A MITEL
PRODUCT
GUIDE

Unify OpenScape 4000

Standard Diagnosis and Troubleshooting Procedure

Service Documentation
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Mitel

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Contents

1 OpenScape 4000 System

The HISTA and SWU Regen from the system should always be provided.

The ACL component is needed in all OpenScape 4000 system traces.

The permanent trace in the OpenScape 4000 system includes this by default (TRACS profile 8).

Details can be found in the chapter 1 of this document.

1.1 Basics

The following guidelines are mandatory when creating a ticket to escalate an issue related to the OpenScape 4000 systems:

- You must provide clear descriptions of the issues encountered in English.
- You must include a clear escalation summary of previous actions and diagnosis.

The following chapters include more details about escalating OpenScape 4000 issues.

1.1.1 CP problems

When escalating CP problems, you must perform the following steps:

- Check if the problem is already resolved with a newer release (e.g. MR/FR/HF).
- Provide a detailed description of the problem upon ticket escalation.
- State whether the problem is reproducible or not in the lab or at customer's site.
- Provide a **binary** trace file for the problem described.
- Check if the problem is contained in the trace/logs collected.
- Ensure that the error message in the trace (including at least 1 hour leading up to the trace stop) is displayed in the following format:

  `STA-HISTA:SEARCH,"<relevant time>"; - NOT SEARCHB !!!`
- Include any relevant configuration details.

  For example, the PEN number can always be identified in the error message if the trace is stopped on a User Address.
- Include any relevant AMO DISPS command outputs for the stations involved in the scenario.
- Include any relevant remote access detains (e.g. SIRA-ID, direct modem details, WebCollaboration possibilities, etc.).
- Ensure that the trace quality control has been performed.

  For more information about trace quality control, see Controlling trace quality on page 58.

In addition to the above steps, you must always include a file with the outputs of the following AMO commands:

- `DIS-APS;`
- `REG-DBC;`

- `DIS-PATCH:SYS;`
- `DIS-VEGAS;`
- `DIS-SIGNL:SYSTEM;`

More than a UA

In case of errors at a specific UA, engineers might try to solve the issues by activating multiples patches for the UA that are available in Hista.

Errors are signalled at the same UA due to a limited number of exception handlers (routines call the same areas of code to signal errors). The header of the error message provides all necessary information to determine if a reported fault is the same as a fault already fixed by a patch.

The following parts of the error message header are relevant:

CC:	The **Call Code** indicates the type of device where the error occurs (e.g. analogue, digital, trunk, attendant, networking etc.).
EC:	The **Exception Code** indicates the reason why the error occurs (e.g. a missing parameter, a value out of range, etc.).
CEVT:	**CEVT** indicates the type of event that caused the error (e.g. a networking event, a timer expiration event, etc.).
CSEV:	**CSEV** represents a subset of an event and indicates which sub-event caused the error. Examples: • Different sub-events belonging to a networking event would be used to setup, facility or disconnect. • Different sub-events belonging to a timer expiring (timeout) would be an announcement due to no answer, CFNR or a display timer.
CST:	**CST** indicates the state in which the error occurred. Specific states are represented with hex values (e.g. idle, ringing, dialing, etc.).

The figure below displays an example an error message header. It can be used to determine if the error is the same as another one already solved OR if we if there are more errors with the same UA on the system.

