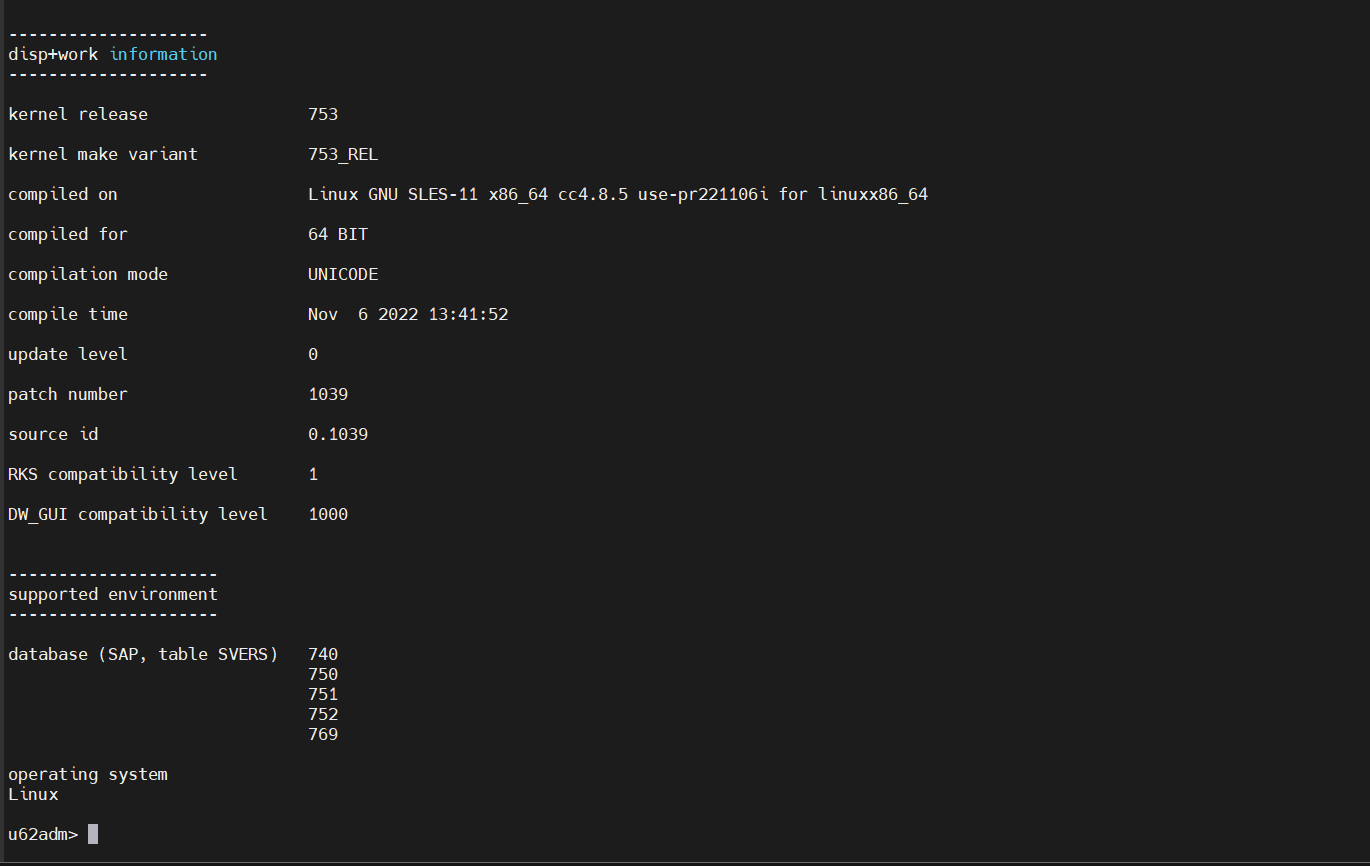
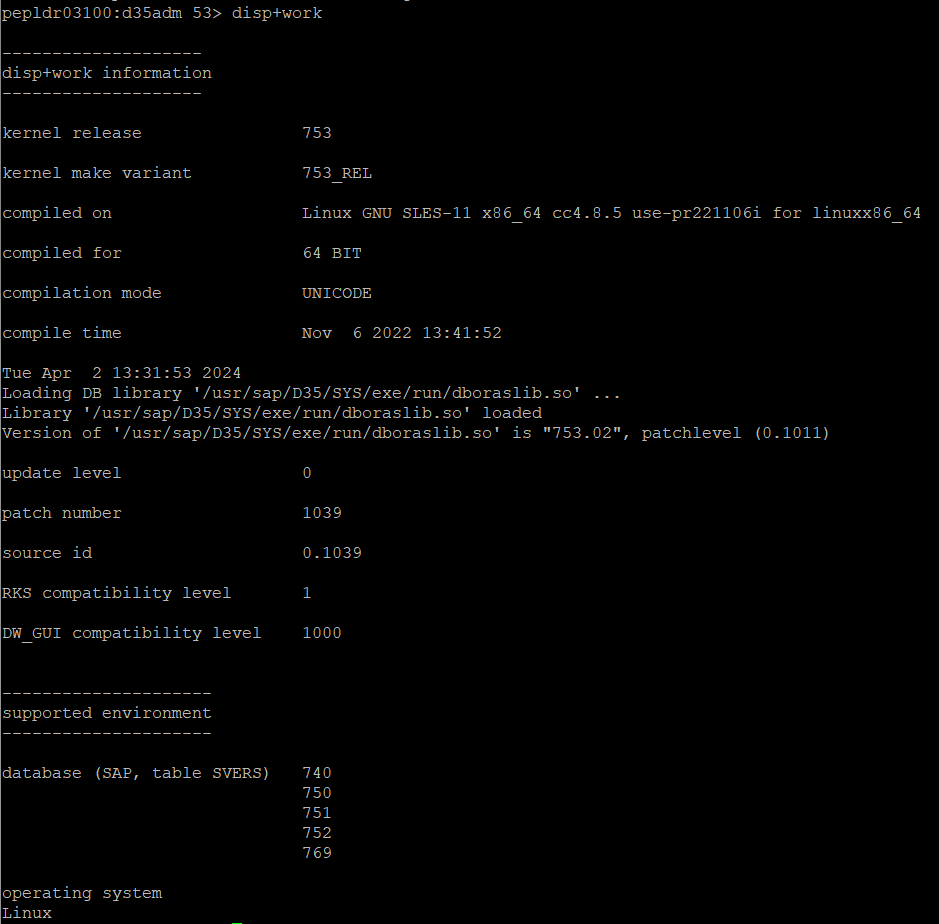
**Kernel upgrade in U62**

