SAP BW 3.X UPGRADE to SAP NetWeaver 2004s BI

PROJECT BY SAP LABS AND SUN MICROSYSTEMS

Applicable Releases:
SAP BW 3.X
SAP NetWeaver 2004s BI

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Chapter 1

Executive Summary

Customers planning for upgrade from NW2004 ABAP Stack with SAP BW 3.X to SAP NW2004s ABAP Stack with BI and customers planning for NW2004 ABAP Stack with SAP BW 3.X with add-in installation of AS-Java can use this document as a guideline for their technical upgrade path.

The goal of this document is to explain the following two possible upgrade paths ensuring that the existing data and BI functionalities are working as before the upgrade.
- (a) NW 2004 ABAP Stack to NW 2004s ABAP Stack.
- (b) NW 2004 ABAP Stack to NW 2004s ABAP Stack with Add-in installation of AS-Java, BI-Java, EP etc as add in usage types.

The Key learning's in the upgrade project and some useful Tips have been compiled in this document, which we believe will help in significant reduction in upgrade time.

The Operating System used in this project is Sun Solaris 10 with MaxDB.

Technical Upgrade of NW 2004 ABAP Stack with SAP BW 3.X to NW2004s ABAP Stack with BI was completed in just 23 hours. Add-in installation of AS-Java, BI-Java and EP took another 9 hours.

Chapter 2

Introduction

2.1 SAP NetWeaver 2004s

The SAP NetWeaver technology platform is a comprehensive integration and application platform that helps reduce the total cost of ownership (TCO). It facilitates the integration and alignment of people, information, and business processes across organizational and technological boundaries. SAP NetWeaver easily integrates information and applications from virtually any source. It interoperates with and can be extended using the primary market technologies – Microsoft .NET, Sun's J2EE, and IBM WebSphere. SAP NetWeaver is the technical foundation for mySAP™ Business Suite and SAP® xApps™ solutions and ensures maximum reliability, security, and scalability, so mission-critical business processes run smoothly. And by providing pre-configured business content, it helps reduce the need for custom integration and lowers TCO.

SAP NetWeaver 2004s is the mySAP Business Suite edition of SAP NetWeaver 2004. With IT practices, IT scenarios and usage types, a new view of SAP NetWeaver is introduced:

- IT practices allow customers to adopt core functionality of SAP NetWeaver in incremental phases. Each practice can be broken into one or multiple IT scenarios, similar to a business scenario. Addressing their immediate IT needs, organizations can implement IT practices projects in stages, since the platform's components are tightly integrated, within a sustainable cost structure.

- With IT scenarios, SAP introduced a scenario based go-to-market approach that helps address customers' most important business issues more flexibly, by providing them with modular industry-specific solutions,with a fast total return on investment (ROI) and predictable investment levels that support their end-to-end business processes.

- Usage types determine the role which a system plays in a given (distributed) scenario. They represent the capabilities offered by a collection of installed and configured (technical) software components. Usage types are a new structuring element for SAP software on a technical level

2.2 SAP NetWeaver 2004s BI

The reporting, analysis, and interpretation of business data is of central importance to a company in guaranteeing its competitive edge, optimizing processes, and enabling it to react quickly and in line with the market. With Business Intelligence (BI), SAP NetWeaver provides data warehousing functionality, a business intelligence platform, and a suite of business intelligence tools with which an enterprise can attain these goals. Relevant business information from productive SAP applications and all external data sources can be integrated, transformed, and consolidated in BI with the toolset provided. BI provides flexible reporting, analysis, and planning tools to support you in evaluating and interpreting data, as well as facilitating its distribution. Businesses are able to make well-founded decisions and determine target-orientated activities on the basis of this analysis.
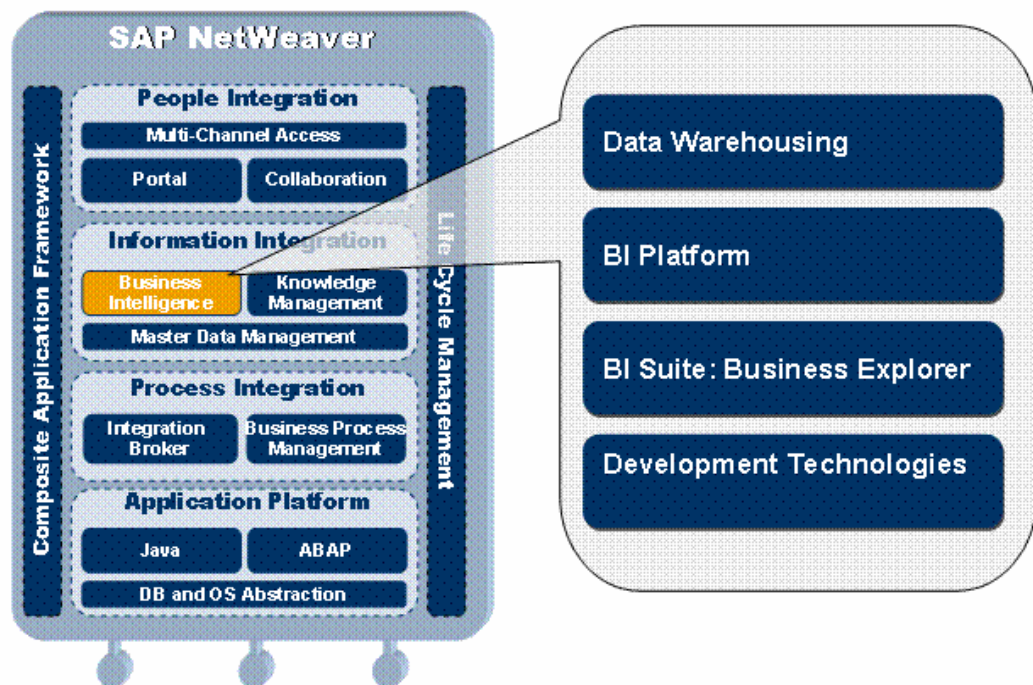
2.3 Solaris 10

Sun's Solaris™ 10 Operating System (OS) is a reflection of Sun's continued commitment to innovation, with many new features and technologies that offer dramatic benefits. The Solaris 10 OS is designed to help organizations optimize system utilization levels, deliver extreme performance, and provide unparalleled security — all with relentless, around-the-clock availability.
The Solaris 10 Operating System delivers a breathtaking new set of features designed to dramatically improve performance, availability, and manageability. New key features include:

- Solaris Containers
- DTrace
- TCP/IP Stack Improvements
- Predictive Self-Healing
- Solaris Cryptographic Framework
- Process Rights Management Facilities
- Solaris ZFS File System

The unique combination of features found in the Solaris 10 OS allows it to detect and correct faults before they result in application failures, deliver optimized resource utilization, provide higher performance, and protect applications with unparalleled security — all across multiple platform and processor architectures.

Chapter 3

Environment Setup

3.1 Hardware Environment

The setup was carried out on the SF V890 Server. The server has the following configuration.

Model Sun Fire V890
CPU 8 UltraSPARC™ IV dual thread 64bit CMT @1.35-GHz (16 Threads)
RAM 32 GB
Storage 6 X 146 GB (10K-RPM FC-AL disks)
More details on the hardware can be found at
http://www.sun.com/servers/midrange/v890/index.jsp

3.2 Software Environment

Software	Source Version	Target Version
OS	Solaris 10	Solaris 10
RDBMS	MaxDB 7.5 Build 18	Max DB 7.6 Build 21
SAP-ABAP	NW04 SP15	SAP NW2004s SP6
SAP-J2EE	NW04 SP15	SAP NW2004s SP6
NetWeaver Components	-	SAP BI-Java 7.0 SP6 SAP EP 7.0 SP6

Chapter 4

Planning & Preparation

4.1 Prerequisites checks for OS, RDBMS and SAP

4.1.1 OS :-
On the OS part we should check all the requirements which we need to fulfill for NW2004s and the MAXDB Version 7.6 on Solaris side.

Please also refer to the http://service.sap.com/pam and /sizing and ensure that the current CPU, Memory and disk capacity are sufficient for the target upgrade release.

For SAP NetWeaver 2004S and MaxDB 7.6 we will need the Solaris 9 or Solaris 10 as OS platform.

4.1.2 RDBMS :-

We need to first Upgrade the MaxDB 7.5 Build 18 to MaxDB 7.6 Build 21 , as the NW2004S version requires minimum MaxDB 7.6 Build 09 . But there are certain issues like " Incorrect data is saved for Unicode fields of the type VARCHAR that have a defined length of between 128 and 254 characters" Ref to SAP Note 836947 . So we have patched the database to the Build 21 of the MAXDB 7.6 Version .
We need to check for the OS version which are supported for the MAXDB 7.6 Version . As of now MAXDB 7.6 is Supported on Solaris 9 and Solaris 10 .If you are running lower than this version , then you need to plan for the OS Upgrade as the first Activity .
Check whether the sdb user is locked or not .If not locked , lock it with the command 'passwd –l sdb' . Then check for the permissions for the files as shown in the fig below .

```
root@blrlsunv890 # passwd -l sdb
passwd: password information changed for sdb
root@blrlsunv890 # cd /usr/spool/sql
root@blrlsunv890 # ls -l
total 16
lrwxrwxrwx   1 sdb        sdba          19 Feb 22 21:06 dbspeed -> /sapdb/data/dbspeed
lrwxrwxrwx   1 sdb        sdba          16 Feb 22 21:06 diag -> /sapdb/data/diag
lrwxrwxrwx   1 sdb        sdba          16 Feb 22 21:06 fifo -> /sapdb/data/fifo
drwxrwxrwx   2 sdb        sdba         512 Feb 22 21:06 ini
lrwxrwxrwx   1 sdb        sdba          15 Feb 22 21:06 ipc -> /sapdb/data/ipc
lrwxrwxrwx   1 sdb        sdba          15 Feb 22 21:06 pid -> /sapdb/data/pid
lrwxrwxrwx   1 sdb        sdba          16 Feb 22 21:06 pipe -> /sapdb/data/pipe
lrwxrwxrwx   1 sdb        sdba          16 Feb 22 21:06 ppid -> /sapdb/data/ppid
root@blrlsunv890 # cd ini
root@blrlsunv890 # ls -l
total 2
-rw-rw-rw-   1 sdb        sdba         187 Feb 22 21:06 SAP_DBTech.ini
root@blrlsunv890 # cd ..
root@blrlsunv890 # chmod -R 777 ini
root@blrlsunv890 # ls -lR ini
ini:
total 2
-rwxrwxrwx   1 sdb        sdba         187 Feb 22 21:06 SAP_DBTech.ini
root@blrlsunv890 #
```

As mentioned in the SAP Note 566883 check for bad indexes if any before the Upgrade as shown in the dig below or with the DBMGUI tool.

```
blrlsunv890:sqdb4s> dbmcli -d B4S -u control,control
dbmcli on B4S>sql_execute select * from info_bad_indexes
ERR
-24988,ERR_SQL: sql error
100,Row not found

---
dbmcli on B4S>
```

You should run the ABAP report SAP_DROP_TMPTABLES as mentioned in the ---- SAP Note: 793550

4.3.3 SAP

1) As per SAP Note :544623.Execute the reports

RUTTTYPACT and UMG_POOL_TABLE

2) Ensure that there is no pending background jobs and updates in the source system.