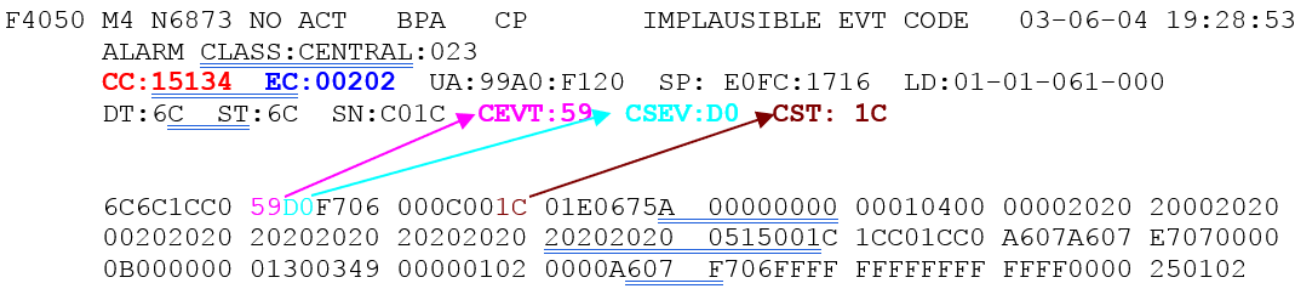


Figure 1: Example of an error message header

Final points for experts

Tables containing the **EC** and **CC** information are available on the OpenScape 4000 RMX HD by typing:

```
sta-list:":pds:apsu/calexs0",,,m;       for the SWU
sta-list:":pds:apsu/calexd0",,,m;       for the ADP
```

C in the first column indicates **Call Codes** and **E** in the first column indicates **Exception Codes**.

1.1.2 AMO and ADP problems

For AMO and ADP problems, it is recommended to include the outputs of the following AMO commands:

- `DIS-APS;`
- `REG-DBC;`
- `DIS-PATCH:SYS;`
- `STA-HISTA:SEARCH,"<relevant time>";` **`- NOT SEARCHB !!!`**
- `STA-LOGBK:"<relevant time>";`

> **NOTICE:** LOGBK can be also collected via the Platform, under `/var/opt/Assistant/data/BACKUP/logbk`. Starting with V10 it is also included in the permanent logging archive.

- `DIS-SIGNL:SYSTEM;`

Additionally, you must include a copy of the customer's RMX HD image. For more information, see section **1.1.7 COLLECTING AN RMX HD IMAGE**.

Due to security reasons, it is not recommended to attach passwords in clear text in the ticket. Instead, passwords should be sent via encrypted emails.

1.1.3 Loadware problems (LW)

For loadware related problems, it is recommended to include the outputs of the following AMO commands:

- `DIS-APS;`
- `REG-DBC;`
- `DIS-PATCH:SYS;`

- `STA-HISTA:SEARCH,"<relevant time>";` **`- NOT SEARCHB !!!`**
- `STA-LIST::PDS:APSP/LTG/LG<xx>/ <lw name> ,,300,T;`
- `STA-LIST:":PAS:HIM/PB",,,M,N,C;` - for the activated loadware

Additionally, you must include a standard trace including HDLC messaging. For more information, see section Enhancing the traces on page 44.

1.1.4 Hardware problems (HW)

Whenever a potential product safety issue is identified, it needs to be reported as soon as possible.

For more information about product safety issues, see Recognize Product Safety Incidents.

Diagnosing hardware problems often require sending the faulty hardware parts directly to Munich. In such cases, a corresponding **Unify Product Safety Incident Report** must be completed and escalated.

For more information about **Unify Product Safety Incident Reports**, see Product Monitoring Incident Report / Produktbeobachtung Schadensmeldung.

The board part number and revision should always be included for the problematic board.

INFO: Wherever possible, a photo of the defect hardware part should be provided.

1.1.5 General restart problems

For general restart problems, the outputs of the following AMO commands must be included:

- `DIS-APS;`
- `REG-DBC;`
- `DIS-PATCH:SYS;`
- `DIS-VEGAS;`
- `DIS-SIGNL:SYSTEM;`

IMPORTANT:

Additionally, it is mandatory to include all OpenScape 4000 Portal and Platform logs.

The following files should also be attached to the ticket:

- A complete **system regen** (whether Remote Access is available or not).
- **HISTA** (Please use search **-NOT SEARCHB!!!**)
- `STA-LOGBK:"<relevant time>";`
- `STA-LOGBK:"<relevant time>";`

NOTICE: LOGBK can be also collected via the Platform, under `/var/opt/Assistant/data/BACKUP/logbk`.

