RFCCHK_INI

If gateway not connected. Partner not reached

Check SM59 if error is local gateway not running

GWRD is the service running on port 3300

Force start this service by running GWRD -force



use option `,-force` `,-a` & `-dp`
& login with DDIC user for test connection
use transaction `smgw` ,
& restart.

Upgrade Assistant

Connected to Upgrade Assistant Server on host sapnt2

```

'Optional checks for conversions'
depends on 'Read CD' status: initial
  indirectly depends on 'Import' status: initial
  indirectly depends on 'Initialization' status: failed

'Modification support'
depends on 'Read CD' status: initial
  indirectly depends on 'Import' status: initial
  indirectly depends on 'Initialization' status: failed

'Pre-processing'
depends on 'Read CD' status: initial
  indirectly depends on 'Import' status: initial
  indirectly depends on 'Initialization' status: failed

Please see file j:\usr\sap\put\log\CHECKS.LOG
for the actions which have to be performed.

? continue
? cancel

Waiting for input since 23-Aug-05 1:35:37 PM

```

Connected to R3up. Current phase: CHECKGROUP_END1

Java Applet Window

Upgrade Assistant - sapnt2 - File Viewer

File: j:\usr\sap\put\log\CHECKS.LOG

```

=====
# Starting new execution of PREPARE modules
#   Parameter input
#   Initialization
#   Import
#   Read CD
#   General checks
#   Activation checks
#   Necessary checks for conversions
#   Optional checks for conversions
#   Modification support
#   Pre-processing
# at 20050818173022.
=====

# Requests and information for module Parameter input #
#

# PREPARE module Parameter input finished with status succeeded #
#

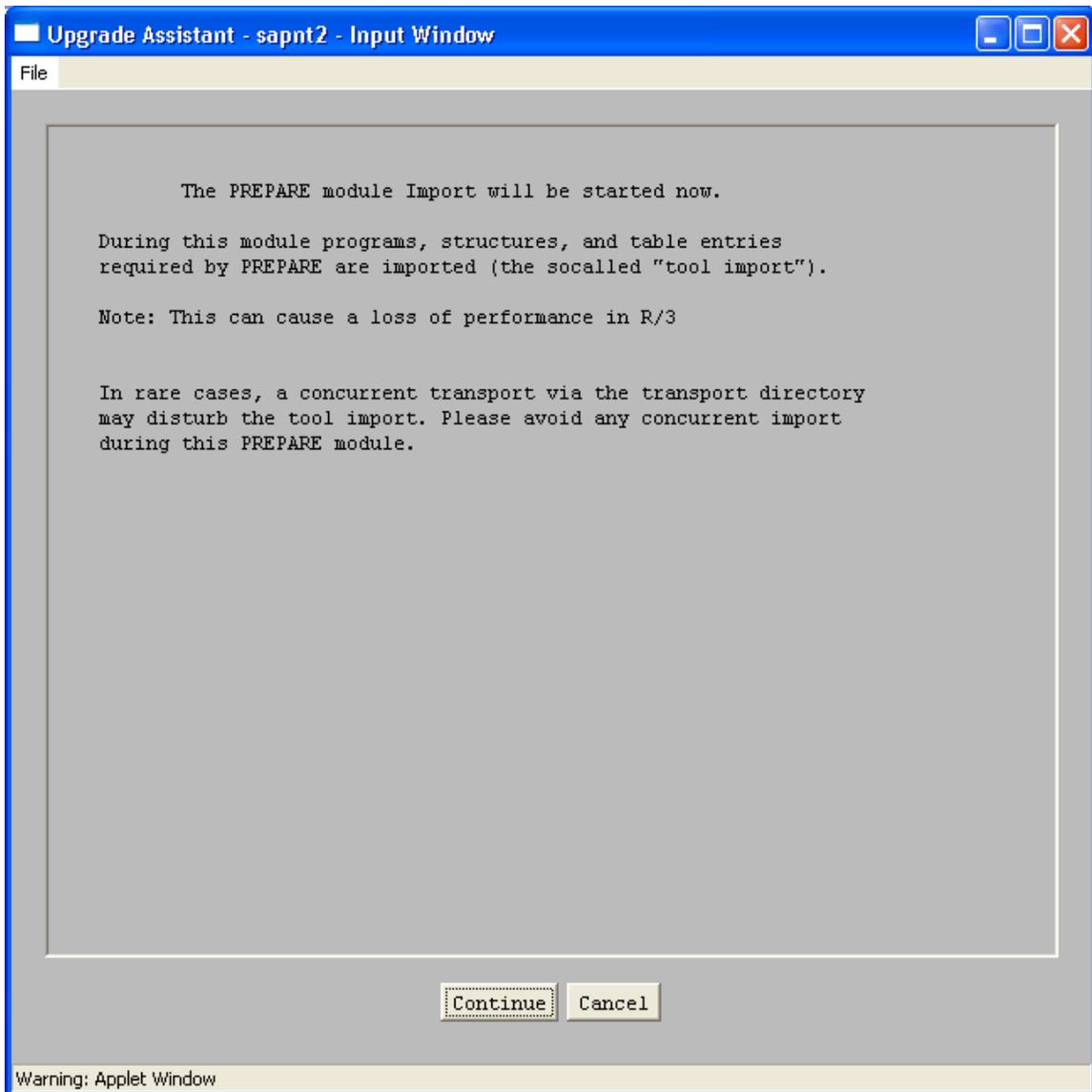
```