3) Ensure that there is no unreleased request in the queue and objects with repair flag set.

4) No unconfirmed support packages in the SPAM queue.

4.2 Actual Steps for Upgrade (flow chart)

```
                         ┌──────────┐
                         │  START   │
                         └────┬─────┘
                              │
              ┌───────────────▼────────────────┐
              │ Decide SAP Target Version .( SAP NW/2004s ) │
              └───────────────┬────────────────┘
                              │
        ◇ Check for the Reqd OS Version for Target Rel ◇ ──────► ┌──────────────────────────────────┐
        ◇ Solaris 9 or Solaris 10                      ◇         │ Upgrade OS to Solaris 9 or 10    │
        ◇ http://service.sap.com/pam Netweaver -> Release 2004s ◇│ http://docs.sun.com/app/docs/doc/817-5505 │
                              │                                  └──────────────────────────────────┘
        ◇ Check for the reqd RDBMS Version for Target Rel ◇ ──► ┌──────────────────────────────────┐
        ◇ MAXDB 7.6                                        ◇     │ Upgrade the Current RDBMS        │
        ◇ http://service.sap.com/pam Netweaver -> Release 2004s ◇│ Maxdb 7.6 [Section 6.2]          │
                              │                                  │ http://service.sap.com/instguides >other doc > │
                              │                                  │ DB Upgrade > MAXDB               │
                              │                                  └──────────────────────────────────┘
  ┌───────────────────────────▼──────────────────────────────────┐
  │ Carry out the Prerequisite action specifc to SAP Component. eg  SAP BI  [Secttion 4.1.3] │
  │ https://service.sap.com/instguides > Netweaver > 2004s > Upgrade > BI ABAP > Platform │
  └───────────────────────────┬──────────────────────────────────┘
  ┌───────────────────────────▼──────────────────────────────────┐
  │ Carry Out the Prerequisite Steps on OS n RDBMS Side            │
  │ eg setup /usr/put directory,os params,rdbms params for target release  [Section 4.1.1/2] │
  │ https://service.sap.com/instguides > Netweaver > 2004s > Upgrade > BI ABAP > Platform │
  └───────────────────────────┬──────────────────────────────────┘
                ┌─────────────▼──────────────┐
                │ Carry out the Complete System Backup │
                └─────────────┬──────────────┘
                ┌─────────────▼──────────────┐
                │ Install the SAP Upgrade Tool . Uncar │
                │ Target SPAM and SP ,ADDON in EPS/in │
                └─────────────┬──────────────┘
                              │
        ◇ Execute PREPARE RUN [Section 6.3] ◇ ──────► ┌──────────────────────────┐
                              │                        │ Repeat the  PREPARE RUN  │
                              │                        └──────────────────────────┘
                ┌─────────────▼──────────────┐
                │ Carry out Backup           │
                └─────────────┬──────────────┘
                ┌─────────────▼──────────────┐
                │ Start the Actual Upgrade ie SAPup  [Section 6.4] │
                └─────────────┬──────────────┘
                ┌─────────────▼──────────────┐
                │ After Upgrade take complete system backup │
                └─────────────┬──────────────┘
  ┌───────────────────────────▼──────────────────────────────────┐
  │ Post Upgrade Activities n Check for SAP Application Functionalities [Section 6.5] │
  └───────────────────────────┬──────────────────────────────────┘
                         ┌─────▼────┐
                         │   END    │
                         └──────────┘
```

Chapter 5

Roadmap for the Upgrade Process

```
┌─────────────────────────────┐                    ┌─────────────────────────────┐
│  ┌────────┐   ┌─────────┐    │                    │  ┌────────┐   ┌─────────┐    │
│  │ ABAP   │   │ BI      │    │                    │  │ ABAP   │   │ BI      │    │
│  │ 6.40   │   │ Content │    │  Resource Minimized│  │ 7.00   │   │ Content │    │
│  └────────┘   │ 3.53    │    │  ●──────────────▶  │  └────────┘   │ 7.02    │    │
│               └─────────┘    │                    │               └─────────┘    │
│                              │                    │  ┌────────┐   ┌─────────┐    │
│    ┌──────────────┐          │                    │  │ J2EE   │   │ EP      │    │
│    │  MaxDB 7.5   │          │                    │  │ 7.00   │   │ 7.00    │    │
│    └──────────────┘          │                    │  └────────┘   └─────────┘    │
│                              │                    │     ┌──────────────┐         │
│       SOLARIS 10             │                    │     │  MaxDB 7.6   │         │
│                              │                    │     └──────────────┘         │
│                              │                    │        SOLARIS 10            │
└─────────────────────────────┘                    └─────────────────────────────┘
```
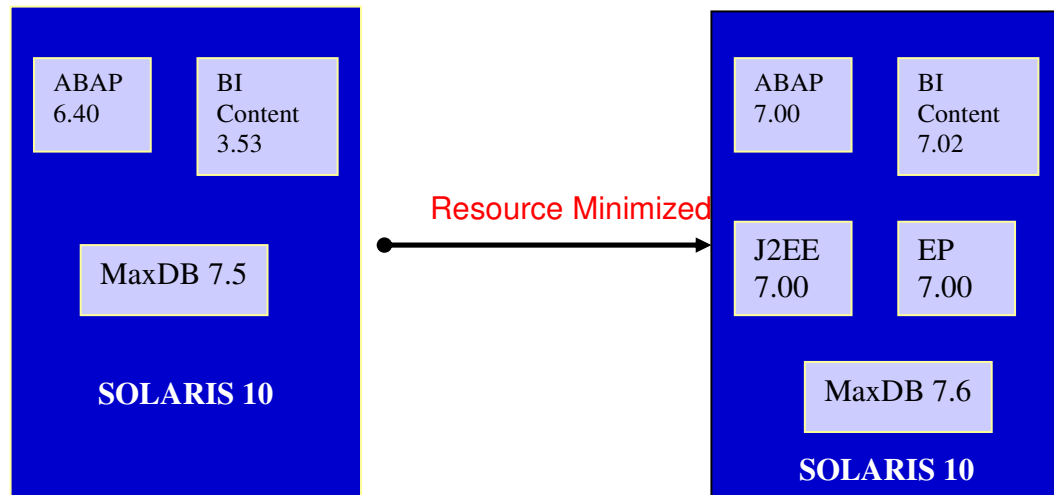
SAP provides two upgrade strategies: *downtime-minimized* and *resource-minimized*. We followed resource-minimized approach for the upgrade process. The *resource-minimized* strategy only enables you to run either the production system or the shadow system. This strategy requires no extra system resources.

Advantages of using resource-minimized as follows:

- No additional system resources during upgrade
- No additional space requirements to be able to recover the database
- Disk capacity for a possible database recovery is not monitored

Disadvantage of using resource-minimized as follows:

- Long downtime
- Offline backup required after upgrade

5.1 Phases of an SAP system upgrade:
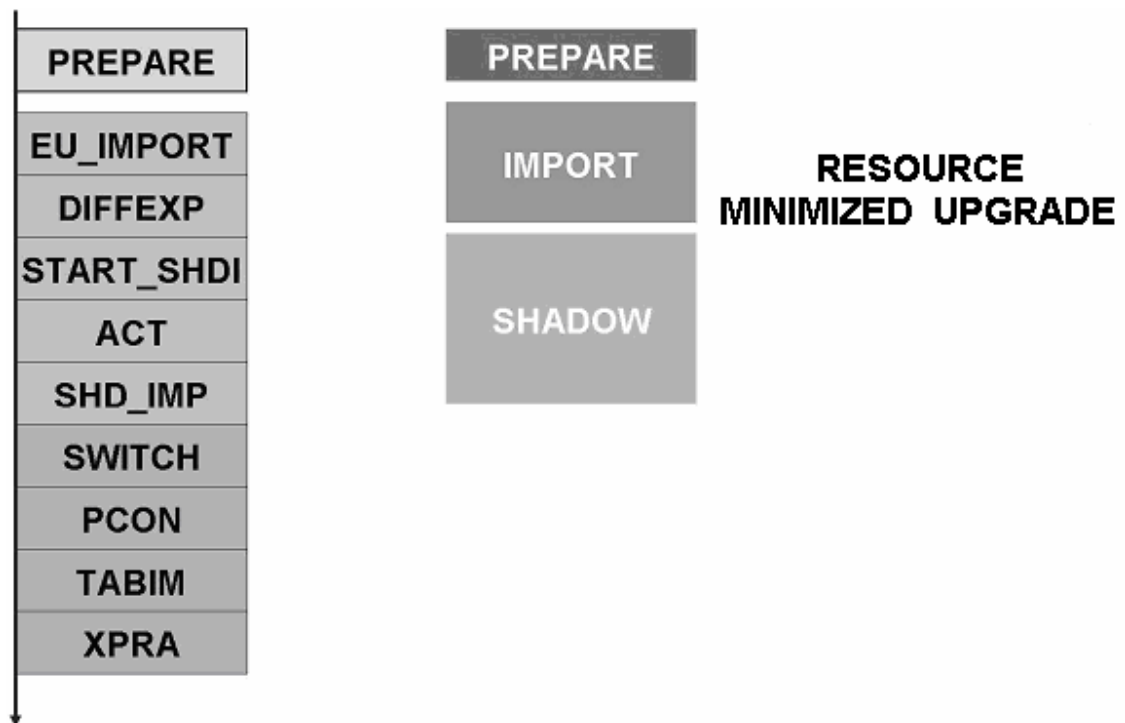
Important Phases of Upgrade:

PREPARE

PREPARE has to run prior to the SAP System upgrade. You have to
repeat PREPARE so often, until it is error-free. PREPARE performs checks on
the source release. For example, if the source release of the SAP System, the
database, and the operating system is sufficient for this upgrade, if there is
enough space in the database available, if no modified SAP objects are still in
unreleased transport requests.