Starting with V10 it is also included in the permanent logging archive.

- `:PAS:ACTF/AT/*`
- `:DIAG:RTM/*` **`(CPCI HW ONLY when using RTM board)`**

NOTICE:

You can use `ACT-USSU:DLLOGFL;` for download.

For EcoServer hardware, download RTMx logs from the Portal WBM, under Maintenance -> Logs -> Export (RTMx only is needed). Ensure that the option "Include only the current log files" is not enabled.

- `:PAS:HIM/BS/*`
- `:PAS:BCA/*`

A detailed error description with information about restart action or manual interventions must be provided. For more information, see Dynamic Overload & Watchdog section.

1.1.6 Portal and Platform problems

For Portal/ Platform problems, logs should be collected via Portal WBM. by navigating to **Maintenance** > **Logs** > **Export**.

NOTICE:

Ensure the logs cover the time of the reported error.

To collect logs from the Portal WBM, follow the steps below:

Step by Step

1) Open **Portal WBM** and navigate to **Maintenance** > **Logs** > **Export**.

2) Ensure that the option **Include only log files older than <> days** is disabled.

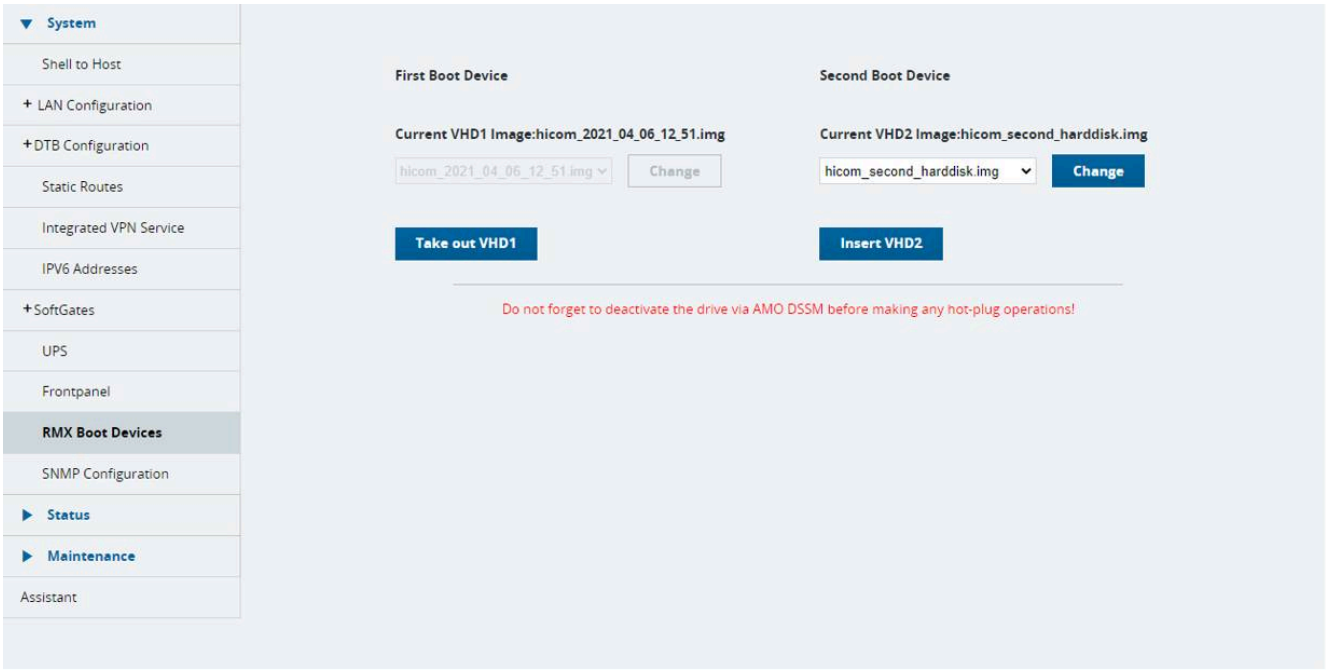
If the Portal WBM is not accessible, the logs must be collected via SFTP. To do so, use SSH to connect to each node and run the following command:
`/opt/webservice/scripts/get_logs.sh -p /var/tmp/NodeXcurrent-logs.tgz`