Close

Java Applet Window

Destination p11test saved | P11 (1) (111) | sapnt2 | OVR | 01:44PM

Start | [Icons] | 1:44 PM



Upgrade Assistant - sapnt2 - Upgrade Monitor

File

Current phase

- REQIMPORT
- READDATA0
- READDATA1
- READDATA2
- CPYFILO_CBU
- EXEC_CPYFIL1_CBU
- INFO_STORE_READ
- CONFCHK_IMP
- CNV_CHK_IMP
- ICNVCHK_IMP
- SCRIPT_CHK_TOOL3
- SCRIPT_CHK_TOOL4
- TRBATCHK_IMP
- CLNT_CHK_IMP
- INTCHK_IMP
- SPACECHK_IMP
- PATCH_CHK2
- MTUUCODE

Information

Waiting for "Another Monitor (started first) ",

General information:

- 1) Values over 100% indicate a longer run time than expected, this is not an error
- 2) The active upgrade phase may differ from the phase shown in the monitor for a time of 20 seconds

Upgrade Monitor starting with a period of 20 seconds
Insufficient data to calculate the Forecast Record
Insufficient data to calculate the Forecast Record



Milestone runtime

0 %

Upgrade runtime

0 %

Warning: Applet Window

Upgrade Assistant - sapnt2 - Upgrade Monitor

File

Current phase

- PATCH_CHK2
- NTHISTCRE
- ALTER_TO
- TOOLIMPD1
- TOOLIMPD2
- TOOLIMPD3
- MVNTAB_TOOL
- TOOLIMPI
- TOOLIMPM
- NPREPCRE0
- NPREPCRE1
- UVERS_INIT
- UVERS_CHK_IMP
- BATCHCHK_IMP
- JOB_RSCVINIT
- READPUTTB
- JOB_RDDGENRS
- RUN_ADDITCUC

Information

General information:

- 1) Values over 100% indicate a longer run time than expected, this is not an error
- 2) The active upgrade phase may differ from the phase shown in the monitor for a time of 20 seconds

Upgrade Monitor starting with a period of 20 seconds
Insufficient data to calculate the Forecast Recovery
Insufficient data to calculate the Forecast Recovery
Insufficient data to calculate the Forecast Recovery
Insufficient data to calculate the Forecast Recovery