Important SAPUP sub phases:

EU_IMPORT

. INITSUBST: initialization of the system switch upgrade
. SPACE_CHK: check of free space in the database
. LOCKEU_PRE: asks for the point of time when the Workbench has to be locked
. EU_IMPORT: tables which can be exchanged are imported into the shadow
. EUVIEWIMP: views are imported into the shadow

. REPACHK2: determination of locked SAP objects
. NEWTAB_CHK: determination of new tables in this system
. NEWTAB_CRE: tables that do not exist in the current repository are created

START_SHDI (start shadow instance)

START_SHDI_FIRST: starts the shadow instance. With the shadow instance you can connect to the shadow system, which is installed as an MCOD system in the database of the SAP System. This shadow system is needed for certain actions on the shadow repository

ACT (Activation)

In phase ACT the customer objects are activated. Maybe this needs adjustment via transaction SPDD.

SHD_IMP (shadow Import)

Very important phase. The ICNV is running now when the final structures of the tables are defined. This means that not only large tables that go back to SAP standard are converted, but also tables that are changed by SAP Support Packages of customer modifications.

PCON (parallel conversion)

. Phase PARCONV_UPG is the new PCON. Here are application tables converted which cannot be changed by an ALTER TABLE statement.
. In PMVNTAB_UPG some application views are converted and the remaining name tab entries are activated.
. LOAD_CRE creates new ABAP load tables.

TABIM and **XPRA**

. In phase TABIMP_UPG data is imported into control tables.
. Phase XPRAS_UPG starts XPRA programs which create entries in changed tables
. REIMPDOC imports documentation which was changed or created by the customers
. In phase PRODCHK the requirements for productive operation are checked.
. Phase CHK_POSTUP formerly known as LONGPOST shows errors with a P
  mark. These are errors you can remove after the upgrade.
. Phase SPAUINFO remembers to adjust objects in transaction SPAU.

5.2 Tools for Upgrade

Upgrade Assistant

With the Upgrade Assistant the SAP System upgrade process
runs independently from a certain front-end. So you can control and monitor
the progress of the upgrade from a number of different places. Front-end and
upgrade processes are divided into separate components so that the entire
upgrade does not terminate if a connection fails.
This provides optimal support for a remote upgrade. The Upgrade Assistant
provides an alert mechanism that lets you start an external program (for
example: sending an SMS to your mobile).
The Upgrade Assistant (server and GUI) is implemented in Java.

SGEN:

The most important ABAP loads for the basis system are upgraded with
the new release. However, there are not yet any generated ABAP loads for all
of the transactions from the different SAP application areas. When you call a
program, a load is automatically generated if it does not already exist. This
may, however, reduce production system performance. To avoid this, you can
use transaction SGEN to generate the missing loads.

PREPARE

PREPARE Phase/tool will check for all the prerequisites for OS Version ,DB
Version and SAP Version. PREPARE collects SAP Support Packages and Add-
Ons for binding them to the SAP System upgrade. This is very important.
Furthermore, PREPARE imports tools in the source SAP System that are needed
for the SAP System upgrade.

Upgrade Monitor:

The Upgrade Monitor lets you monitor the upgrade and helps you recognize any
processes that have stopped.

Chapter 6

Upgrade Process

6.1 OS Actions

Create the upgrade directory /usr/sap/put on the host where central instance runs. We estimated 6 GB of space for this directory.

```
drwxr-xr-x    2 b4sadm   sapsys     512 Feb 22 20:04 usr_sap
root@blrlsunv890 # chown b4sadm:sapsys bw04s_upg
root@blrlsunv890 # ls -l
total 12
drwxrwxrwx    2 b4sadm   sapsys     512 Mar  7 14:55 bw04s_upg
```

```
root@blrlsunv890 # cd /usr/sap
root@blrlsunv890 # ls -l
total 14
lrwxrwxrwx    1 root     root        20 Feb 22 19:45 B4S -> /space/maxdb/usr_sap
lrwxrwxrwx    1 q3sadm   sapsys      15 Oct  6 12:18 Q3S -> /space/backup/5
drwxr-xr-x    2 root     root       512 Feb 23 08:28 installation_support
lrwxrwxrwx    1 root     root        22 Mar  7 14:57 put -> /space/maxdb/bw04s_upg
```

We added one data volume of 18 GB to the RDBMS file system so that free space in database is more than 50%.
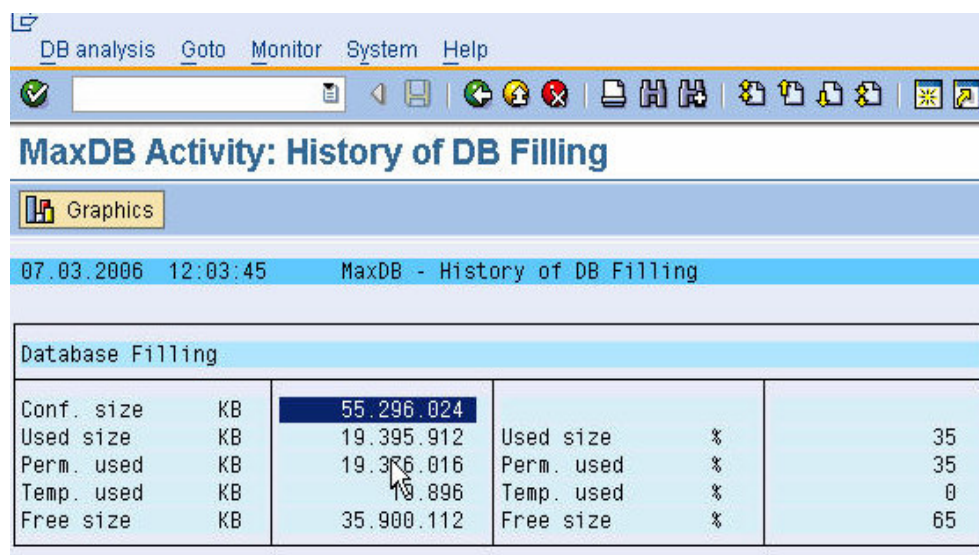
Ensure that there is sufficient free space available for archived RDBMS logs during the whole upgrade process.

After installing the upgrade assistant server, check for SAPup version and upgrade or apply the corrections FIX_<PRODUCT_NAME>.SAR to the upgrade directory. Please also refer SAP note 813658

6.2 RDBMS Upgrade

The SAP system is stopped for the <SID> instance and the database is also stopped .Then we will launch the DBUPDATE.SH script as the root user and will follow the necessary inputs .

```
root@blrlsunv890 # pwd
/space/maxdb/sapinst/db_upg
root@blrlsunv890 # ps -ef | grep sdb
    root  2130  1272   0 13:51:19 pts/1        0:00 grep sdb
root@blrlsunv890 # /space/maxdb/inst/rdbms/MAXDB_SOLARIS_SPARC/DBUPDATE.SH


INFORMATION : This program upgrades the SAP DB / MaxDB database
              from at least version >= 7.3.00.25
              to MaxDB version 7.6.00.

              Note:
              As of version 7.5.00,
              the SAP DB database system is now called MaxDB.

              Upgrade strategy:
              In-Place Upgrade with SDBUPD

              To prepare for the upgrade you need a data backup
              as described in the upgrade guide:
              'Upgrade to MaxDB version 7.6.00' !
              You can find this on SAP Service Marketplace at:
              service.sap.com/instguides -> Other Documentation
              -> Database Upgrades -> MaxDB

Do you want to continue the upgrade [Y] :  Y
```

Start the actual Upgrade for the database .

```
Checking installation of C++ runtime ...

Please enter DB name [MDB] :  B4S

IndepProgPath : /sapdb/programs
IndepDataPath : /sapdb/data
INSTROOT      : /sapdb/B4S/db

Please enter DBM user          :  control
Please enter DBM user password :

Authorization successful

Supported MaxDB version 7.5.0 build 018

DB KERNEL      : 64-BIT


Execution of DB upgrade...


        MaxDB INSTANCE UPDATE
        *********************


starting installation Fr, Mar 03, 2006 at 13:53:04
operating system: Solaris SPARC 10
callers working directory: /space/maxdb/sapinst/db_upg
installer directory: /space/maxdb/inst/rdbms/MAXDB_SOLARIS_SPARC
archive directory: /space/maxdb/inst/rdbms/MAXDB_SOLARIS_SPARC


beginning to check sap db instances
start new instance update
```

Installation in Process

```
MaxDB instance "B4S" updated successfully Fr, Mar 03, 2006 at 13:57:08

####################################################
#  Upgrade to MaxDB version 7.6.00 finished successful  #
####################################################

C A U T I O N :
Perform a complete backup so that you can
recover the new database state if necessary.

root@blrlsunv890 # █
```

Mainly the script will ask for the control user password then it will mount the database in admin state and proceeds with the updating the instance , database and then finally will load system tables and will prompt you when all steps are over with the successful updation of the database as shown in the snap above .