1.1.7 Collecting a RMX HD image

To collect a RMX HD image, follow the steps below:

Step by Step

1) Open **Platform Portal** and navigate to **RMX Boot Devices**.



2) Under the **Second Boot Devices** area, select **hicom_second_harddisk.img** from the drop-down list, then click **Insert VHD2**.

   A pop-up message is displayed prompting you to confirm the action.

3) Click **Ok**.

   The second boot device selected is now successfully linked and ready to use.

4) Next, perform the following actions via the AMO interface (COMWIN tool):

   - Initiate the second boot device:
     `:a1h61: via AMO INIT`
   - Verify the status of the boot device:
     `:a1h61: via AMO DDSM`
   - Copy all areas via `AMO DDRSM`.

`[ START-INIT:UNIT=A1,DEVNAME="A1H61"; ]`

```
 <sta-init:a1,a1h61;
STA-INIT:A1,A1H61; H500:  AMO INIT  STARTED
H04: IT WILL BE TRIED TO WRITE UPON A NOT FORMATTED
 MANAGEMENT AREA
H05: MANAGEMENT AREA WRITTEN
H01: CREATE AND WRITE FNODE FILE
H02: INIT FOR <:A1H6E:> COMPLETED
H01: CREATE AND WRITE FNODE FILE
H02: INIT FOR <:A1H6F:> COMPLETED
H01: CREATE AND WRITE FNODE FILE
H02: INIT FOR <:A1H6G:> COMPLETED
H01: CREATE AND WRITE FNODE FILE
H02: INIT FOR <:A1H6H:> COMPLETED
```

```
                          H01: CREATE AND WRITE FNODE FILE
                          H02: INIT FOR <:A1H6I:> COMPLETED
                          H01: CREATE AND WRITE FNODE FILE
                          H02: INIT FOR <:A1H6J:> COMPLETED
                          H01: CREATE AND WRITE FNODE FILE
                          H02: INIT FOR <:A1H6K:> COMPLETED
                          H03: INIT FINISHED
                          STATUS  =  H'0000
                          AMO-INIT -111   HARD DISK AREA INITIALIZING

                          START COMPLETED;
```

[DISPLAY-DDSM:UNIT=A1,TYPE=C,CNO=6;]

