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Abstract:

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1. Introduction

1.1 Identification and Scope

This document is the CGS 7.3.8 SW Release Notes. The release is identified by document CGS SRO (ESO-IT-SRO-0204).

<u>CI Name:</u>	CGS SW
<u>CI Number:</u>	1130992
<u>CI Variant:</u>	7.3.8

1.2 Purpose

The purpose of this software release is a delivery of a validated version of CGS for official use.

1.3 Document Layout

This document has the following layout:

Chapter 1 provides the document identification and identifies under which CI this document is prepared. Chapter 1 also provides an overview of the purpose of the document and the overall document structure.

Chapter 2 provides the list of documents which are applicable or are referenced.

Chapter 3 provides an overall description of the release. Thus in this chapter all SW products being integrated are listed including the temporary fixes necessary to run the SW. This chapter also provides the identification of CCU versions being used for the SW product integration (if any).

Chapter 4 provides an overview of the release status. This includes a statement on the current test status and the identification of SPRs being fixed with this release.

Chapter 5 provides the installation instruction for the CGS SW.

Chapter 6 provides a list of abbreviations being used

2. Applicable and Reference Documents

CGS Documents:

	<u>name</u>	<u>issue</u>	<u>date</u>
Technical Note			
ESO-IT-RN-0110	CGS SW Release Notes (Linux)	17	29.05.2015
CGS-RIBRE-TN-0002	The CGS Authorization Concept	2/B	04.09.2006
SW Release Order			
ESO-IT-SRO-0204	CGS Software Release Order (Linux)	17	29.05.2015
User Manuals			
CGS-RIBRE-SUM-0001	CGS User Manual	20/-	29.05.2015
CGS-RIBRE-SUM-0002	CGS Installation Manual (Linux)	12/-	30.06.2014
CGS-RIBRE-SUM-0003	MDA Reference Manual	1/G	05.04.2012
CGS-RIBRE-SUM-0005	DADIMA Reference Manual	1	09.11.2001
CGS-RIBRE-SUM-0006	DADIMA Administration Manual	1	09.11.2001
CGS-RIBRE-MA-0001	UCL Debugger User Manual	1	01.09.2004
CGS-RIBRE-MA-0003	call - A tool to add a graphical user interface to command line based programs	1/-	01.03.2006
CGS-RIBRE-MA-0004	"mdb - MDB Access Tool"	1/A	01.02.2009
CGS-RIBRE-MA-0005	"generate - Text Generation Tool"	1/-	01.03.2006
CGS-RIBRE-MA-0006	CDU Merge Users Manual	1	14.03.2006
CGS-RIBRE-MA-0007	Start Center - A generic user interface for multi-process systems	1/C	04.09.2007
CGS-RIBRE-MA-0008	An XML Based Configuration Concept	1/-	01.10.2006
CGS-RIBRE-MA-0010	Logger - A client/server based logging system	5/-	25.06.2014
COL-RIBRE-MA-0018-00	MDA Administration Manual	4/B	31.03.2000
COL-RIBRE-MA-0030-00	MDA Introduction Manual	3/B	04.04.1997
COL-RIBRE-MA-0037-00	DADIMA Introduction Manual	3	04.04.1997
COL-RIBRE-MA-0046	SID Range Tool Users and Operations Manual	1	15.09.1997
Reference Manuals			
CGS-RIBRE-STD-0001	User Control Language (UCL) Reference Manual	5/-	29.01.2010
CGS-RIBRE-STD-0002	High Level Command Language (HLCL) Reference Manual	5/a	29.05.2015
CGS-RIBRE-STD-0003	Virtual Stack Machine and I-Code Reference Manual	5/-	29.01.2010
COL-RIBRE-STD-0008	Reference Manual for Crew Procedure Language and Software, Commanding	1/F	31.10.2001
Requirements Specifications			
CGS-RIBRE-SPE-0001	Columbus Ground System (CGS) Requirement Specification	2/D	23.03.2004
CGS-RIBRE-SPE-0002	CGS Test Case Specification and Test Procedure	7/-	30.06.2008
Design Documentation			
COL-RIBRE-ADD-0006	Columbus Ground System (CGS) Software Architectural Design Document	4/B	30.10.1997
Interface Definitions			
CGS-RIBRE-ICD-0001	System to CGS ICD	1/-	31.01.2002
CGS-RIBRE-ICD-0002	MDB Standard Entities and Application Program Interface	1/-	
ESO-IT-LI-0070	List of IRNs from CGS-RIBRE-ICD-0001	1	01.07.2008
ESO-IT-LI-0071	List of IRNs from CGS-RIBRE-ICD-0002	1	01.07.2008
USS Documents:			
	<u>name</u>	<u>issue</u>	<u>date</u>
SW Release Note			
ESO-IT-RN-0095	USS 2.24.0 Release Note	10/-	26.05.2015
SW Release Order			
ESO-IT-SRO-0143	USS SW 2.24.0	10/-	26.05.2015