The following screenshots will explain the versions checked after the upgrade process .

```
dbmcli on B4S>show version
OK


SERVERDB: B4S
Kernel Version   'Kernel    7.6.00   Build 009-123-105-149'
RTE    Version  'X64/SUN   7.6.00   Build 009-123-105-149'

---
dbmcli on B4S>inst_info
OK
KERNEL                        = Rel 7.6.00 Build 009-123-105-149
LIBOMS                        = Rel 7.6.00 Build 009-123-105-149
LIBDBPINSTALL                 = Rel 7.6.00 Build 009-123-105-149
LIBLVCBENCH                   = Rel 7.6.00 Build 009-123-105-149
LIBSPHSAPDB                   = Rel 7.6.00 Build 009-123-105-149


---
dbmcli on B4S>db_enum
OK
B4S     /sapdb/B4S/db                        7.6.00.09    fast    running
B4S     /sapdb/B4S/db                        7.6.00.09    quick   offline
B4S     /sapdb/B4S/db                        7.6.00.09    slow    offline
```

There are certain issues with the 09 build of the 7.6 version of the MaxDB database , so it is recommended in the SAP note 735598 to upgrade the database to the latest service pack or patch .So we upgraded to 7.6.0.21 build as shown in the snap .

```
/tmp/inst/maxdb-server-sun-64bit-sparc-7_6_00_21
root@blrlsunv890 # ./SDBUPD -d B4S -u control,control


        MaxDB INSTANCE UPDATE
        *********************


starting installation Fr, Mar 03, 2006 at 14:14:20
operating system: Solaris SPARC 10
callers working directory: /tmp/inst/maxdb-server-sun-64bit-sparc-7_6_00_21
installer directory: /tmp/inst/maxdb-server-sun-64bit-sparc-7_6_00_21
archive directory: /tmp/inst/maxdb-server-sun-64bit-sparc-7_6_00_21
```

```
checking parameters...
switch database state to ADMIN
switch database state to ONLINE
loading system tables...
MaxDB instance "B4S" updated successfully Fr, Mar 03, 2006 at 14:17:44
root@blrlsunv890 #
```

```
dbmcli on B4S>show version
OK


SERVERDB: B4S
Kernel Version  'Kernel   7.6.00   Build 021-123-117-795'
RTE    Version  'X64/SUN  7.6.00   Build 021-123-117-795'

---
dbmcli on B4S>inst_info
OK
KERNEL                      = Rel 7.6.00 Build 021-123-117-795
LIBOMS                      = Rel 7.6.00 Build 021-123-117-795
LIBDBPINSTALL               = Rel 7.6.00 Build 021-123-117-795
LIBLVCBENCH                 = Rel 7.6.00 Build 021-123-117-795
LIBSPHSAPDB                 = Rel 7.6.00 Build 021-123-117-795


---
dbmcli on B4S>db_enum
OK
B4S     /sapdb/B4S/db                   7.6.00.21     fast    running
B4S     /sapdb/B4S/db                   7.6.00.21     slow    offline
```

6.3 PREPARE RUN

We need to start the upgrade assistant server before starting the Upgrade Assistant GUI.

```
blrlsunv890:b4sadm> java -version
java version "1.4.2_09"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.2_09-b05)
Java HotSpot(TM) Client VM (build 1.4.2_09-b05, mixed mode)
blrlsunv890:b4sadm> JAVA_HOME=/opt/j2sdk1.4.2_09
blrlsunv890:b4sadm> export JAVA_HOME
blrlsunv890:b4sadm> pwd
/space/maxdb/bw04s_upg
blrlsunv890:b4sadm> java -cp /usr/sap/put/ua/uagui.jar UaGui
```

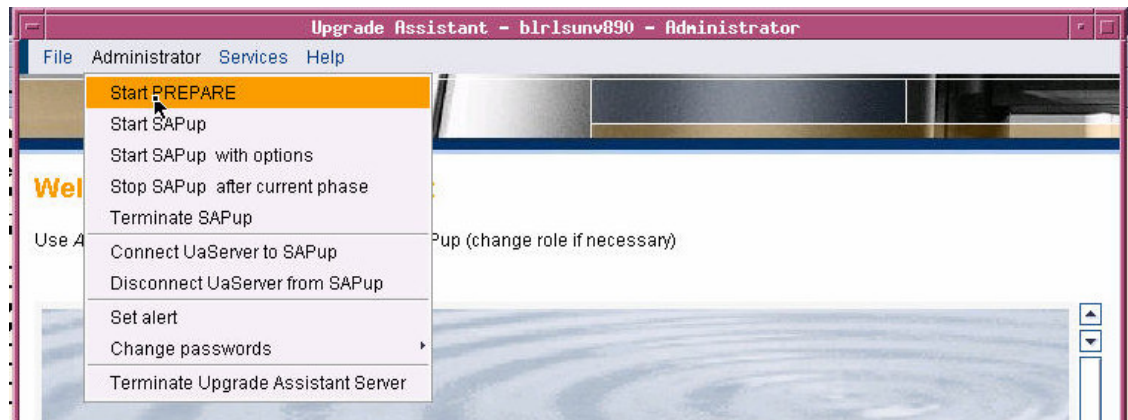Starting the Upgrade Assistant GUI

SAP NetWeaver
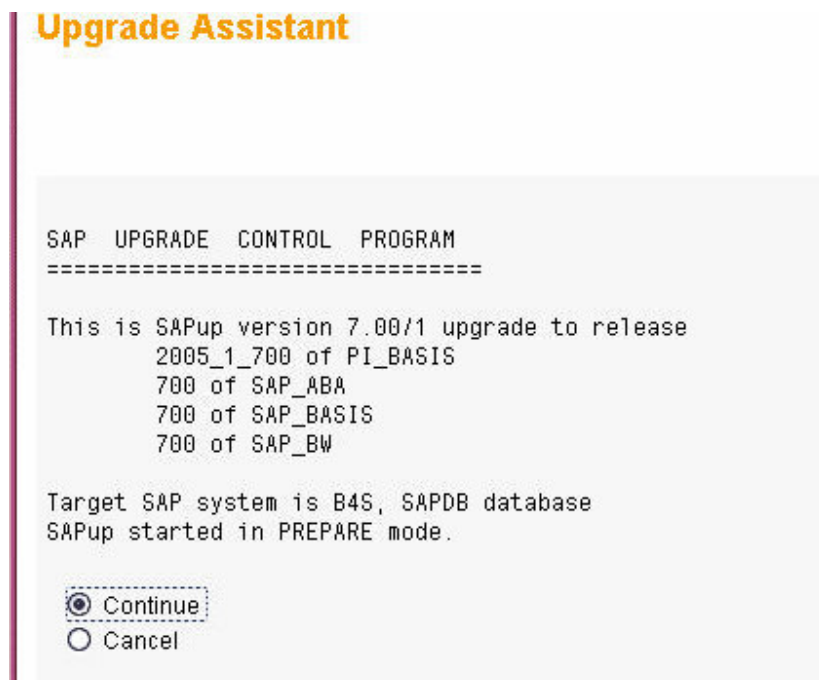
Upgrade Assistant

Host blrlsunv890

Port 4241

Log on

Starting the PREPARE RUN

The following snap shows the modules the PREPARE program will undergo .We can't skip the modules marked as the MANDATORY. In our case we selected all the modules to go through .

Upgrade Assistant

Selection	Name	Status	Mandatory
☑	Parameter input	initial	yes
☑	Initialization	initial	yes
☑	Import	initial	yes
☑	Extension	initial	yes
☑	Integration	initial	yes
☑	Installation	initial	yes
☑	General checks	initial	yes
☑	Activation checks	initial	yes
☑	Necessary checks for conversions	initial	yes
☑	Optional checks for conversions	initial	no
☑	Modification support	initial	no
☑	Pre-processing	initial	no

The follwing screens will explain the important parameters for the existing running instance the PREPARE phase asks as input before starting the actual upgrade process .

Upgrade Assistant

Supply the following information:

Confirm the name of your SAP system:

SAP SYSTEM ID   =   B4S

The hostname of your central SAP server:

SAP SYSTEM HOST =   blrlsunv890

Enter the SAP instance number:

INSTANCE NUMBER = 10

Upgrade Assistant

The path asked for is the path to your *OLD* SAP kernel.
The path to the SAP kernel:

KERNEL PATH   = /usr/sap/B4S/SYS/exe/run

The system identifier of your database:

DATABASE ID   =   B4S

The hostname of your database server:

DATABASE HOST = blrlsunv890

```
Supply the following information:

The password for SAP user DDIC in client 000
 (may be 19920706):

DDIC PASSWORD =  [*******                    ]

Verify password for SAP user DDIC:

DDIC PASSWORD =  [*******                    ]
```

Explain the significane of the parameters for the R3trans processes and why they have taken as 3 .

```
Supply the following information:

The maximum number of parallel processes during uptime:

MAXIMUM UPTIME PROCESSES = [1                          ]

The number of parallel import processes:

R3TRANS PROCESSES =       [3     ▶                     ]

The maximum profile value of "bufreftime":

MAXIMUM SYNC TIME =       [120                         ]
```

```
The path to the EPS root directory:
  (EPS inbox is in <EPS_ROOT>/in)

EPS ROOT    = [/usr/sap/trans/EPS        ]
```

While upgrading the SYSTEM to the new release we have the option for the addition of the new addons and putting the support packages itself in the EPS/in and then it will be applid to the new system directly and will save the time for after the upgrade . The addition of the addons and the support packages at this stage willl give a great benefit for reducing the downtime afterwords.

Upgrade Assistant

Current phase : DBCHK_PRE

```
? R3TRANS PROCESSES =

The maximum profile value of "bufreftime":
? MAXIMUM SYNC TIME =

Waiting for input since Mar 8, 2006 10:41:35 AM


> MAXIMUM SYNC TIME =  120
> MAXIMUM UPTIME PROCESSES =  1
> R3TRANS PROCESSES =  3


The path to the EPS root directory:
 (EPS inbox is in <EPS_ROOT>/in)
? EPS ROOT     =
```

Upgrade Assistant

```
ERROR: Shared Library Path is insufficient !    Check file /usr/sap/put/log/DBSDBDLL.LOG for furthe

  ◉ Continue
  ○ Cancel
```

Note:

In **DBCHK_PRE** phase in **PREPARE RUN** fails with the message
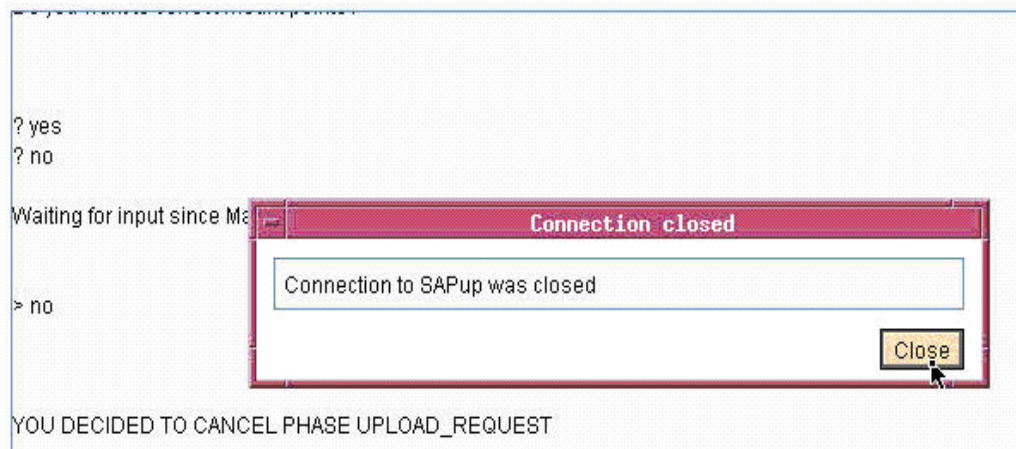
Error: Shared library path is insufficient

Solution

Before executing Upgrade Assistant server and GUI please append this environment variable in both shells with following value and also refer SAP Note: 817463

LD_LIBRARY_PATH-->Append with /sapdb/programs/lib/lib64

Upgrade Assistant

Current phase : UPLOAD_REQUEST

? yes
? no

Waiting for input since Ma

Connection closed

Connection to SAPup was closed

Close

> no

YOU DECIDED TO CANCEL PHASE UPLOAD_REQUEST

Upgrade Assistant

ERROR: full access to directory /usr/sap/trans denied !