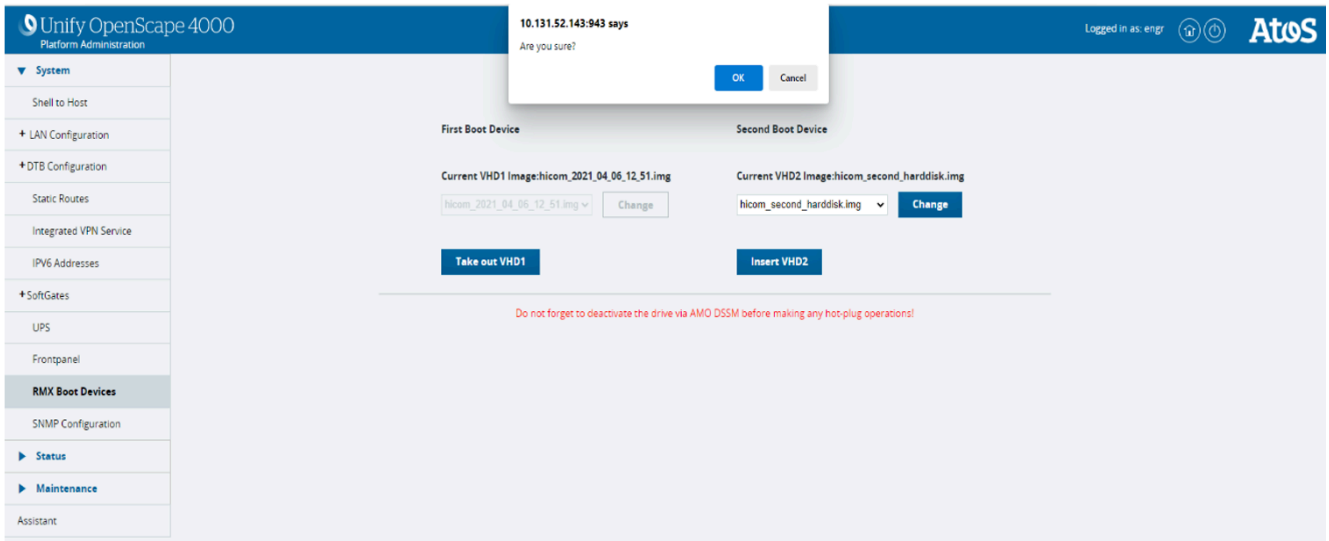
```
   <DISPLAY-DDSM:UNIT=A1,TYPE=C,CNO=6;
DISPLAY-DDSM:UNIT=A1,TYPE=C,CNO=6;
H500: AMO DDSM  STARTED
CONTROLLER: 6
          TYPE: HD  SS-NO : <STDH6>  SIZE :  2860 MB (  45775*64KB) GRAN : 512
AREA: A   NAME     : A1H6A       STATUS    : P R E S E N T
          AREA-SZ: 0     MB  (2    *64KB)        A-GRAN: 512
AREA: E   NAME     : A1H6E       STATUS    : B L O C K E D  B Y  A MO
          AREA-DATA IN DATABASE AND ADMINISTRATION AREA ARE EQUAL
          CONFIGURED LOGICAL NAMES:
             :PDS:
          NO LOGICAL NAMES ACTIVATED
          AREA-SZ: 450   MB  (7200 *64KB)        A-GRAN: 4096
AREA: F  NAME     :A1H6F        STATUS    : B L O C K E D  B Y  A M O
         AREA-DATA IN DATABASE AND ADMINISTRATION AREA ARE EQUAL
         CONFIGURED LOGICAL NAMES:
             :DBDA:,:DBD:,:TMD:,:PAS:,:AMD:,:DMP:
         NO LOGICAL NAMES ACTIVATED
         AREA-SZ: 100   MB (1600 *64KB)        A-GRAN: 4096
AREA: G  NAME     : A1H6G      STATUS    : B L O C K E D  B Y  A M O
         AREA-DATA IN DATABASE AND ADMINISTRATION AREA ARE EQUAL
         CONFIGURED LOGICAL NAMES:
              :CGD:
         NO LOGICAL NAMES ACTIVATED
         AREA-SZ: 150   MB  (2400 *64KB)        A-GRAN: 4096
AREA: H  NAME     :A1H6H       STATUS    : B L O C K E D  B Y  A M O
         AREA-DATA IN DATABASE AND ADMINISTRATION AREA ARE EQUAL