3. Release Overview

3.1 CCU Version Identification

This CGS SW Release provides no mission database content.

3.2 Integrated Products

In following table integrated components are identified, delivered with this release of the CGS SW.

- USS 2.24.0 (see 4.3)

3.3 Release Media & their Contents

The System is delivered as ISO image as described in SW Release Order (ESO-IT-SRO-0204).

This delivery contains the CGS system as well as online documentation.

3.4 Identification of the Generation and Test Environment

The CGS SW Generation environment is based on commercial baseline described in chapter 4.3 Commercial Baseline.

The CGS Test environment is based on commercial baseline described in chapter 4.3 Commercial Baseline.

4. SW Release Status

4.1 Release Status

The release status is: **VALIDATED**

The SPRs fixed in this release have been regression tested as documented in the CGS SPRdb. It has been assessed that the code changes have no impact on the qualification status of other SW modules of CGS as released in former versions.

4.2 Test Status

This CGS SW was tested using the baseline as defined in Chapter 4.3. The test status is VALIDATED.

Only the SPRs fixed in this release have been regression tested as documented in the CGS SPRdb.

4.3 Commercial Baseline

- ✓ Suse Linux Enterprise Server 10 / ServicePack2 / 32 bit
 - Recommended patch: glibc-2.4-31.63.7.i686.rpm, glibc-devel-2.4-31.63.7.i686.rpm
- ✓ Oracle 11.2.0.3.0 standard one edition
- ✓ gnat 6.4.1 used to build CGS API (*)
- ✓ CIS CORBA Server built with PrismTech OrbAda OrbAda 3.0_V110722 (CORBA 2.5, GIOP 1.2)
- ✓ CIS CORBA Server built with Ada Core PolyORB 2.10.0w-20130529 (rev. 210323) (CORBA 3.0, GIOP 1.2)
- ✓ USS version 2.24.0 (build-20150507-1123 @ 116643) (*)
- ✓ Java 1.6.0_14 (*)

This CGS SW release shall be executed on Intel PC with SUSE Linux Enterprise Server 10 (SLES10 - 32 bit) based environments.

(*) marked components are available on CGS delivery

4.4 Recommended Hardware Baseline

- ✓ It is recommended to use NVIDIA graphic card and the corresponding NVIDIA driver for usage of USS.

4.5 Recommended KDE settings

- ✓ It is recommended to set for each user the focus stealing prevention to "None" (KDE/Personal Settings/Desktop/Window Behaviour/Advanced/Focus stealing prevention level). This means: Prevention is turned off and new windows always become activated. (SPR-102860)

4.6 Compatibility Statement

The compatibility of current CGS 7.3.8 and selected CGS components to previous CGS versions are shown below (✓ - compatible)

CGS Version \ Component	7.2.1	7.2.2	7.3.0	7.3.1	7.3.2	...	7.3.7	remark:
CGS software					✓		✓	
MDB	✓	✓	✓	✓	✓		✓	upward compatible
SAS (CGS API)				✓	✓		✓	new CGS API in 7.3.1
CSS model			✓	✓	✓		✓	rebuild requested in 7.3.0
I-Code	✓	✓	✓	✓	✓		✓	
UCL System Libraries	✓	✓	✓	✓	✓		✓	
Command History					✓		✓	new installation requested in 7.3.2

Remark: It is still possible to import MDB content (CCU, CDU) from CGS 7.3.6 to CGS 7.3.8 in CGS 7.3.5.