◉ Continue
○ Cancel

Note:

In **Upload_Request** Phase in **PREPARE RUN** fails with the message

Error: Full access to directory /usr/sap/trans denied

Solution:

Provide chmod 777 permission to the directory /usr/sap/trans

```
Product update and media decision overview:
Decide about update type and the Add On media kind.
```

Selection	Add-On ID	Source Release	Destination Release	Status	Note
☑	PI_BASIS	2005_1_640	2005_1_700	INST/UPG ...	570810
☑	BI_CONT	353	?	UNDECIDED	632429

The PI_BASIS is come as the part of the Upgrade export only and BI_CONT we added by uncaring the upgrade to the EPS/in directory .

```
Product update and media decision overview:
Decide about update type and the Add On media kind.
```

Selection	Add-On ID	Source Release	Destination Release	Status	Note
☑	PI_BASIS	2005_1_640	2005_1_700	INST/UPG WITH STD CD	570810
☑	BI_CONT	353	702	UPG WITH SAINT PACK	632429

The package for the Upgrade for BI_CONT 702 is already untarred in the EPS/in directory with SAPCAR and same for support packages .

```
Decision about Add-on PI_BASIS
================================



Select the operation to be performed:

Operation
    ○ Upgrade with Add-on CD
    ○ Upgrade with SAINT package
    ◉ Upgrade to version on std. Upgrade CDs
    ○ no decision yet
```

```
Decision about Add-on BI_CONT
==============================



Select the operation to be performed:

Operation

          ○ Upgrade with Add-on CD
          ◉ Upgrade with SAINT package
          ○ Keep (with vendor key)
          ○ Delete with CD
          ○ no decision yet

Vendor Key (for KEEP decision only):

KEY = 66EBF ADD0
```

```
Decision about Add-on BI_CONT
==============================



Select the operation to be performed:

Operation

          ○ Upgrade with Add-on CD
          ◉ Upgrade with SAINT package
          ○ Keep (with vendor key)
          ○ Delete with CD
          ○ no decision yet

Vendor Key (for KEEP decision only):

KEY =
```

```
Component                Package Lev

SAP_ABA                  0006
SAP_BASIS                0006
PI_BASIS                 0006
SAP_BW                   0006
BI_CONT                  0003

  ◉ Continue
  ○ Cancel
```

There is also a technical restriction for this step . PREPARE collects SAP Support Packages and Add-Ons for binding them to the SAP System upgrade. This is very important. If you do not bind enough SAP Support Packages to the upgrade, this will result in a loss of data during the SAP System upgrade. If you do not maintain your Add-Ons, the whole SAP System can become unstable and inconsistent

The following table gives correlation of Source and Target release as per http://service.sap.com/sp-stacks

SP stack of SAP NetWeaver ´04	SP stack of SAP NetWeaver 2004s
SP12 and below	SP04
SP13 + 14	SP05
SP15	SP06
SP16	SP07
SP17	SP08

In this step we need to decide for what target release we should go as per the source release in order to avoid any data loss or data inconsistencies.

Please select the Support Packages to include:

Component	Minimum Level	Equivalent Level	Current Level	Selection
SAP_ABA	0004	0005	0001	0006
SAP_BASIS	0004	0005	0001	0006
PI_BASIS	0004	0005	0001	0006
SAP_BW	0004	0005	0001	0006
BI_CONT	<none>	0001	<none>	0003

In PREPARE Phase, we need uncar latest SPAM version in /EPS/in directory.
This is very important step in PREPARE

```
The following SPAM Update package has been found:

    Request: SAPKD70020
    Version: 0020
    Text:    SPAM/SAINT Update - Version 700/0020

You can
- include this SPAM Update
- search for a newer SPAM Update (in directory "/usr/sap/trans/EPS/in")
- skip the inclusion

    ◉ Include
    ○ Search
    ○ Skip
```

Updating latest Version of SPAM

                  The follwing screens will also talk about the one of the
most important parameters for the input phase .These are mainly the parameters
for the shadow instance .The instance number should not be in use already .If
you have deleted any instance installation and trying to use the same numbers
do not forget to remove the entries from /etc/services file for the ports else
choose the different port numbers altogether will always be a better option .

```
Supply the following information:

Enter an unused instance number for the shadow system:

INSTANCE NUMBER  =  12
```

Upgrade Assistant

Current phase : SHDINST_SDB_CHK

? no
? yes

Waiting for input since Mar 8, 2006 6:08:34 PM

> no
working ...
>> 18:09:50 PREPARE: END OF PHASE   SHDINST_CPY
>> 18:09:50 PREPARE: START OF PHASE SHDINST_ADAPT
working ...
>> 18:09:50 PREPARE: END OF PHASE   SHDINST_ADAPT
>> 18:09:50 PREPARE: START OF PHASE SHDINST_MOD
working ...
>> 18:09:50 PREPARE: END OF PHASE   SHDINST_MOD
>> 18:09:50 PREPARE: START OF PHASE SHDINST_REQ

Upgrade Assistant

ERROR: Error by create user SAPB4SSHD ()

◉ Continue
◯ Cancel

Note:

In **SHDINST_SDB_CHK** phase in **PREPARE RUN** fails with message

Error: Error by create user SAP<SID>SHD

Solution:

We need to create this user manually in Database. Please also refer to SAP Note 39439

Upgrade Assistant

```
Statuses of the PREPARE modules:

Parameter input                   : succeeded
Initialization                    : succeeded
Import                            : succeeded
Extension                         : succeeded
Integration                       : succeeded
Installation                      : failed
General checks                    : failed
Activation checks                 : succeeded
Necessary checks for conversions  : succeeded
Optional checks for conversions   : succeeded
Modification support              : succeeded
Pre-processing                    : succeeded

    ◉ Continue
    ○ Cancel
```

Note:

In **'Installation Module'** of **PREPARE RUN** it fails to add the shadow instance port entries in /etc/services

Solution:

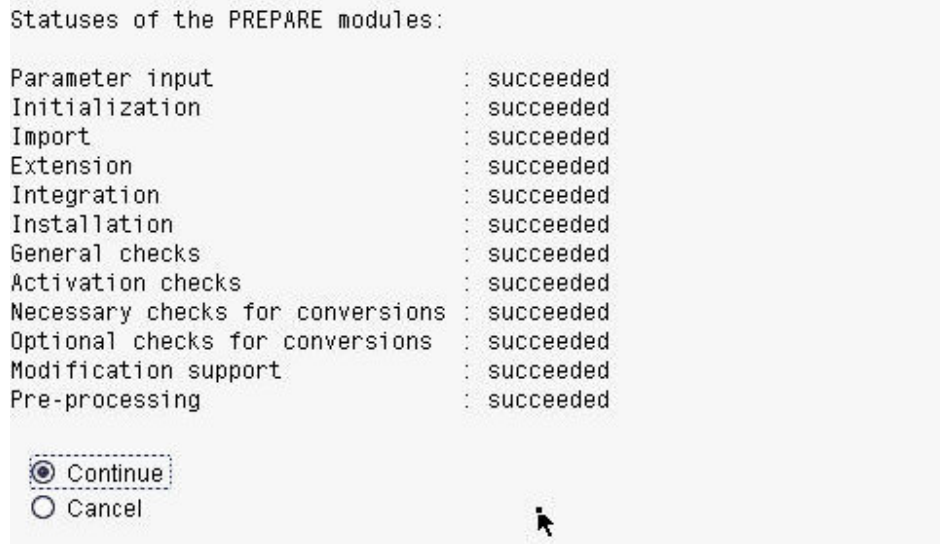Manually enter the shadow instance sapmsSHD<SID>, Sapgw<SYSNR>, sapdp<SYSNR> and repeat the phase.

In **'General Checks Module'** of **PREPARE RUN** it fails for Permission issue for files

Solution:

Add the write permission for the files /usr/sap/<SID>/SYS/exe/run/icnbmd and /usr/sap/<SID>/SYS/exe/run/saposcol

The following snap will show the successful completion of the PREAPRE modules.

```
Statuses of the PREPARE modules:

Parameter input                    : succeeded
Initialization                     : succeeded
Import                             : succeeded
Extension                          : succeeded
Integration                        : succeeded
Installation                       : succeeded
General checks                     : succeeded
Activation checks                  : succeeded
Necessary checks for conversions : succeeded
Optional checks for conversions   : succeeded
Modification support               : succeeded
Pre-processing                     : succeeded

  ⦿ Continue
  ◯ Cancel                              ▸
```

Once the prepare phase is over ,you should check all the logs for the upgrade process and check whether you need to carry any more steps after prepare .

6.4 SAPUP RUN

You can now once again launch the upgrade assistant gui and start with the SAPUP phase or the actual Upgrade of the ABAP engine . The following screen shots will mainly talk about the major steps in the upgrade process .