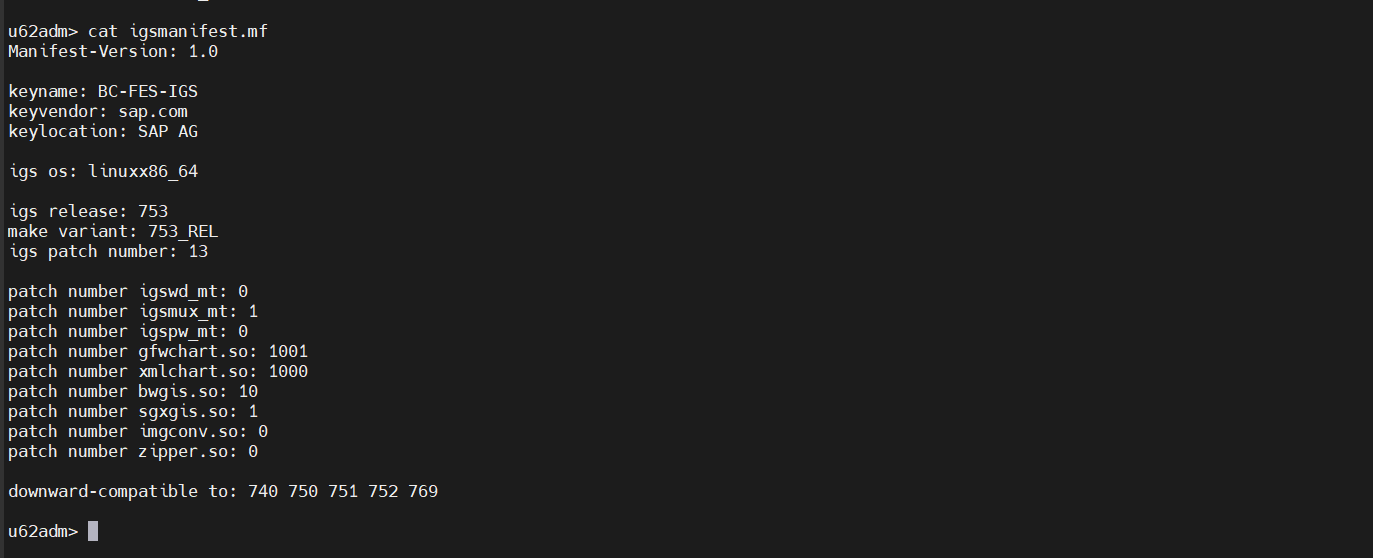
# Planning and Review

## Current Versions

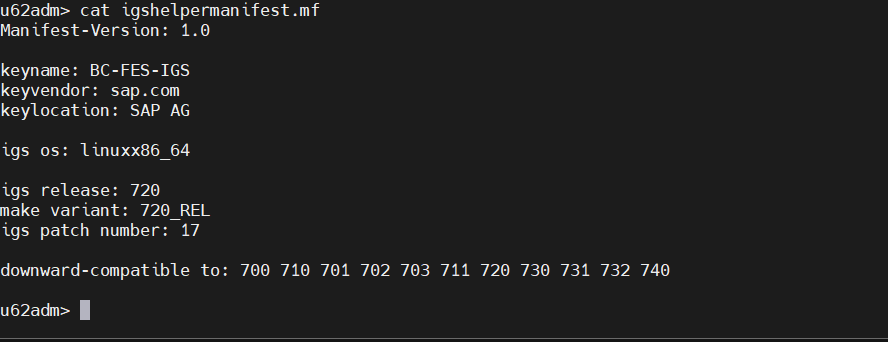
Current Kernel Version (./disp+work)