         CONFIGURED LOGICAL NAMES:
              :DMS:,:DSY:
         NO LOGICAL NAMES ACTIVATED
         AREA-SZ: 70    MB  (1120 *64KB)        A-GRAN: 4096
AREA: I  NAME     :  A1H6I       STATUS    : B L O C K E D  B Y  A M O
         AREA-DATA IN DATABASE AND ADMINISTRATION AREA ARE EQUAL
         CONFIGURED LOGICAL NAMES:
              :SCR:
         NO LOGICAL NAMES ACTIVATED
         AREA-SZ: 1024  MB  (16384*64KB)        A-GRAN: 4096
AREA: J  NAME     :  A1H6J       STATUS    : B L O C K E D  B Y  A M O
         AREA-DATA IN DATABASE AND ADMINISTRATION AREA ARE EQUAL
         CONFIGURED LOGICAL NAMES:
              :GLA:
         NO LOGICAL NAMES ACTIVATED
         AREA-SZ: 450  MB  (7200 *64KB)        A-GRAN: 4096
```

```
AREA: K  NAME     :  A1H6K       STATUS    : B L O C K E D  B Y  A M O
         AREA-DATA IN DATABASE AND ADMINISTRATION AREA ARE EQUAL
         CONFIGURED LOGICAL NAMES:
              :DIAG:
         NO LOGICAL NAMES ACTIVATED
         AREA-SZ: 616  MB  (9868 *64KB)        A-GRAN: 4096

AMO-DDSM -111       DISK STATUS
DISPLAY COMPLETED;
```

```
[COPY-DDRSM:UNIT=A1,MASTERID=1,SLAVEID=6;]
H500:  AMO DDRSM STARTED
H01: WARNING: YOU ARE GOING TO OVERWRITE THE AREA/DEVICE
 <:A1H61:>
     DO YOU REALLY WANT THIS (Y/N)?
  *y

AMO-DDRSM-111       DEVICE DOUBLE RECORDING SERVER
 MODULE
COPY COMPLETED;
```