4.7 New or Updated Components

All software components are updated.

4.8 New features in CGS 7.3.8

What's new in CGS 7.3.8 (different from CGS 7.3.7)?

This version is a bug fix version only. No major changes are implemented! Some changes are described in detail in the next sections.

Remark: The major changes between CGS 7.2.2 and CGS 7.3.6 are described in [CGS 7.3.6 release notes](#) (ESO-IT-RN-0110,13/-,28.02.2014).

Remark: The changes CGS 7.3.7 are described in [CGS 7.3.7 release notes](#) (ESO-IT-RN-0110,15/-,30.06.2014).

4.8.1 CGS – UCL system libraries changed ([SPR-102436](#), [SPR-103247](#))

The CGS UCL system libraries

- `ground_to_ob_lib_cof_.ucl` / `ground_to_ob_lib_.ucl`
- `message_library_.ucl`

are changed. CGS is still able to process the old versions of these libraries.

4.8.2 CGS – Remove obsolete configuration parameter ([SPR-103377](#))

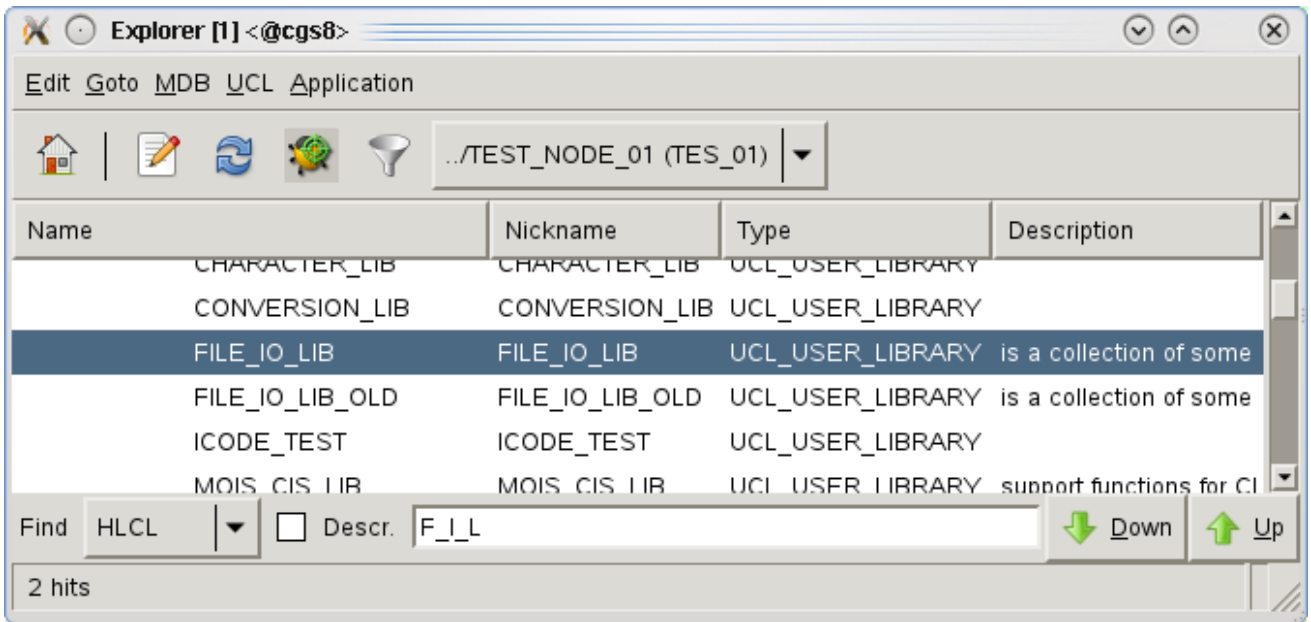
In CGS configuration parameter:

`NWSW.IGNORE_ALIVE_MSG_CHECK`

has been removed from configuration. No alive message checking is implemented any longer, as the default behaviour from former versions. If this parameter is defined in existing configuration files, it will be ignored.

4.8.3 Integrate UCL Browser in Explorer ([SPR-103313](#) - integrated from CGS 8)

In this version the UCL Browser is not existent any longer. All the functionality is integrated into the Explorer window. A special view allows switching the explorer window in such way, that only UCL items are visible (as in the UCL browser window before).