Current IGS Version



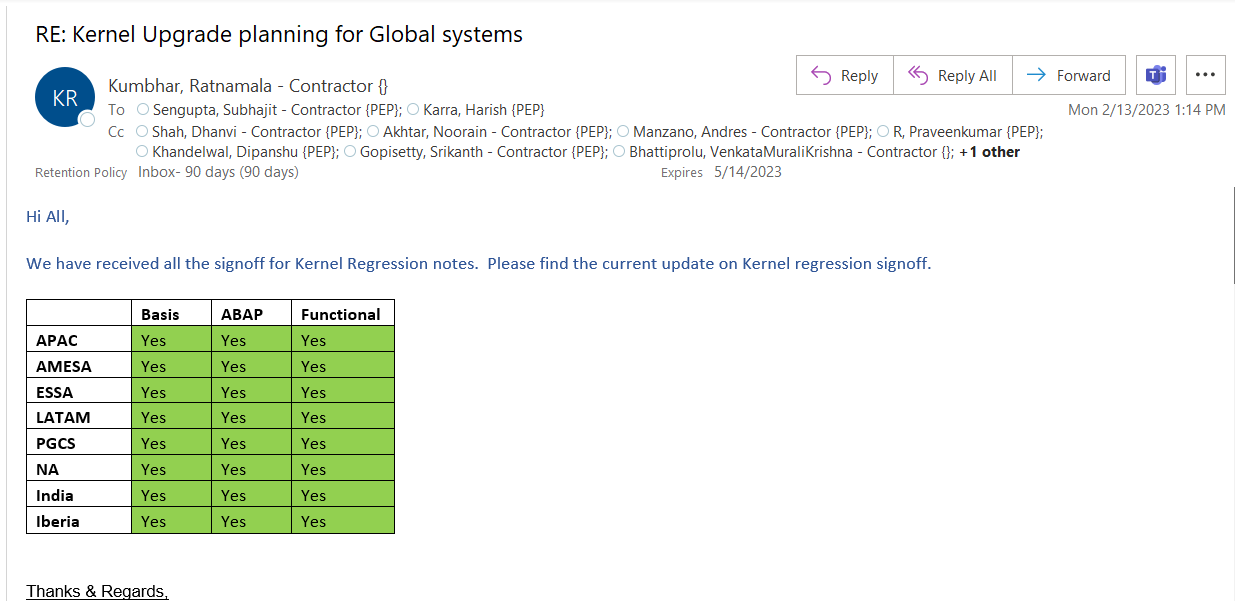
Current IGS Helper Version



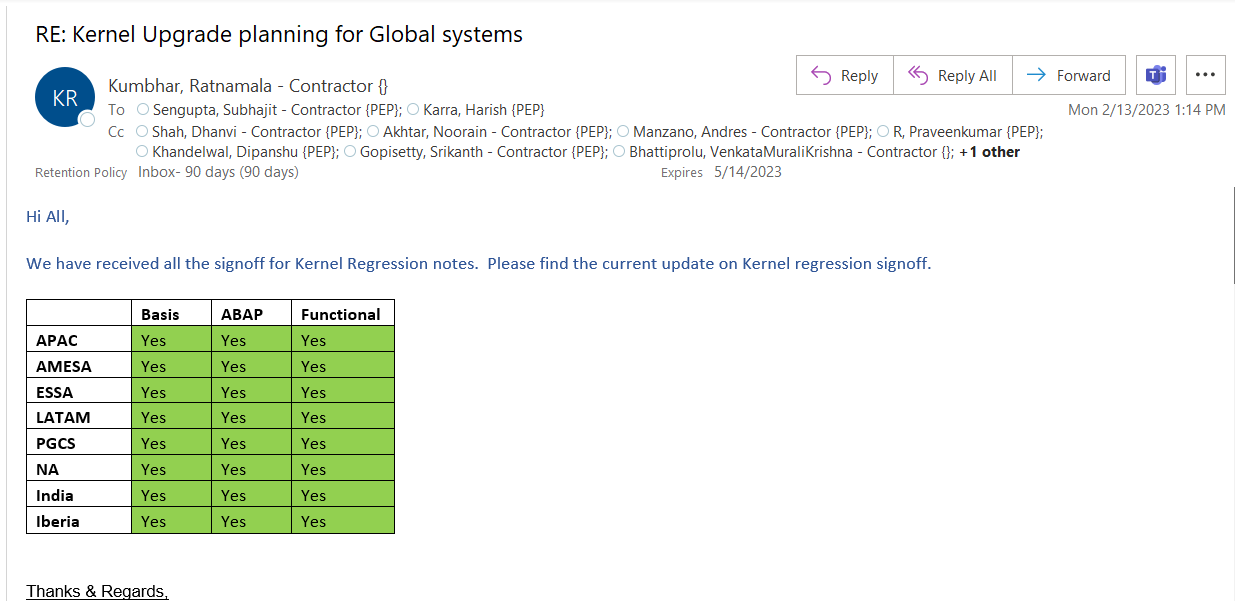
Current BRTOOLS version (if oracle)

## Target version Excel

## Regression Notes



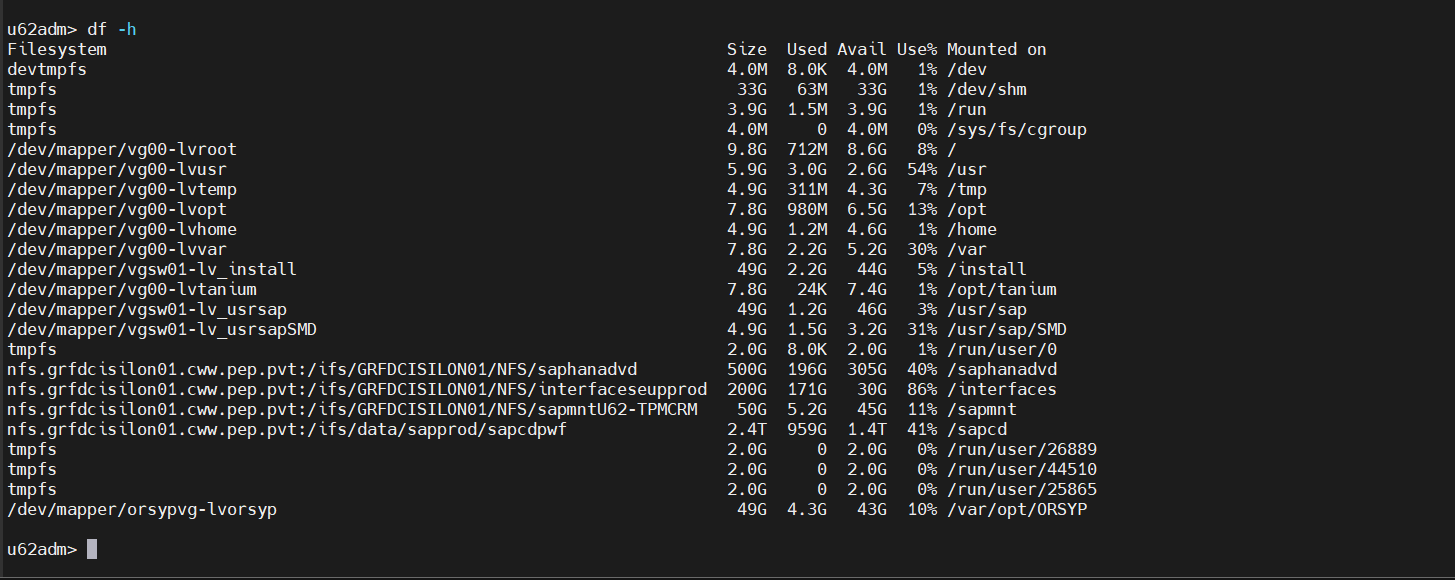
## Regression Notes Signoff



# Pre-checks

## Verify if all the servers have shared global mount /sapmnt/SID. If it is not shared mount, need to fix it before kernel upgrade