The upgrade process mainly once again ask you about the parameters it asked in the PREPARE phase .Here you have a chance to change some settings if you need to change them else you have the option to keep the answers same as you carried out in PREPPARE . Ideally you should not change any parameter from the PREPARE phase unless and until there is some specific requirement .
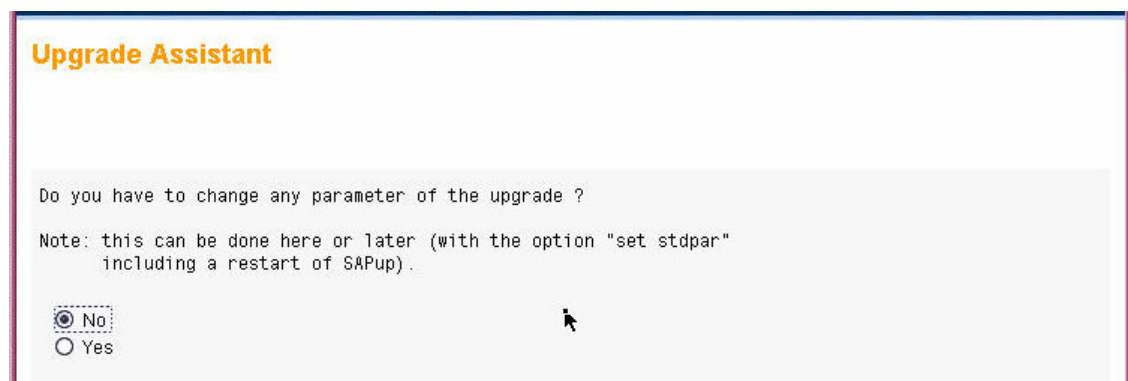
```
Enter the IS keyword of note 86985 (IS "BI_CONT", version "702")

IS keyword =  4075693
```

The decision of the Upgrade Strategy mainly depends on many factors and should be decided in accordance with the allowed downtime , availiabilty of the hardware resources .We have chosen Resource Minismised in our case.

```
Select an upgrade strategy (read the upgrade manual !!!):

 - Downtime-minimized  : Parallel to the production instance,
                         an instance on the target system will
                         be established to minimize downtime

 - Resource-minimized  : There is only one system alive, either
                         the instance on the start or on the target
                         release to minimize the resources needed



Select the upgrade strategy (current selection is Downtime-minimized):

 ○ Downtime-minimized
 ◉ Resource-minimized
```

Upgrade Assistant

Current phase : CONFCHK_X

```
- BATCH PROCESSES = 3
working ...
>> 19:58:40  UPGRADE: END OF PHASE  INITSUBST
>> 19:58:40  UPGRADE: START OF PHASE FRONTREQ


Note: The front end software could be updated at any time
      before or during the upgrade. It must be updated
      before the start of the shadow instance
      in phase START_SHDI_FIRST.
      Refer to the upgrade manual if you do not
      know how to perform the update procedure.
```

Upgrade Assistant

Current phase : EU_IMPORT1

must be shutdown now.

? continue
? exit

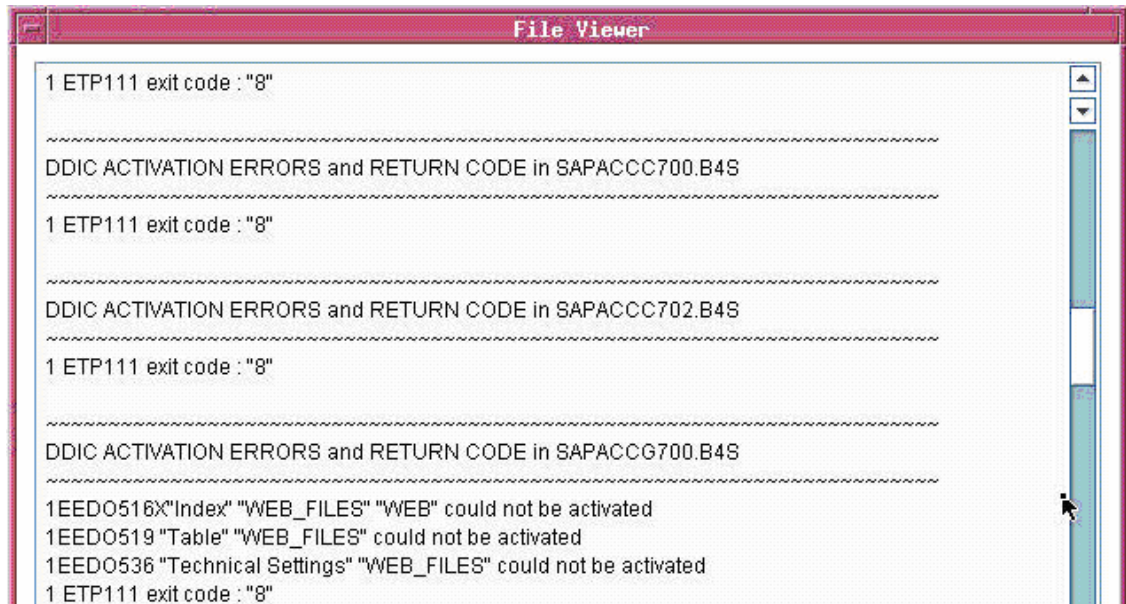Waiting for input since Mar 9, 2006 8:55:56 AM

> continue

The central Application Server of system B4S will
be shutdown now!

Upgrade Assistant

```
ERROR: 36 errors detected during ACT_700.
       Analyze summary error logfile ACTUPG.ELG
       and remove all error conditions in the way
       it is described in the upgrade manual. Repeat
       this phase until it is error free.
       Additional hints may be given in logfiles
       SLOG700 and /usr/sap/put/log/SAPup.ECO
```

⦿ Continue
◯ Cancel

```
                        File Viewer

1 ETP111 exit code : "8"

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
DDIC ACTIVATION ERRORS and RETURN CODE in SAPACCC700.B4S
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
1 ETP111 exit code : "8"


~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
DDIC ACTIVATION ERRORS and RETURN CODE in SAPACCC702.B4S
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
1 ETP111 exit code : "8"


~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
DDIC ACTIVATION ERRORS and RETURN CODE in SAPACCG700.B4S
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
1EEDO516X"Index" "WEB_FILES" "WEB" could not be activated
1EEDO519 "Table" "WEB_FILES" could not be activated
1EEDO536 "Technical Settings" "WEB_FILES" could not be activated
1 ETP111 exit code : "8"
```

Note:

In **ACT_REL** phase of **SAPUP** it fails with message index /table WEB_FILES couldn't be activated

Solution:

Please refer SAP Note: 847019

The following screen shot will sum up the finishing of the Upgrade process successfully.

Upgrade Assistant

```
              * * * * * * * * * * * *
      * * * * * *              * * * * * *
   * * *                               * * *
 *        YOUR UPGRADE IS COMPLETE       *
   * * *                               * * *
      * * * * * *              * * * * * *
              * * * * * * * * * * * *
```

◉ Continue
○ Cancel
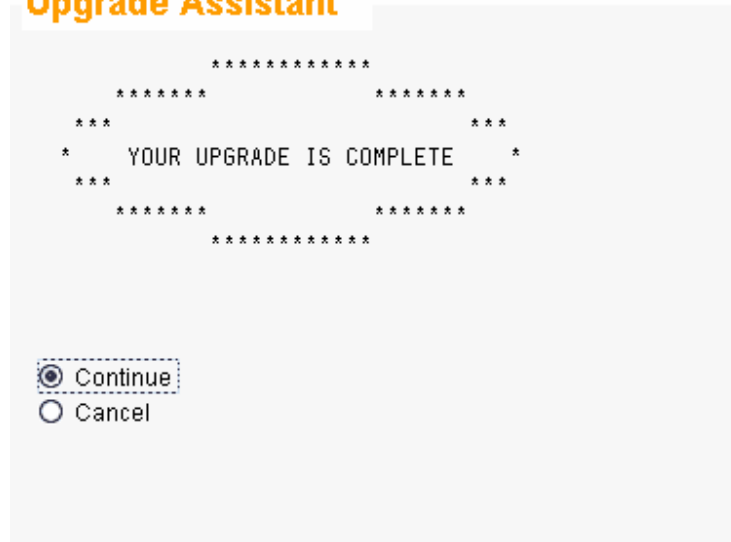
Note:

After the completion of NW2004s ABAP upgrade. We found that saposcol was missing from /usr/sap/<SID>/SYS/exe/run

Solution:

Copy the saposcol from the directory /usr/sap/put/exe

6.5 Post Upgrade activities:

1. Carry out the complete system backup at OS level as well as RDBMS level

2. Execute the script saproot.sh as the root user in /usr/sap/put/exe
./saproot.sh <SAPSID>

3. Check for the database log mode. If the log mode is *off* state, change the log mode to *auto.*

4.Adjust Repository objects, if any as per the Upgrade guide

5.Generate ABAP loads with SGEN transaction and update optimizer statistics with DB13.

6.Check BI functional scenario as per the source system configuration and if required adjust the customizing settings in close cooperation with business consultants and upgrade project team members
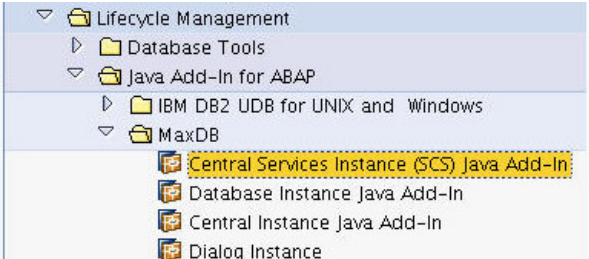
Chapter 7

Installation of JAVA Add-in and Enterprise Portal

7.1 Steps for JAVA Add-in and EP Installation

The following snap mainly talks about the JAVA Add-in installation after Upgrading ABAP SAP NetWeaver 2004s System .The process mainly consist of the Central services instance, database Java add in, and lastly Central Instance Installation .