By doing this, the second RMX boot device “hicom_second_hardisk.img“ is created and can be used for RMX startup.

5) Next, take out the second boot device in Platform Portal/System/SWU Boot-Devices and confirm the action:



6) Next, perform the following actions via the Linux shell:

a) Display the existing OpenScape 4000 images (located in: `/opt/dscxl/share/`) with the following command:

```
cd /opt/dscxl/share/
ll
```

b) Compress the existing “hicom_second_harddisk.img” using bzip2:

```
bzip2 -c hicom_second_harddisk.img > copy_rmx.bz2
```

c) Transfer or copy the compressed image by running: `copy_rmx.bz2`

For example, you can use the WinSCP tool.

```
Last login: Fri Apr 21 13:03:11 2023 from 10.255.100.14
gvs35-a-coro:~ # cd /opt/dscxl/share/
gvs35-a-coro:/opt/dscxl/share # ll
total 8950612
-rw------- 1 root root         11 Jul 29  2022 .drbd_adp_P_checkfile
-rw------- 1 root root        551 Jul 29  2022 RLCNRG-CODEWORD.out
-rw-r--r-- 1 root root        362 May  5 10:47 apesg.db
lrwxrwxrwx 1 root root         43 Jan  6 00:42 hicom.img -> /opt/dscxl/share/hic
om_2021_11_09_08_36.img
-rw-rw-r-- 1 root root 3052142592 May  5 10:49 hicom_2021_11_09_08_36.img
lrwxrwxrwx 1 root root         43 Jan  6 00:42 hicom_ccap.img -> /opt/dscxl/shar
e/hicom_2021_11_09_08_36.img
lrwxrwxrwx 1 root root         42 Nov  9  2021 hicom_second.img -> /opt/dscxl/sh
are/hicom_second_harddisk.img
-rw-rw-r-- 1 root root 3052142592 Nov  9  2021 hicom_second_harddisk.img
-rw-r----- 1 root root 3052142592 Jan  6 00:42 hicom_second_harddisk_ucsu.img
drwx------ 2 root root       4096 Jul 29  2022 inventory_cbk_conf
drwx------ 2 root root      16384 Nov  9  2021 lost+found
drwx------ 3 root root       4096 Jul 29  2022 newdisk
drwxr-x--x 3 root root       4096 Apr 29 16:33 recoveryISO
-rw------- 1 root root          0 Jul 29  2022 update-new-nrg-user-passwd-VX62jO
-rw------- 1 root root          0 Jul 28  2022 update-new-nrg-user-passwd-iZ5vrz
gvs35-a-coro:/opt/dscxl/share # bzip2 -c hicom_second_harddisk.img > copy_rmx.bz
2
gvs35-a-coro:/opt/dscxl/share # ll
total 8950616
-rw------- 1 root root         11 Jul 29  2022 .drbd_adp_P_checkfile
-rw------- 1 root root        551 Jul 29  2022 RLCNRG-CODEWORD.out
-rw-r--r-- 1 root root        362 May  5 10:47 apesg.db
-rw-r----- 1 root root       2162 May  5 10:50 copy_rmx.bz2
lrwxrwxrwx 1 root root         43 Jan  6 00:42 hicom.img -> /opt/dscxl/share/hic
om_2021_11_09_08_36.img
-rw-rw-r-- 1 root root 3052142592 May  5 10:50 hicom_2021_11_09_08_36.img
lrwxrwxrwx 1 root root         43 Jan  6 00:42 hicom_ccap.img -> /opt/dscxl/shar
e/hicom_2021_11_09_08_36.img
lrwxrwxrwx 1 root root         42 Nov  9  2021 hicom_second.img -> /opt/dscxl/sh
are/hicom_second_harddisk.img
-rw-rw-r-- 1 root root 3052142592 Nov  9  2021 hicom_second_harddisk.img
-rw-r----- 1 root root 3052142592 Jan  6 00:42 hicom_second_harddisk_ucsu.img
drwx------ 2 root root       4096 Jul 29  2022 inventory_cbk_conf
drwx------ 2 root root      16384 Nov  9  2021 lost+found
drwx------ 3 root root       4096 Jul 29  2022 newdisk
drwxr-x--x 3 root root       4096 Apr 29 16:33 recoveryISO
-rw------- 1 root root          0 Jul 29  2022 update-new-nrg-user-passwd-VX62jO
-rw------- 1 root root          0 Jul 28  2022 update-new-nrg-user-passwd-iZ5vrz
```

1.1.8 Gateway or IP problems

The following gateway or IP problems can occur:

1) SoftGate related reboots (including STMIX, EntGW and vHG3530)

For such issues, you must provide SoftGate Logs collected via **WBM** > **Maintenance** > **Logs** > **Export Logs**.

INFO:

If there are SIP boards involved, you should additionally collect all SIP board logs.

---

2) HG3500 Reboots (watchdog or other exception)

For such issues, you must set full diag files (DDCLogs, event logs, etc.) via **WBM** > **Maintenance** > **Actions** > **Manual Actions** > **All Logs**.

You must additionally activate the relevant trace profile from the selection below, for the function.

Sniffer Trace* must be also provided using an external mirror port or tab, as RPCAP is not sufficient. On STMIX, `tcpdump` can be leveraged.

When SPE is in use, you must activate secure trace.

3) HG35xx hung boards (needing manual reboot to recover)

For such issues, it is recommended to ping the gateway from the command shell:

```
i
iosFdShow
inetstatShow
ipstatShow
netStackDataPoolShow
netStackSysPoolShow
ibmEmacM2StatsShow
mRouteShow
routeShow
memShow
Codatmain (2,0)
getLanRedundancyMode
bridgePortListShow
fPsShowNetPool
fPsShowStatistics
```

IMPORTANT: Always remember to exit the shell with the `logout` command.

---

4) All Issues

You must ensure that all traces are synchronized (NTP). This means that system and admin/sniffer PCs must have the same timing.

Provide a description of the scenario and all IP addresses (for signalling, on NCUI show all parameters). For 3rd party devices, you must also mention the exact type.

Provide all used LW (GWs, phones, etc.) and system versions.

Provide a trace with the profile from below each involved board type.