(#df -h)



## Creating Backup

(#cp -rp …)

## RSPFPAR & RSPARAM

(T-Code sa38 – ABAP; #SAPPFPAR check pf=.. - JAVA)

|  |
| --- |
| u16adm> SAPPFPAR check pf=U16\_ASCS17\_sapu16  ksh: SAPPFPAR: not found  u16adm> sappfpar check pf=U16\_ASCS17\_sapu16  ================================================  == Checking profile: /sapmnt/U16/profile/U16\_ASCS17\_sapu16  == SAP Release 753  == SAP Patch 1039  == System ID 390 (AMD/Intel x86\_64 with Linux)  == ES Implementation std  ================================================  Metadata Parameters Analysis  ================================================  \*\*\*WARNING: Parameter em/initial\_size\_MB = 180927  Invalid size value  \*\*\*WARNING: Parameter em/max\_size\_MB = 180927  Invalid size value  Parameters Redefinitions  ================================================  Unknown and Obsolete Parameters  ================================================  \*\*\*WARNING: Unexpected parameter: ctc/allow\_systemcopy\_postconfig = 1  \*\*\*WARNING: Unexpected parameter: ctc/export\_data = /usr/sap/VCM\_pca/vcm\_exp\_U16\_2021\_03\_11\_17\_30  \*\*\*WARNING: obsolete parameter: "ms/standalone = 1"  component: BC-CST-MS  Formula Based Parameters  ================================================  \*\*\*WARNING: Formula parameter: abap/shared\_objects\_size\_MB = 3619 found in DEFAULT.PFL  \*\*\*WARNING: Formula parameter: abap/shared\_objects\_size\_MB = 3619 found in /sapmnt/U16/profile/U16\_ASCS17\_sapu16  \*\*\*WARNING: Formula parameter: em/initial\_size\_MB = 180927 found in DEFAULT.PFL  \*\*\*WARNING: Formula parameter: em/initial\_size\_MB = 180927 found in /sapmnt/U16/profile/U16\_ASCS17\_sapu16  Parameter changes if default formulas would be used:  ================================================  EM/TOTAL\_SIZE\_MB: 180927 --> 45555  ES/SHM\_MAX\_SHARED\_SEGS: 3 --> 2  abap/shared\_objects\_size\_MB: 3619 --> 911  em/address\_space\_MB: 23411 --> 13935  em/global\_area\_MB: 9046 --> 2278  em/initial\_size\_MB: 180927 --> 45555  em/max\_size\_MB: 180927 --> 45555  em/reserved\_area\_MB: 3619 --> 911  Additional Memory and OS Specific Checks  ================================================  Shared Memory Disposition Overview  ================================================  Shared memory pools  Key: 10 Pool  Size configured.....: 200000000 ( 190.7 MB)  Size min. estimated.: 121522000 ( 115.9 MB)  Advised Size........: 124000000 ( 118.3 MB)  Key: 40 Pool for database buffers  Size configured.....: 1835008000 (1750.0 MB)  Size min. estimated.: 1962054940 (1871.2 MB)  Advised Size........: 1966000000 (1874.9 MB)  Shared memories inside of pool 10  Key: 11 Size: 600000 ( 0.6 MB) Factory calender buffer  Key: 12 Size: 6000000 ( 5.7 MB) TemSe Char-Code convert Buf.  Key: 13 Size: 60500000 ( 57.7 MB) Alert Area  Key: 14 Size: 4400000 ( 4.2 MB) Presentation buffer  Key: 16 Size: 21360 ( 0.0 MB) Semaphore activity monitoring  Shared memories inside of pool 40  Key: 42 Size: 533499144 ( 508.8 MB) DB TTAB buffer  Key: 43 Size: 1019532384 ( 972.3 MB) DB FTAB buffer  Key: 44 Size: 220430752 ( 210.2 MB) DB IREC buffer  Key: 45 Size: 130431392 ( 124.4 MB) DB short nametab buffer  Key: 46 Size: 160 ( 0.0 MB) DB sync table  Key: 47 Size: 3175424 ( 3.0 MB) DB CUA buffer  Key: 48 Size: 2760160 ( 2.6 MB) Number range buffer  Key: 49 Size: 2224500 ( 2.1 MB) Spool admin (SpoolWP+DiaWP)  Shared memories outside of pools  Key: 1 Size: 512 ( 0.0 MB) System administration  Key: 2 Size: 62424592 ( 59.5 MB) Disp. administration tables  Key: 3 Size: 208896000 ( 199.2 MB) Disp. communication areas  Key: 4 Size: 1047616 ( 1.0 MB) statistic area  Key: 6 Size: 8902260736 (8489.9 MB) ABAP program buffer  Key: 7 Size: 33376 ( 0.0 MB) Update task administration  Key: 8 Size: 1072169460 (1022.5 MB) Paging buffer  Key: 18 Size: 6788760 ( 6.5 MB) Paging administration  Key: 20 Size: 198086042 ( 188.9 MB) New Table buffer tbi  Key: 21 Size: 11400672 ( 10.9 MB) Request Queue Admin  Key: 30 Size: 15556 ( 0.0 MB) Taskhandler runtime admin.  Key: 34 Size: 65536000 ( 62.5 MB) Enqueue table  Key: 41 Size: 25010000 ( 23.9 MB) DB statistics buffer  Key: 51 Size: 35000000 ( 33.4 MB) Extended memory admin.  Key: 52 Size: 180000 ( 0.2 MB) Message Server buffer  Key: 54 Size: 682400768 ( 650.8 MB) Export/Import buffer  Key: 56 Size: 535528 ( 0.5 MB) Application statistics  Key: 57 Size: 1992294 ( 1.9 MB) Profilparameter in shared mem  Key: 58 Size: 2076 ( 0.0 MB) Enqueue ID for reset  Key: 62 Size: 180355072 ( 172.0 MB) Memory pipes  Key: 63 Size: 409600 ( 0.4 MB) ICMAN shared memory  Key: 64 Size: 4227072 ( 4.0 MB) Online Text Repository Buf.  Key: 65 Size: 4227072 ( 4.0 MB) Export/Import Shared Memory  Key: 73 Size: 60211232 ( 57.4 MB) CCMS Extended Alert Area  Key: 76 Size: 1185920 ( 1.1 MB) Ext. Segment Administration  Key: 77 Size: 12808 ( 0.0 MB) Ext. Memory Administration  Key: 78 Size: 4248 ( 0.0 MB) Ext. Global Memory Admin  Key: 81 Size: 35168 ( 0.0 MB) Security Audit Log  Key: 83 Size: 161053696 ( 153.6 MB) ABAP Coverage Analyzer  Key: 85 Size: 53240 ( 0.0 MB) ACM Trace and others  Shared memory resource requirements estimated  Total Nr of shared segments required.....: 34  Nr of shared segments successful tested..: 100  Shared memory segment size required min..: 8902260736 (8489.9 MB)  Currently available maximum segment size.: 34359738368 (32768.0 MB)  R/3-imposed maximum segment size.........: 21474836480 (20480.0 MB)  Memory Space Requirements Estimated \*  ================================================  Shared memory....................: 13137 MB  ..in pool 10: 115.9 MB ( 98% used) \*\*  ..in pool 40: 1871.2 MB ( 99% used) \*\*  ..not in pool: 11144.6 MB  Extended Memory .................: 180928 MB  SAP Heap Memory .................: 6507 MB  Gateway process .................: 95 MB  ICM process .....................: 195 MB  All Processes ...................: 1030 MB ( 7 WPs)  ------------------------------------------------  Total, minimum requirement........: 195095 MB  Process local heaps, worst case...: 7537 MB  Total, worst case requirement.....: 201602 MB  \* These are only estimated values,  final sizes may change  \*\* Shared Pools are automatically  calculated by Kernel  ================================================  Errors detected..................: 0  Warnings detected................: 9  ================================================ |