CENTRAL SERVICE INSTANCE

Task Progress

The Task has been completed successfully

All phases completed

Phase List

- ✔ Create users for SAP system
- ✔ Install common system files
- ✔ Unpack SAP archives
- ✔ Install SCS instance
- ✔ Install instance basics
- ✔ Start central services instance

Execution of Service SAP NetWeaver 2004s Support Release 1 > Additional Software Life-Cycle Tasks > Java Add-In for ABAP > MaxDB > Central System > Central Services Instance (SCS) Java Add-In has been completed successfully

DATABASE INSTANCE

▽ 📁 Additional Software Life-Cycle Tasks
  ▷ 📁 Additional Preparation Tasks
  ▷ 📁 Application Server
  ▷ 📁 Database Tools
  ▽ 📁 Java Add-In for ABAP
    ▷ 📁 IBM DB2 UDB for UNIX and Windows
    ▽ 📁 MaxDB
      ▽ 📁 Central System
        📄 Central Services Instance (SCS) Java Ac
        📄 Database Instance Java Add-In
        📄 Central Instance Java Add-In

(SCS) Java Add-In Installation.
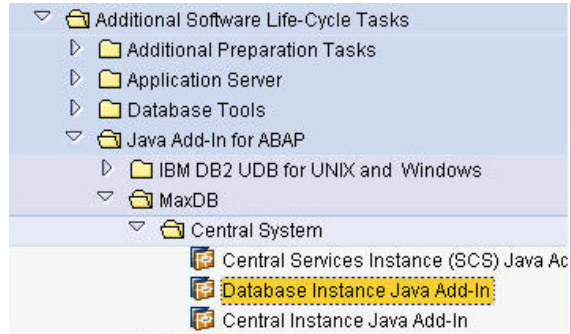
Database Instance
The database instance is a mandatory instance for the installation of an SAP system. The SAP system with usage types based on *AS Java* uses its own database schema in the database.

41

Parameter Summary

Use the checkboxes to select parameter sections you would like to revise values or start the execution with given values

Parameter List

☐ **Media Browser > Software Package Request**

Media Name	Package Location	Copy Package To
Java_Component_NW2004sSR1	/space/maxdb/inst/nw04sr1/JAVA	

☐ **SAP System > Java Development Kit**

JDK Directory

`/opt/j2sdk1.4.2_09`

☐ **SAP System > General Parameters**

Profile Directory

`/sapmnt/B4S/profile`

☐ **SAP System > Master Password**

Password for all users of this SAP system

`* * * * *`

☐ **SAP System > Database Parameters**

Database ID (DBSID)
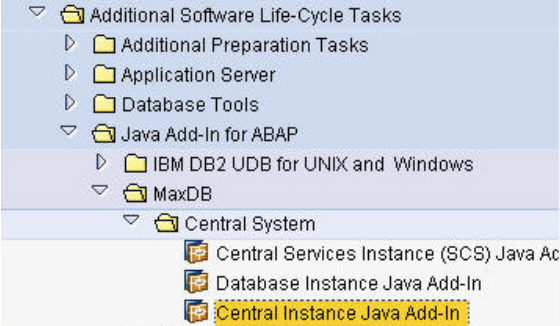
`B4S`

Task Progress

The Task has been completed successfully

All phases completed

Phase List

✔ Create users for SAP system	Execution of Service SAP NetWeaver 2004s Support Release 1 >
✔ Adapt profiles	Additional Software Life-Cycle Tasks > Java Add-In for ABAP > MaxDB >
✔ Create and load database	Central System > Database Instance Java Add-In has been completed
✔ Create Java Schema	successfully
✔ Prepare to create database user	
✔ Prepare to act on database schema	
✔ Create database schema	
✔ Post load activities	
✔ Create secure store	
✔ Import Java dump	
✔ Post load activities	
✔ Perform MaxDB post-load activities	
✔ Import MaxDB statistics	

CENTRAL INSTANCE

You must have already performed the *Database Instance Java Add-In* installation.
This step is not repeatable.

Central Instance
The central instance is the core component of an SAP system. Exactly one central instance must exist in each SAP system. The central instance usually provides all SAP system utilities. The Software Deployment Manager (SDM) is part of the central instance.

The snap talks about the Central instance installation step in which we need to fix the Usage types at the time of installation which can not be changed afterwards as per the new SAP NetWeaver2004s release guides. We have selected BI-Java and EP as our Usage types.

SAP System > Software Units

Before you choose your software units / processes, make sure that you have identified the required scenario as described in the Master Guide

NetWeaver Usage Types
Software units are installation units. Usage types of SAP NetWeaver are software units to be installed and configured. Software units or usage types can be run together with others in one system, they can run separately on different systems. The usage types *Application Server ABAP (AS ABAP)* and *Application Server (AS Java)* are also used as a foundation for other units.
Usage type *AS ABAP* was already installed on your system.
Usage type *AS Java* will be automatically installed for this scenario.

Install	Software Unit	Description	Depends On
☑	BI Java	NetWeaver BI Java	AS Java, EP
☐	DI	NetWeaver Development Infrastructure	AS Java
☑	EP	NetWeaver Enterprise Portal	AS Java
☐	MI	NetWeaver Mobile Infrastructure	AS ABAP, AS Java
☐	PI	NetWeaver Process Integration	AS ABAP, AS Java

SAP System > System Landscape Directory

Enter your SLD destination

Important Information
The SAP System Landscape Directory (SLD) is designed for registering the systems (along with the installed software) of your whole system landscape.
We strongly recommend to choose *Register in existing central SLD* if you want the SLD to be configured. The usual case is to configure one SLD for your complete system landscape. Please notify that *Configure a local SLD* may take up to several hours.

Registration in System Landscape Directory
SLD Destination   ◉ Configure a local SLD
                  ○ Register in existing central SLD (default)

SAP System > Local SLD

Enter the parameters for a local SLD configuration

Object Server
To guarantees global separation of all objects in the directory use ABAP namespace reserved in the SAP Service Marketplace (without the enclosing slashes) for the *Object Server Name*.
SAPinst will initialize the object server.

Object Server Name	B4S

Self-Registration in Local SLD
The *SLD Data Supplier User* is used to perform send the self-registration data of your system to the SLD.

SLD Data Supplier User	SLDDSUSER
Password of SLD Data Supplier User	*******
Confirm	*******

Communication to Local SLD
The *SLD ABAP API User* of your system communicates landscape data from and to the SLD.

SLD ABAP API User	SLDAPIUSER
Password of SLD ABAP API User	*******
Confirm	*******

The Task has been completed successfully

All phases completed

Phase List

- ✔ Adapt profiles
- ✔ Install central instance
- ✔ Create Java users
- ✔ Install Java engine
- ✔ Configure UME
- ✔ Start Java engine
- ✔ Prepare to install software units
- ✔ Prepare to configure AS Java
- ✔ Install software units
- ✔ Configure software units
- ✔ Configure AS Java
- ✔ Configure System Landscape Directory
- ✔ Configure CAF
- ✔ Configure Adobe Document Services
- ✔ Configure Enterprise Portal
- ✔ Configure Business Infrastracture
- ✔ Prepare to install minimal configuration

Execution of Service SAP NetWeaver 2004s Support Release 1 > Additional Software Life-Cycle Tasks > Java Add-In for ABAP > MaxDB > Central System > Central Instance Java Add-In has been completed successfully

The above screen shows the final step in the activities for the ABAP SAP NetWeaver 04 to ABAP+JAVA SAP NetWeaver 2004s Upgrade .The following screens will show the post upgrade activates in brief .

Logging in to the J2EE engine and then configuration of the JAVA environment with the CTC template .
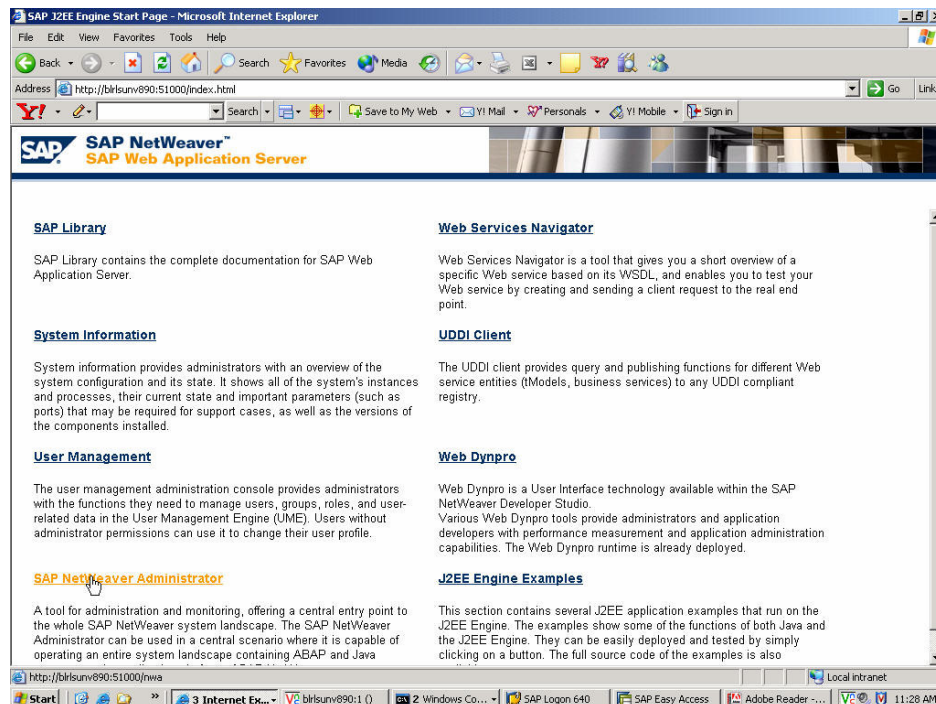

7.2 Integration of BI with Enterprise Portal –Benefits

The integration of BI content into the portal enables you to work more closely and more promptly with company colleagues when you need to do so. For example, this can help when you need to insert notes and comments for key figures and reports, run approval processes automatically, and in doing so, take part in decisions within a broad company context.

Furthermore, you can also use the iView concept to integrate BI applications and integrate individual Web applications from BI as iViews in the Portal. You can then display and use them from a page in the portal, together with other iViews from the BI system or from other systems.

The following figure shows the integration into the portal and provides an overview of the function landscape and tool landscape of the Business Explorer Suite.
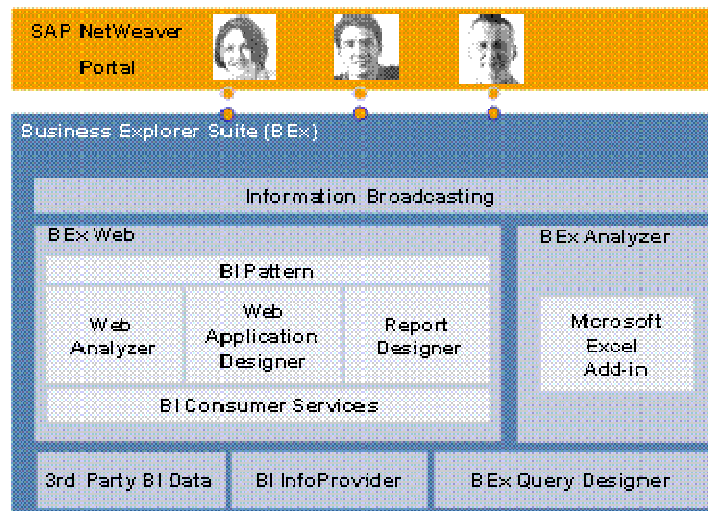
7.3 Additional Features

The *Business Explorer* portal role illustrates the various options that are available to you when working with content from BI in the portal.