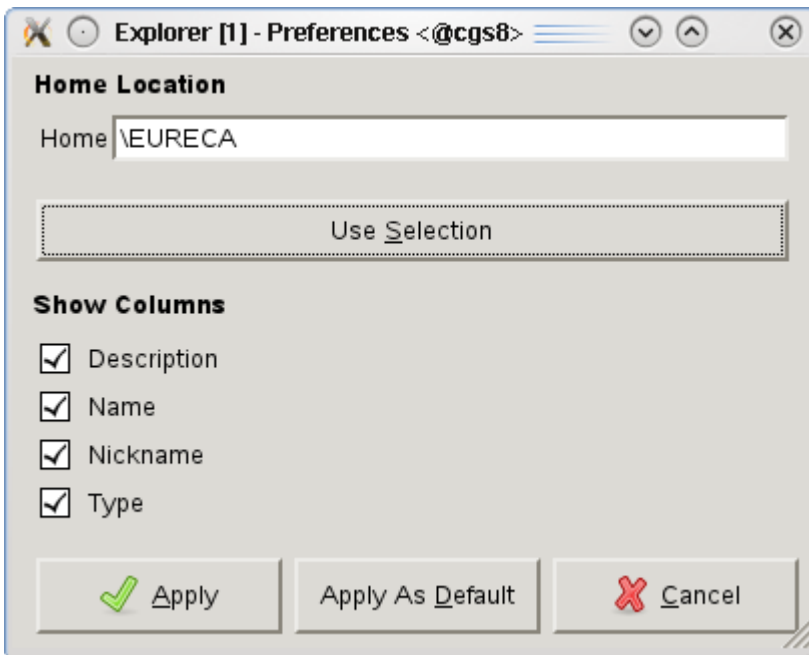


4.8.4 Status Display Improvements ([SPR-103259](#), [SPR-103286](#), [SPR-103287](#), [SPR-103297](#) - integrated from CGS 8)

Some HCI status displays are improved with respect to displayed columns and column sizes. The affected windows are:

- AP Status Window
- Out Of Limit Display
- Monitoring Window
- Explorer Window

In the Explorer Window it is possible now to display the enditem description - see figure above. As an example the preferences of the explorer window are shown in figure below:



For more details see in CGS user manual section 7.3.2.4.2, ff.