|  |
| --- |
| u16adm> sappfpar check pf=U16\_D01\_sapu16ap01  ================================================  == Checking profile: /sapmnt/U16/profile/U16\_D01\_sapu16ap01  == SAP Release 753  == SAP Patch 1039  == System ID 390 (AMD/Intel x86\_64 with Linux)  == ES Implementation std  ================================================  Metadata Parameters Analysis  ================================================  \*\*\*WARNING: Parameter em/initial\_size\_MB = 180927  Invalid size value  \*\*\*WARNING: Parameter em/max\_size\_MB = 180927  Invalid size value  Parameters Redefinitions  ================================================  Unknown and Obsolete Parameters  ================================================  \*\*\*WARNING: Unexpected parameter: ctc/allow\_systemcopy\_postconfig = 1  \*\*\*WARNING: Unexpected parameter: ctc/export\_data = /usr/sap/VCM\_pca/vcm\_exp\_U16\_2021\_03\_11\_17\_30  Formula Based Parameters  ================================================  \*\*\*WARNING: Formula parameter: abap/buffersize = 8325975 found in /sapmnt/U16/profile/U16\_D01\_sapu16ap01  \*\*\*WARNING: Formula parameter: abap/heap\_area\_total = 32000000000 found in /sapmnt/U16/profile/U16\_D01\_sapu16ap01  \*\*\*WARNING: Formula parameter: abap/shared\_objects\_size\_MB = 3619 found in DEFAULT.PFL  \*\*\*WARNING: Formula parameter: abap/shared\_objects\_size\_MB = 3619 found in /sapmnt/U16/profile/U16\_D01\_sapu16ap01  \*\*\*WARNING: Formula parameter: em/initial\_size\_MB = 180927 found in DEFAULT.PFL  \*\*\*WARNING: Formula parameter: em/initial\_size\_MB = 180927 found in /sapmnt/U16/profile/U16\_D01\_sapu16ap01  \*\*\*WARNING: Formula parameter: gw/max\_conn = 4000 found in /sapmnt/U16/profile/U16\_D01\_sapu16ap01  \*\*\*WARNING: Formula parameter: ipc/shm\_psize\_40 = 1238000000 found in /sapmnt/U16/profile/U16\_D01\_sapu16ap01  \*\*\*WARNING: Formula parameter: rsdb/obj/max\_objects = 200000 found in /sapmnt/U16/profile/U16\_D01\_sapu16ap01  Parameter changes if default formulas would be used:  ================================================  EM/TOTAL\_SIZE\_MB: 180927 --> 45555  ES/SHM\_MAX\_SHARED\_SEGS: 3 --> 2  abap/buffersize: 8325975 --> 8359245  abap/cov\_buffersize: 156938 --> 157279  abap/heap\_area\_total: 32000000000 --> 18000000000  abap/programs: 2081494 --> 2089811  abap/shared\_objects\_size\_MB: 3619 --> 911  em/address\_space\_MB: 32948 --> 23472  em/global\_area\_MB: 9046 --> 2278  em/initial\_size\_MB: 180927 --> 45555  em/max\_size\_MB: 180927 --> 45555  em/reserved\_area\_MB: 3619 --> 911  gw/max\_conn: 4000 --> 2000  ipc/shm\_psize\_40: 1238000000 --> 1835008000  rsdb/obj/max\_objects: 200000 --> 66640  Additional Memory and OS Specific Checks  ================================================  Shared Memory Disposition Overview  ================================================  Shared memory pools  Key: 10 Pool  Size configured.....: 140000000 ( 133.5 MB)  Size min. estimated.: 137122768 ( 130.8 MB)  Advised Size........: 140000000 ( 133.5 MB)  Key: 40 Pool for database buffers  Size configured.....: 1238000000 (1180.6 MB)  Size min. estimated.: 2081911612 (1985.5 MB)  Advised Size........: 2086000000 (1989.4 MB)  Shared memories inside of pool 10  Key: 11 Size: 600000 ( 0.6 MB) Factory calender buffer  Key: 12 Size: 6000000 ( 5.7 MB) TemSe Char-Code convert Buf.  Key: 13 Size: 60500000 ( 57.7 MB) Alert Area  Key: 14 Size: 20000768 ( 19.1 MB) Presentation buffer  Key: 16 Size: 21360 ( 0.0 MB) Semaphore activity monitoring  Shared memories inside of pool 40  Key: 42 Size: 533547816 ( 508.8 MB) DB TTAB buffer  Key: 43 Size: 1019532384 ( 972.3 MB) DB FTAB buffer  Key: 44 Size: 220430752 ( 210.2 MB) DB IREC buffer  Key: 45 Size: 130431392 ( 124.4 MB) DB short nametab buffer  Key: 46 Size: 160 ( 0.0 MB) DB sync table  Key: 47 Size: 122983424 ( 117.3 MB) DB CUA buffer  Key: 48 Size: 2760160 ( 2.6 MB) Number range buffer  Key: 49 Size: 2224500 ( 2.1 MB) Spool admin (SpoolWP+DiaWP)  Shared memories outside of pools  Key: 1 Size: 512 ( 0.0 MB) System administration  Key: 2 Size: 64940560 ( 61.9 MB) Disp. administration tables  Key: 3 Size: 208896000 ( 199.2 MB) Disp. communication areas  Key: 4 Size: 1470688 ( 1.4 MB) statistic area  Key: 6 Size: 8866830336 (8456.1 MB) ABAP program buffer  Key: 7 Size: 33376 ( 0.0 MB) Update task administration  Key: 8 Size: 1072169460 (1022.5 MB) Paging buffer  Key: 18 Size: 6788760 ( 6.5 MB) Paging administration  Key: 20 Size: 226766954 ( 216.3 MB) New Table buffer tbi  Key: 21 Size: 11456832 ( 10.9 MB) Request Queue Admin  Key: 30 Size: 501340 ( 0.5 MB) Taskhandler runtime admin.  Key: 41 Size: 25010000 ( 23.9 MB) DB statistics buffer  Key: 51 Size: 35000000 ( 33.4 MB) Extended memory admin.  Key: 52 Size: 180000 ( 0.2 MB) Message Server buffer  Key: 54 Size: 682400768 ( 650.8 MB) Export/Import buffer  Key: 56 Size: 535528 ( 0.5 MB) Application statistics  Key: 57 Size: 1992294 ( 1.9 MB) Profilparameter in shared mem  Key: 58 Size: 2076 ( 0.0 MB) Enqueue ID for reset  Key: 62 Size: 180355072 ( 172.0 MB) Memory pipes  Key: 63 Size: 409600 ( 0.4 MB) ICMAN shared memory  Key: 64 Size: 4227072 ( 4.0 MB) Online Text Repository Buf.  Key: 65 Size: 40992768 ( 39.1 MB) Export/Import Shared Memory  Key: 73 Size: 60211232 ( 57.4 MB) CCMS Extended Alert Area  Key: 76 Size: 1185920 ( 1.1 MB) Ext. Segment Administration  Key: 77 Size: 383464 ( 0.4 MB) Ext. Memory Administration  Key: 78 Size: 4248 ( 0.0 MB) Ext. Global Memory Admin  Key: 81 Size: 35168 ( 0.0 MB) Security Audit Log  Key: 83 Size: 160704512 ( 153.3 MB) ABAP Coverage Analyzer  Key: 85 Size: 53240 ( 0.0 MB) ACM Trace and others  Shared memory resource requirements estimated  Total Nr of shared segments required.....: 33  Nr of shared segments successful tested..: 100  Shared memory segment size required min..: 8866830336 (8456.1 MB)  Currently available maximum segment size.: 34359738368 (32768.0 MB)  R/3-imposed maximum segment size.........: 21474836480 (20480.0 MB)  Memory Space Requirements Estimated \*  ================================================  Shared memory....................: 13236 MB  ..in pool 10: 130.8 MB ( 97% used) \*\*  ..in pool 40: 1985.5 MB ( 99% used) \*\*  ..not in pool: 11114.1 MB  Extended Memory .................: 180928 MB  SAP Heap Memory .................: 30517 MB  Gateway process .................: 95 MB  ICM process .....................: 195 MB  All Processes ...................: 25600 MB ( 241 WPs)  ------------------------------------------------  Total, minimum requirement........: 219764 MB  Process local heaps, worst case...: 56117 MB  Total, worst case requirement.....: 250281 MB  \* These are only estimated values,  final sizes may change  \*\* Shared Pools are automatically  calculated by Kernel  ================================================  Errors detected..................: 0  Warnings detected................: 13  ================================================ |