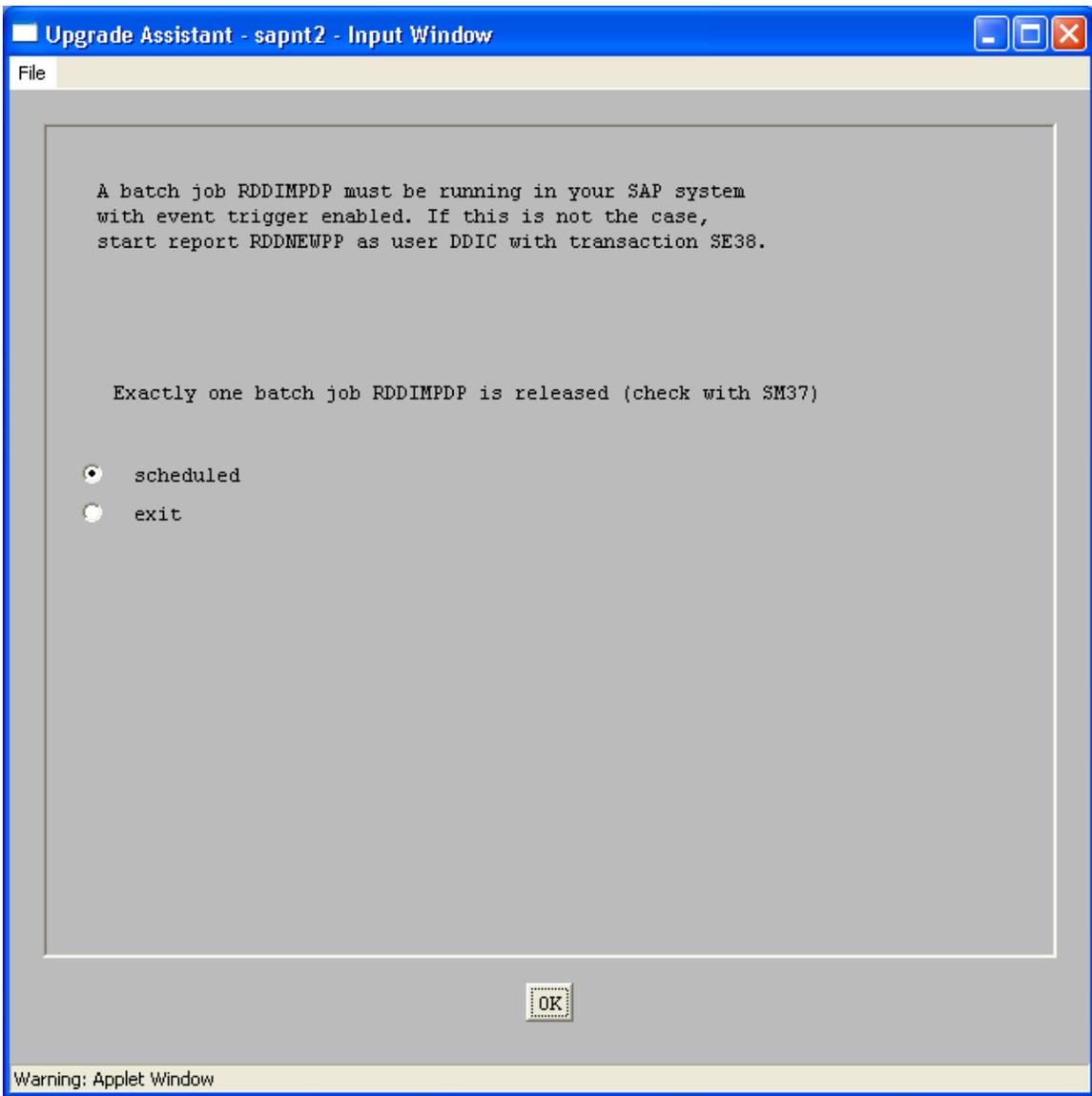
Milestone runtime

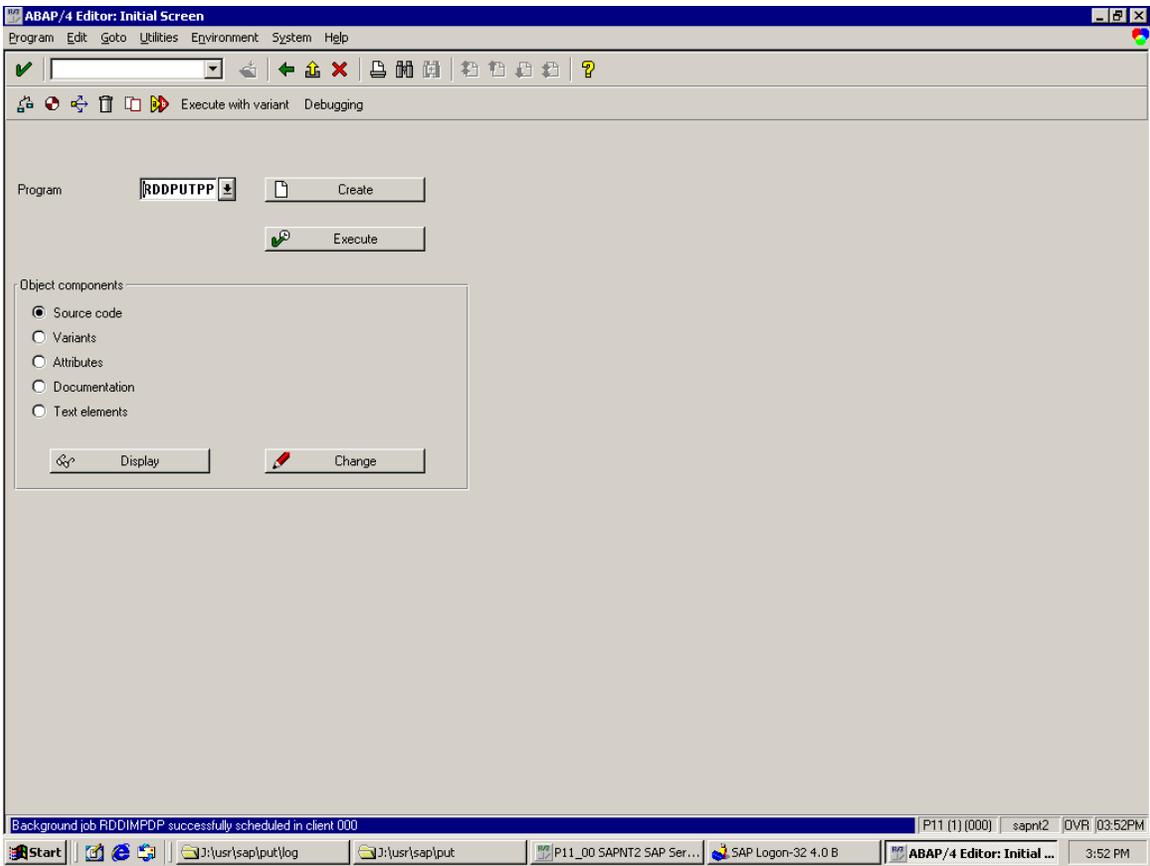
0 %

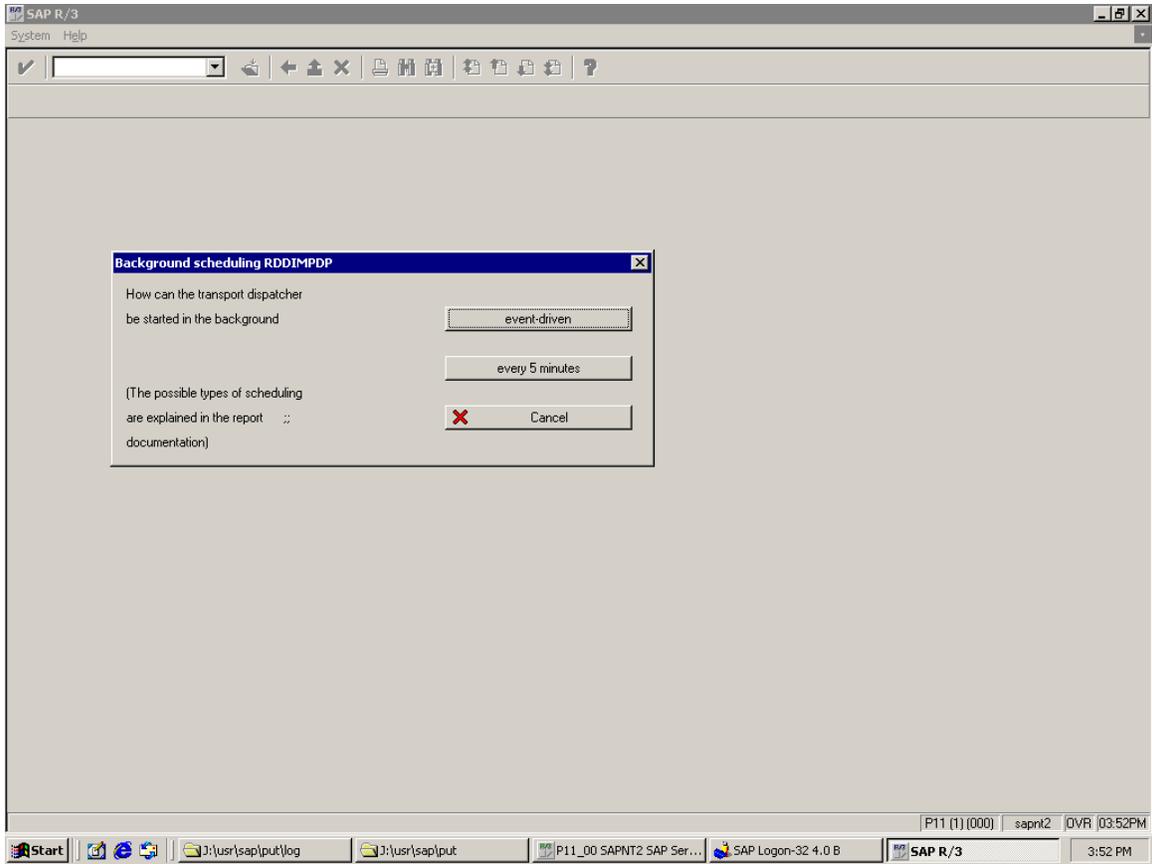
Upgrade runtime

0 %

Warning: Applet Window







Credits to the Original Uploader in AF and thanks to the person involved in making this wonderful documentation with screenshots.

Converted to PDF by Jimstex for [SAP Database – Unofficial SAP Knowledge Base](#)