Some of the tools which can be used for detailed analysis of BI information on Web are described below:

BEx Web Application Designer

You can use the BEx Web Application Designer, the desktop application used to create Web applications, to generate HTML pages that contain BI-specific content such as tables, charts, or maps. Web Applications are based on Web templates that you create and edit in the Web Application Designer. You can save the Web templates and access them from the Web browser or the portal

BEx Web Analyzer

The BEx Web Analyzer provides you with a standalone, convenient Web application for data analysis that you can call using an URL or as an iView in the portal. In the Web Analyzer, you can open a data provider (query, query view, InfoProvider, or external data source) and use ad hoc analysis to create views of BI data, called query views, that you can then use as data providers for other BI applications. You also distribute and save the results of your ad hoc analysis as needed.

BEx Information Broadcasting

BEx Information Broadcasting allows you to make objects with Business Intelligence content available to a wide spectrum of users, according to your requirements.

With the BEx Broadcaster, you can precalculate Web templates, queries, query views, reports, and workbooks and publish them in the portal, distribute them by

e-mail, or print them. In addition to the precalculated documents that contain historical data, you can also generate online links to queries and Web applications

7.4 BI Scenario Overview

A BW scenario was created in freshly installed SAP NetWeaver 04 instance. The objective of scenario creation was to verify if the basic BW functionalities are working properly and the existing data is intact at every stage of upgrade.

The scenario consisted of both special info objects and info objects from the business content which were transferred to the Active version.

Data targets involved in the scenario were 2 Info cubes, 2 ODS Objects and 1 Multi provider which was built upon the two Info cubes.

At each stage of upgrade loading of data from bottom to top i.e. from PSA to ODS to Info cube was verified. Also reporting related functionalities were tested from top to bottom i.e. reports was build upon the Multi Cube, Info Cube and ODS objects. New Master data and Transaction data records were added after the NetWeaver upgrade and the existing reports displayed new data along with the old data which was loaded before the upgrade, thus confirming that the data was intact after the upgrade phase.

After the Add in installation of AS-Java and EP, BI functionalities which make use of other NW components like EP were also tested. This included Information broadcasting, publishing BI reports in Enterprise Portal, Web Analyzer etc.

Note:

BI functionality related issues

Problem 1
You call a Business Explorer (BEx) Web Application (Java) and the system
Displays the following error message instead of the BEx Web Application:

Portal runtime error
Access denied

This problem may arise because of missing authorizations for the
Security zone in which the BEx Web Application is executed in the
Portal,

Solution

Please apply the SAP Note 872043

Problem 2
When you execute a Web Application (NetWeaver2004s), the following
Error message appears: Parameter HIERARCHY_DATE does not exist.

Solution
Import Support Package 07 for SAP NetWeaver 2004s BI (BI Patch 07 or
SAPKW70007) into your BI system. Otherwise, you can enter the table entries
manually as mentioned in note 923122

Chapter 8

Upgrade Tips & Key Learning's

Problem 1:

In **DBCHK_PRE** phase in **PREPARE RUN** fails with the message

Error: Shared library path is insufficient

Solution

Before executing Upgrade Assistant server and GUI please append this environment variable in both shells with following value and also refer SAP Note: 817463

LD_LIBRARY_PATH-->Append with /sapdb/programs/lib/lib64

Problem 2:

In **Upload_Request** Phase in **PREPARE RUN** fails with the message

Error: Full access to directory /usr/sap/trans denied

Solution:

Provide chmod 777 permission to the directory /usr/sap/trans

Problem 3:

In **SHDINST_SDB_CHK** phase in **PREPARE RUN** fails with message

Error: Error by create user SAP<SID>SHD

Solution:

We need to create this user manually in Database. Please also refer to SAP Note 39439

Problem 4:

In **'Installation Module'** of **PREPARE RUN** it fails to add the shadow instance port entries in /etc/services

Solution:

Manually enter the shadow instance sapmsSHD<SID>, Sapgw<SYSNR>, sapdp<SYSNR> and repeat the phase.

Problem 5:

In **'General Checks Module'** of **PREPARE RUN** it fails for Permission issue for files

Solution:

Add the write permission for the files /usr/sap/<SID>/SYS/exe/run/icnbmd and /usr/sap/<SID>/SYS/exe/run/saposcol

Problem 6:

In **ACT_REL** phase of **SAPUP** it fails with message index /table WEB_FILES couldn't be activated

Solution:

Please refer SAP Note: 847019

Problem 7:

After the completion of NW2004s ABAP upgrade. We found that saposcol was missing from /usr/sap/<SID>/SYS/exe/run

Solution:

Copy the saposcol from the directory /usr/sap/put/exe

Errors encountered while executing BEX Applications in Portal

Problem 8

You call a Business Explorer (BEx) Web Application (Java) and the system
Displays the following error message instead of the BEx Web Application:

Portal runtime error
Access denied

This problem may arise because of missing authorizations for the
Security zone in which the BEx Web Application is executed in the
Portal,

Solution

Please apply the SAP Note 872043

Problem 9
When you execute a Web Application (NetWeaver2004s), the following
Error message appears: Parameter HIERARCHY_DATE does not exist.

Solution
Import Support Package 07 for SAP NetWeaver 2004s BI (BI Patch 07 or
SAPKW70007) into your BI system. Otherwise, you can enter the table entries
manually as mentioned in note 923122

Chapter 9

TCO Inputs

S.No	Tasks	No. of hours
1	Installation of NW 2004 SP9 (SR1)	46
	(a) Installation of ABAP SR1 -SP9(new SAP instance)	15
	(b) Client copy and SGEN	8
	(c) System Backup	2
	(d) Configuring and testing the BI functionalities	16
	(e) Tape backup and MAXDb Upgrade from 7.5 to 7.6	4
	(f) Tape Backup After the MaxDB Upgrade	2
2	SAP Upgrade of ABAP to NetWeaver2004s	23
3	Testing the BI functionalities after upgrade	8
4	System Backup	2
5	Add-In installation of NetWeaver2004s Usage Types AS-Java, BI-Java and EP	9
6	Use BI Template Installer + System backup	2
7	Testing the BI functionalities after ABAP + Java upgrade	8
	Total Number of Hours:	98

% break up of Total Time

- 33% BI Functionality Testing
- 58% Install & Upgrade
- 9% System Backup
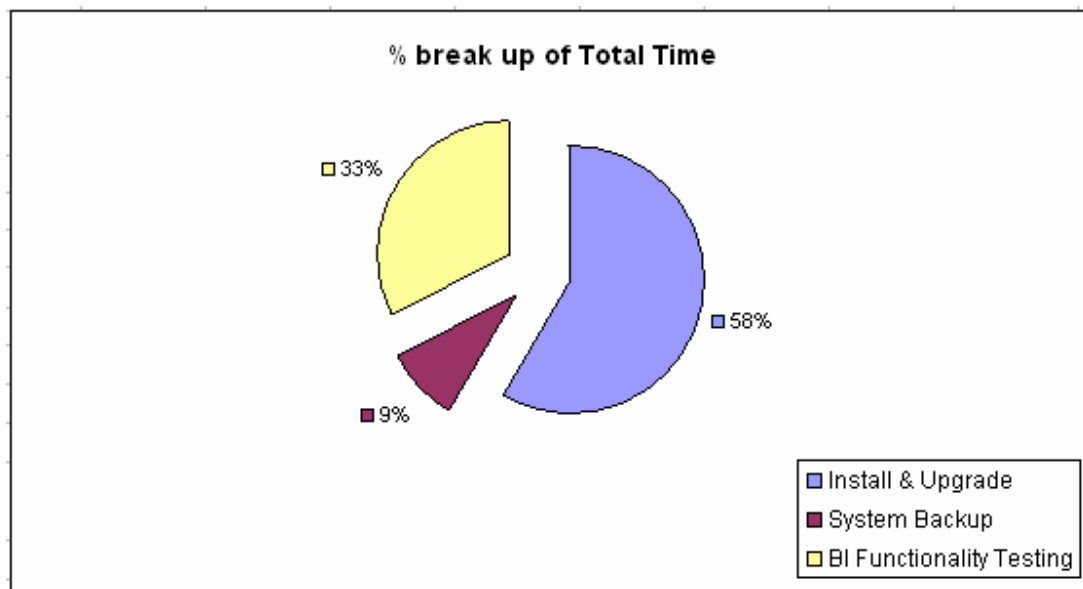
Chapter 10

Conclusion

Customers wanting to go for upgrade path of only NW 2004 ABAP Stack to NW 2004s ABAP Stack can do so as detailed in this project with all BI functionalities working as before. Technical Upgrade of NW 2004 ABAP Stack with SAP BW 3.X to NW2004s ABAP Stack with BI was completed in about 23 hours.

In the event of further upgrade of above installation to AS-Java, BI-Java, EP etc as add in usage types, the upgrade can be completed in about 9 hours as experienced in this project.

References

1. SAP Net Weaver 2004s upgrade guides: http://service.sap.com/instguides

2. Product Availability Matrix: http://service.sap.com/pam

3. SAP Note 818322: Additional information on upgrading to SAP NW 2004s ABAP

4. SAP Note 817463: MaxDB specific upgrade information

5. SAP Note 18066: Increased free space requirements during upgrade

6. SAP Note 417670: Additional information about resetting the upgrade

7. SAP Note 623723: Upgrade - Application specific problems

8. SAP Note 793550: Supplementary info about the MaxDB version upgrade to 7.6.00

9. Sun Fire V890 Server: http://www.sun.com/servers/midrange/v890/index.jsp

10. Solaris 10 features: http://www.sun.com/software/solaris/features.jsp

11. MaxDB 7.6 Database: http://dev.mysql.com/doc/maxdb/

12. SAP Help Portal: http://help.sap.com/NW2004s