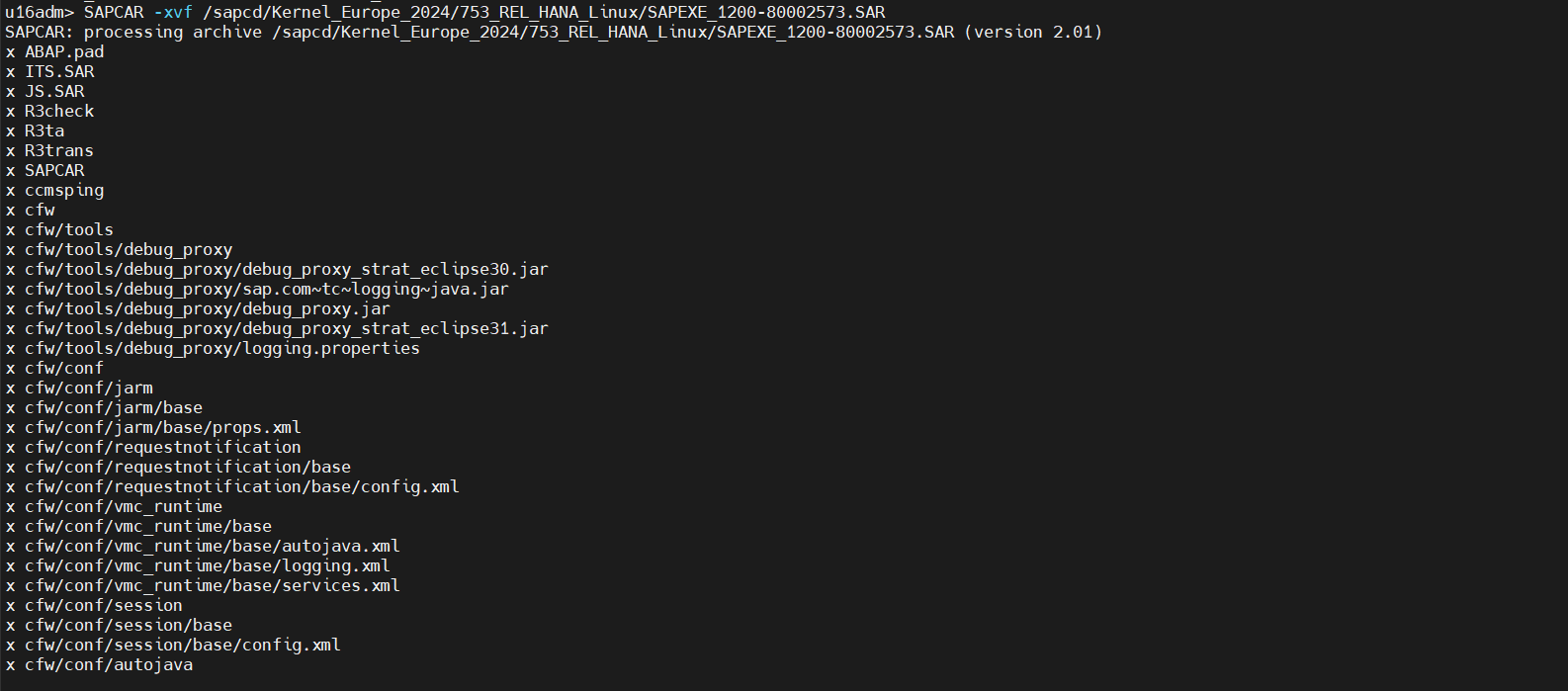
## Make new folder for UNCARING SAR files