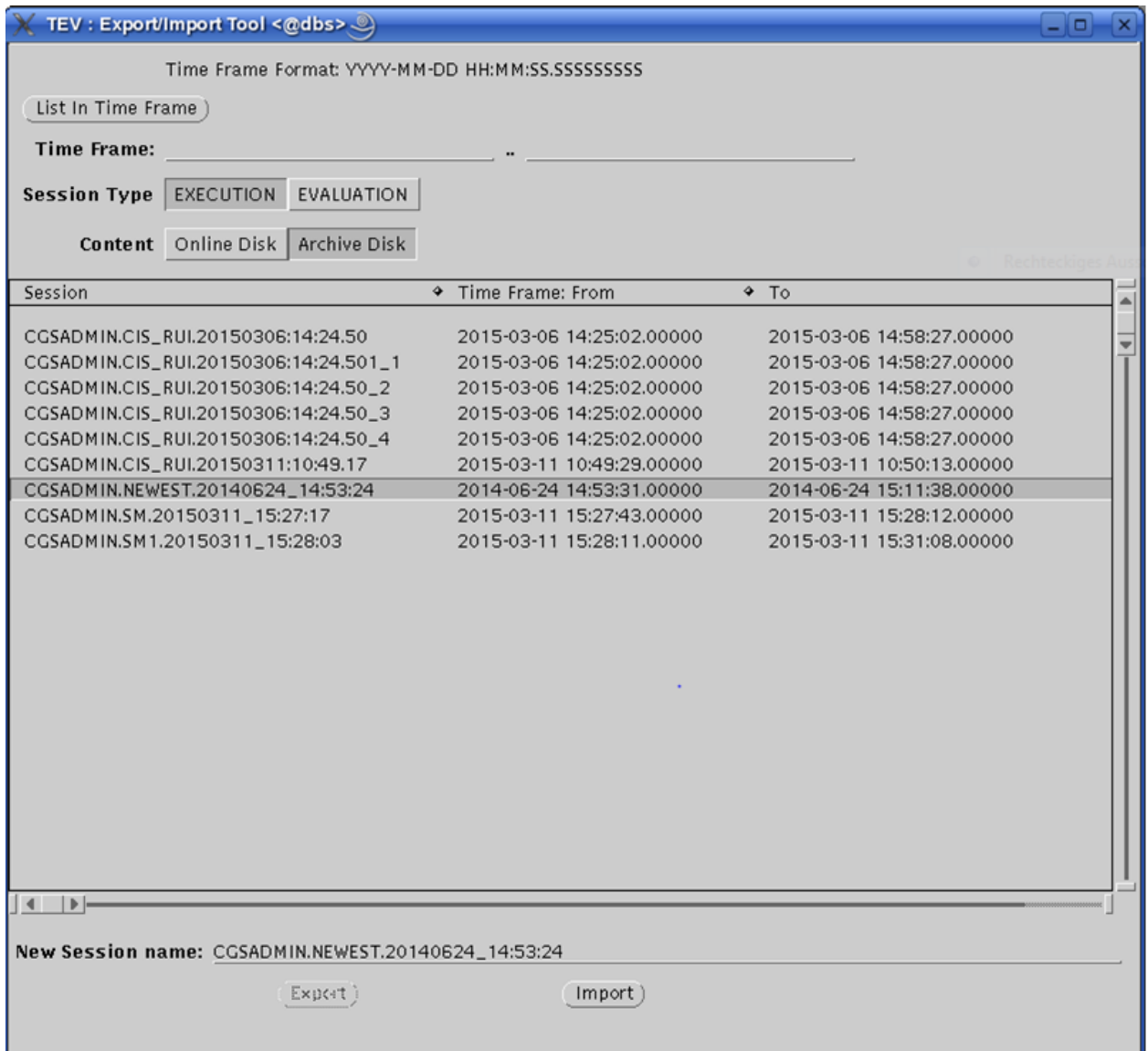
4.8.5 Search Improvements (SPR-103307 - integrated from CGS 8)

In HCI Explorer window it is possible now additional to search like in HLCL shell. This works like HLCL abbreviations (see CGS-RIBRE-STD-0002 High Level Command Language (HLCL) Reference Manual, section 4.17 Abbreviations).

Example: when searching for T_P_OFF enditem with name TSZC_POWER_OFF will match.

4.8.6 Exported sessions display with time frame (SPR-103155)

In TEV->Export/Import window the sessions from Archive Disk are displayed with time frame:



4.9 SW Problem Status

4.9.1 SPR Status and Impact Analysis

For this release 36 SPR's are solved.