#mkdir new\_kernel

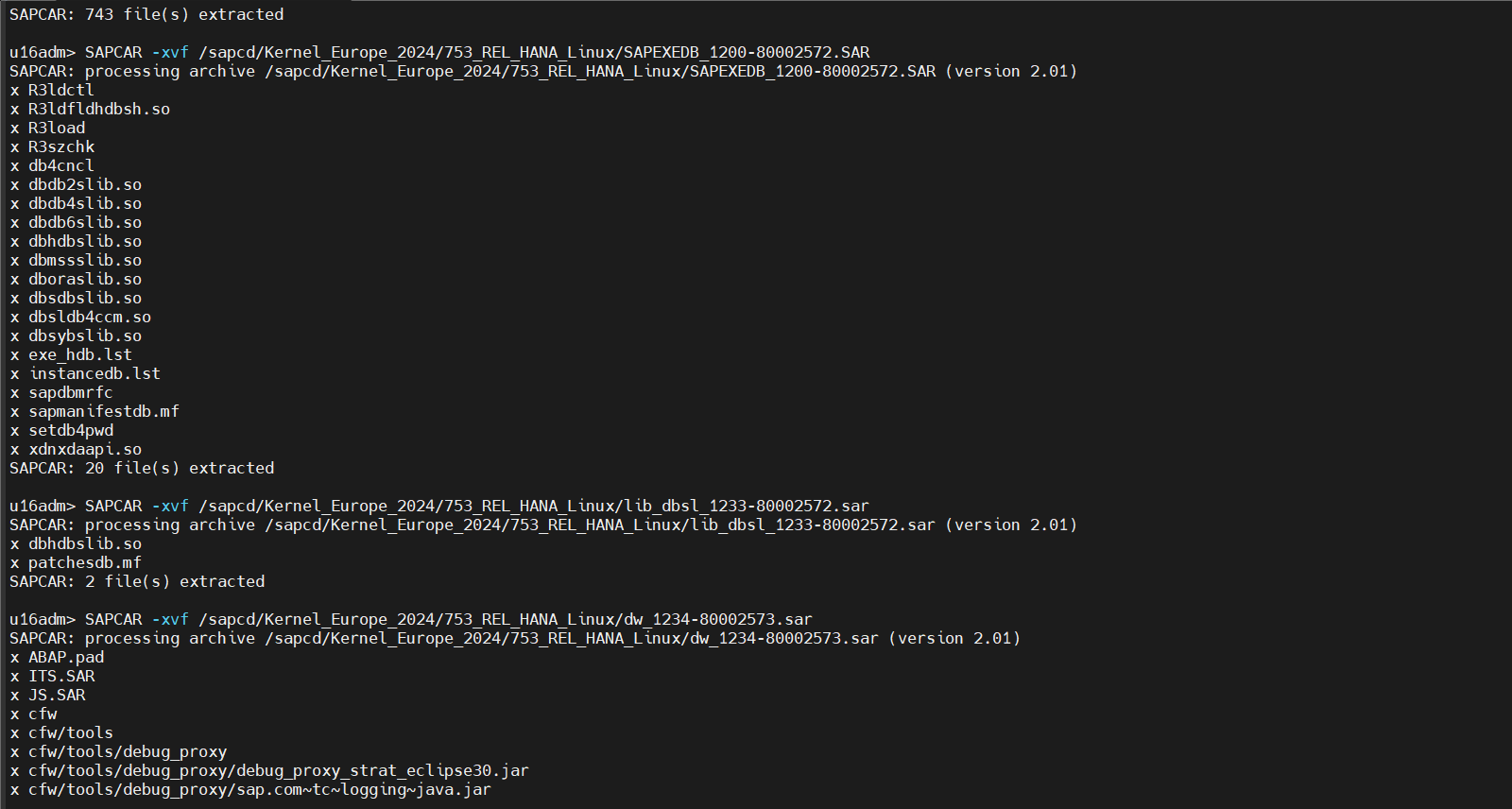
## Locate SAR files and UNCAR

#SAPCAR -xvf

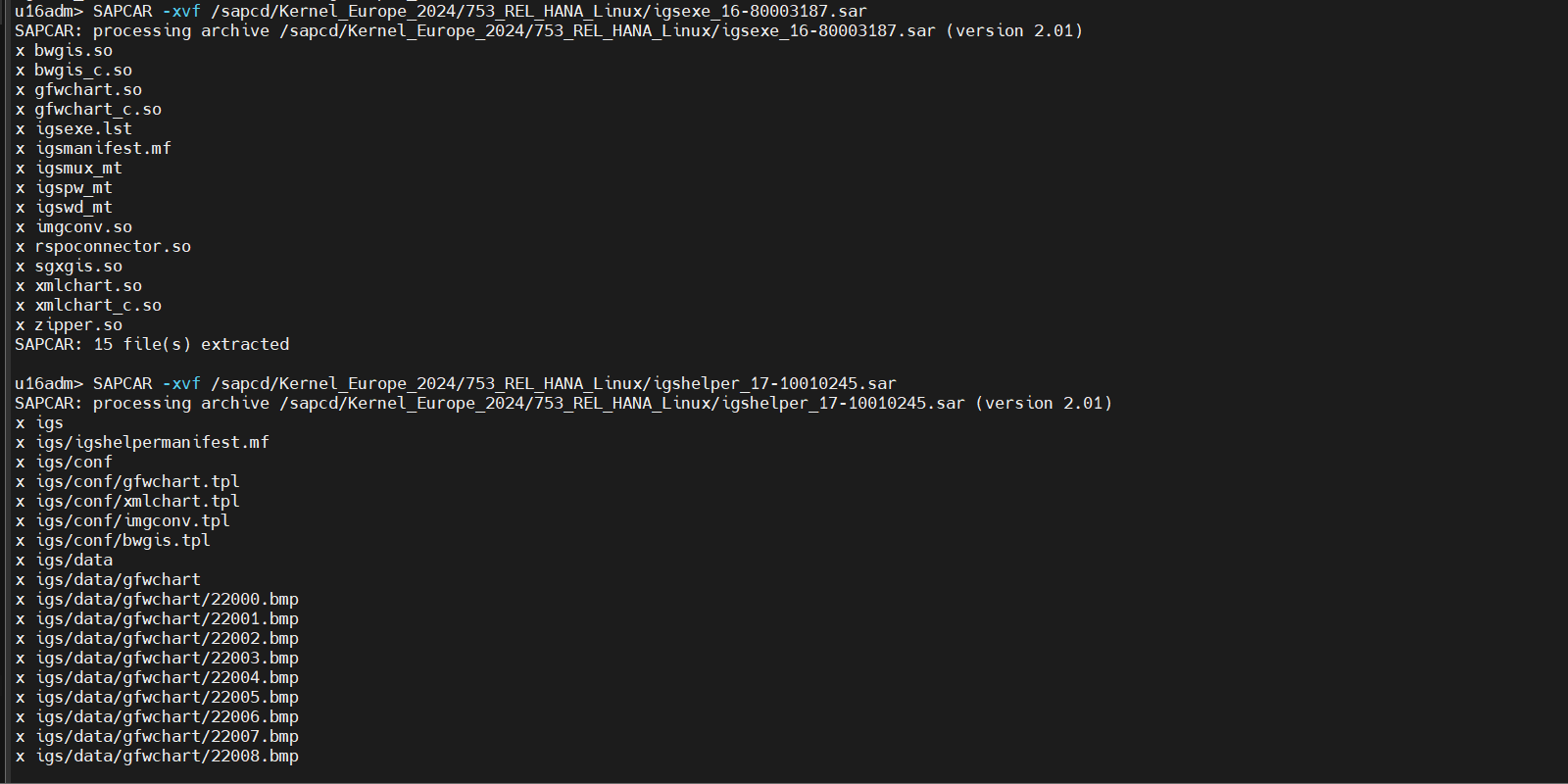
SAPEXE



SAPEXEDB & DBSL & DW



IGS & IGSHELPER



DBATL (if ORACLE)

## Perform basic pre validations on Application

1. SM51
2. SICK
3. SM50
4. ST22
5. SM21
6. SIGS

# Execution (Downtime)

## Stop Application servers

#stopsap r3

## Application servers validations (Kill running services and clean shared memory)

#ps -ef | grep sidadm

#sapcontrol -nr 00,01 -function StopService

#cleanipc 00 remove all

## Move/Change new kernel file to existing kernel folder

## Verify Kernel, IGS, IGSHELPER version

Kernel version after upgrade

IGS version after upgrade

IGS Helper version after upgrade

## Sync new kernel

#cdpro & #sapcpe pf=

## Copy IGS folder from /sapmnt/SID/exe/uc/linux to /usr/sap/D10/ASCS01/exe

## Validate SAP to DB Connection - R3trans -d (if Applicable)

## Start SAP on each SAP Application Server

# Post-checks

For ABAP

1. SM51
2. SICK in all apps
3. System dump ST22
4. System logs SM21
5. Locks Validation SM12
6. Updates- SM13
7. System response time-SMLG
8. Web services SMICM
9. Inbound queues SMQ2
10. Outbound queue SMQ1
11. Transactional RFC SM58
12. XML messages SXMB\_MONI
13. SM50- workprocesses
14. SNOTE
15. DB02
16. ST03n
17. ST06
18. RZ12