ID▲	TITLE	EXTERNAL REFERENCE
SPR-102436	Missing functionality in the GROUND_TO_OB_LIB	COL-RIBRE-SPR-23899
SPR-103036	DBS does not try to reconnect to the Oracle database upon inexistent/lost connection	COL-RIBRE-SPR-25666
SPR-103134	DDED: Subwindow Resizing Problem (for end item type EVENT_MESSAGES on KDE)	COL-RIBRE-SPR-25639
SPR-103136	TEV reports ok in case of erroneous export	
SPR-103137	TSCV reports only "error" in case of erroneous export	
SPR-103138	Warning from CENTRAL_LOG_TABLE_MANAGEMENT.EXPORT_EVENT_TABLE.	
SPR-103155	Information missing in TEV Export/Import tool	COL-RIBRE-SPR-25898
SPR-103159	DBS down (after CGS startup) due to incorrect system topology table	COL-RIBRE-SPR-25908
SPR-103192	OOL Tool No of e-Mails	COL-RIBRE-SPR-25981
SPR-103193	OOL E-Mail Notification Problem	COL-RIBRE-SPR-25978
SPR-103196	The Change_Date of a UCL_USER_LIBRARY does not change when modifying Spec and/or Body source	COL-RIBRE-SPR-25985
SPR-103232	TEV could not generate dataset	COL-RIBRE-SPR-26031
SPR-103247	Incompatibility of MESSAGE_LIBRARY to CGS 7.3	COL-RIBRE-SPR-26066
SPR-103264	Unreadable passages in the CGS user manual	COL-RIBRE-SPR-26104
SPR-103265	CGS-TSCV Application shut-down causes internal errors	COL-RIBRE-SPR-26105
SPR-103270	Empty command stops process creation server	
SPR-103283	HLCL listing corrupted and incomplete	COL-RIBRE-SPR-26148
SPR-103312	COL-DR-010142: CIS reporting "STORAGE_ERROR: heap exhausted"	COL-RIBRE-SPR-26189
SPR-103326	CGS should provide SCOE-XML V3.4.0 or higher for CGS 7.3.x	
SPR-103340	TES logs misleading sequence count error message	COL-RIBRE-SPR-26054
SPR-103342	Flexible MDB Reports: CU Difference report fails for CUs with equal contents	
SPR-103344	delete_partitions --all finished after 01:15:46	
SPR-103347	cls_object_table-operations.adb:2033 access check failed	
SPR-103349	CLS compiler compiles too much	
SPR-103359	Error in String_Library.Position	COL-RIBRE-SPR-26247
SPR-103361	Integration of USS 2.24 in CGS 7.3	
SPR-103362	Command retrieved from HLCL command history buffer not correct	COL-RIBRE-SPR-26252
SPR-103363	HCI Explorer: 'Pattern not found' for correct OPS_NAME (abbreviated or full)	COL-RIBRE-SPR-26254
SPR-103364	HLCL: "Open" command not working with named parameter SEQUENCE	COL-RIBRE-SPR-26258
SPR-103365	HLCL: Qualifier not present in expanded command	COL-RIBRE-SPR-26259
SPR-103366	HLCL interpreter log messages change message text	

SPR-103370	Class ORDINARY (error) mapped to INFO	COL-RIBRE-SPR-26275
SPR-103377	Remove CGS conf parameter Nsw.Ignore_Alive_Msg_Check	COL-RIBRE-SPR-25907
SPR-103379	USS can't load tree.dat file for quick graph	
SPR-103383	Wrong scope of CLS item shown after compilation	COL-RIBRE-SPR-26326
SPR-103386	PDC UserSite-CorbaProxy-CIS connection problem	COL-RIBRE-SPR-26329

4.10 Temporary fixed Problems

4.10.1 Further Open Problems

- SPR-100868 - SAS linked with the CGS API and using `posix.process_primitives.exit_process` are hanging. Use the system call `_exit` (not `exit` !) instead of `posix.process_primitives.exit_process`.

4.10.2 Known Restrictions

- It is not possible to prepare a telecommand (SWOP, FLAP, PUS_TC, and TC) via CIS, if this telecommand is defined with garded parameters in the parameter lists.
- SPR-101245 - CIS clients to implement sufficient large timeouts that can deal with a 10 seconds delay of 'Login' or 'subscribe<service>' requests.
- Not all interfaces for the new CGS IDL 2.0 are implemented in CGS:
Note: unsupported 'oneway void' calls are stubs, just generating a debug message
`'<Procedure_Name> -- to be implemented --'` with debug output enabled.

- - not (yet) supported by CGS:
 - Calibration description as telemetry property:
 - not yet supported by CGS: no calibration updates are sent by CIS
 - Telemetry report deliveries:
 - Telemetry data reports not yet supported:
 - `Telemetry.getTelemetryReport` raises `ServiceNotAvailable`.
 - `Telemetry.cancelTelemetryReport` is empty.
 - `TelemetryClient.telemetryReportDelivery` is never called by CIS.

5. Installation Procedures

This software shall be used on Intel PC with SUSE Linux Enterpriser Server 10 (SLES10).

5.1 Complete Installation

For a complete installation follow the instructions of CGS installation manual CGS-RIBRE-SUM-0002.

Remark: The actual CGS installation manual is on ISO image below /<mountpoint>/doc/manual.

5.2 Upgrade Installation

5.2.1 Installation steps (based on CGS 7.2.2 ... CGS 7.3.1)

For upgrade installation based on CGS 7.2.2 .. CGS 7.3.1 please follow instructions defined in [CGS 7.3.6 release notes](#) (ESO-IT-RN-0110,13/-,28.02.2014).

5.2.2 Installation steps (based on CGS 7.3.2 ... CGS 7.3.7)

The following syntax

```
cgsadmin> ls -al
```

means the shell command *ls -al* executed as user *cgsadmin*,

```
oracle> cd
```

means the shell command *cd* executed as user *oracle*.

For an upgrade installation following passwords needed:

1. <*cgsadmin*> (UNIX user)
2. root (UNIX user)
3. <*oracle*> (UNIX user)
4. <*MDB_ADM*> (oracle user)

For an upgrade installation follow the next instructions.

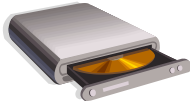


1. login as user <*cgsadmin*> on DB server host
2. cgs shutdown via `cgs start_center`
3. stop command history / central distributor (on command history server)

```
cgsadmin> $CGS_HOME/gsaf/dbs/bin/common/stop_cmd_history
```

```
cgsadmin> $CGS_HOME/gsaf/dbs/bin/common/stop_central_distributor
```
4. quit `cgs start_center`
5. terminate the `cgs_daemon`

```
cgsadmin> killall -9 cgs_daemon
```



6. insert CGS DVD CGS_7.3.8

7. mount DVD

8. install all products from DVD

```
cgsadmin> /<mountpoint>/installer.sh
```

Select Exit (after installation)

9. unmount DVD

10. update the MDB

```
cgsadmin> $CGS_HOME/patches/patch_mdb.sh
```

11. update the Oracle JDBC driver

```
cgsadmin> $CGS_HOME/patches/update_ojdbc.sh
```

12. update CGS directory structure and delete unwanted files

```
cgsadmin> $CGS_HOME/patches/patch_cgs.sh
```

13. merge USS configuration files from former version into the new one

14. **optional** - convert old I-MDB CCU filter ([SPR-102961](#))

Download `correct_ccu_filter.sh` from [CGS-RIBRE-SMD-102961-B](#).

```
cgsadmin> chmod +x correct_ccu_filter.sh
```

```
cgsadmin> ./correct_ccu_filter.sh
```

```
for each user> ./correct_ccu_filter.sh
```



15. reboot server and if the server is ready, reboot all clients

6. Acronyms

AD	Applicable Document
ADD	Architectural Design Document
AP	Automated Procedure
ASCII	Americal Standard Code for Information Interchange
ATP	Authorization to Proceed
ATV	Autonomous Transfer Vehicle
CCB	Configuration Control Board
CCU	Configuration Control Unit
CCSDS	Consultative Committee for Space Data System
CGS	Core Ground System
CDU	Configuration Data Unit
CLS	CGS Language System
COTS	Commercial Off-The-Shelve
CPL	Crew Procedure Language
CPU	Central Processing Unit
D&D	Design and Development
DMS	Data Management System
DOF	Degree of Freedom
EGSE	Electrical Ground Support Equipment
EM	Engineering Model
EQM	Engineering Qualification Model
ESA	European Space Agency
ETM	Electrical Test Model
FDIR	Fault Detection, Isolation and Recovery
FM	Flight Model
GMT	Greenwich Mean Time
GNC	Guidance Navigation Control
GPS	Global Positioning System
HCI	Human-Computer Interface
HL	High Level
HLCL	High Level Command Language
HW	Hardware
ICD	Interface Control Document
IF	InterFace
ISS	International Space Station
LL	Low Level
MDB	Mission Database
MET	Mission Elapsed Time
MMS	Matra Marconi Space
N/A	Not Applicable
PDB	Project Data Base
PROM	Programmable Read Only Memory
RAM	Random Access Memory
RD	Reference Document
RFW	Request for Waiver
ROM	Read Only Memory
RV	RendezVous
S/C	SpaceCraft
SCCB	Software Configuration Control Board
SOC	Statement of Compliance
SPR	Software Problem Report
SRD	Software Requirements Document
SUM	Software User Manual
SW	SoftWare
SWRU	Software Replaceable Unit
TBC	To Be Confirmed
TBD	To Be Defined
TC	TeleCommand
TM	TeleMetry
TRR	Test Readiness Review
UCL	User Control Language
URD	User Requirements Document
UTC	Universal Time Coordinated
VCD	Verification Control Document
VTP	Validation Test Plan