Use Xtracer or RPCAP for classic GWs (STMI and NCUI) and deactivate Console and File trace.

For SPE scenarios, activate SecureTrace.

5) All Fax Issues

You must ensure that all traces are synchronized (NTP). This means that system and admin/sniffer PCs must have the same timing.

Include a clear description of the scenario:

- The used IP addresses and numbers, call IDs etc.

  INFO: Providing a picture can be also useful.

- Information about fax devices involved (e.g. brand, model, etc.)
- Local fax devices settings, where this is possible
- Clear information about signalling and payload paths, when multiple hops are used
- Information about all used LW (GWs, AP1120, etc.) and system versions

Provide a trace with the profile from below each involved board type.

Use Xtracer or RPCAP for classic GWs (STMI and NCUI). For STMIX and vHGs, the 4.8 profile 4.8 is needed as well.

Include also the DSP/CTRACE of the scenario. Below you can find further instructions.

- SWU Regen
- Comparison between right and wrong traces, where this is possible
- For SPE scenarios, activate SecureTrace.

  INFO: T38 does not use SPE.

- Relevant XPR traces if XPR is used in the scenario.

Other general hints:

- Delete older traces prior to start a new trace.
- Where possible, it is recommended to provide only one scenario per trace.
- Workarounds are possible by:

  Turning on/off T38FAX (AMO CGWB)

  Turning on/off RFCFMOP (AMO CGWB)

  Toggling ECM mode (WBM Voice Gateway Payload)

1.1.8.1 HG Standard Trace Profiles

1.1.1 SIP Registration - common for subscriber and trunk (including UFIP)

- Standard trace configuration

```
SIP        9
SIP_SA     9
SIP_REG    9
EVOHFA     3
```

  Sniffer Trace*
- Full trace configuration

```
SIP         9
SIP_SA      9
SIP_REG     9
EVOHFA      9
LOCSERV     9
SSM         9
SMP         9
```

Sniffer Trace*

1.1.2 SIP-Q-Trunking - general and signalling problems (including DMC)

- Standard trace configuration

```
SIP                 9
SIP_SA              9
CNQ                 3
DSS1                0
DMC                 9
SMP                 9
```

Sniffer Trace*

- Full trace configuration

```
SIP                 9
SIP_SA              9
CNQ                 9
DSS1                9
ISDNFM              9
DMC                 9
DEVMGR              9
SMP                 9
```

Sniffer Trace*

1.1.3 SIP-Q-Trunking - payload quality and path problems (including DMC)

- Standard trace configuration

```
EVTLOG              3
SIP                 9
SIP_SA              9
MSC                 9
CNQ                 3
DSS1                0
DEVMGR              9
DMC                 9
SMP                 9
```

Sniffer Trace*

- Full trace configuration

```
EVTLOG              3
SIP                 9
SIP_SA              9
MSC                 9
ASP                 9
ASP_DSP_IOCTL       9
ASP_DSP_EVENT       9
```

```
SENTA_API          9
CNQ                9
DSS1               9
ISDNFM             9
DMC                9
DEVMGR             9
SMP                9
```

Sniffer Trace*

1.1.4 SIP-Q-Trunking - fax problems

- Standard trace configuration

```
EVTLOG             3
SIP                9
SIP_SA             9
MSC                9
ASP_FAX            9
DEVMGR             9
FMSEM              9
```

Sniffer Trace*

- Full trace configuration

```
EVTLOG             3
SIP                9
SIP_SA             9
MSC                9
ASP                9
ASP_DSP_IOCTL      9
ASP_DSP_EVENT      9
SENTA_API          9
CNQ                9
DSS1               9
ISDNFM             9
DMC                9
ASP_FAX            9
DEVMGR             9
FMSEM              9
```

Sniffer Trace*

1.2.1 SIP Subscriber - general and signalling problems (including UFIP)

- Standard trace configuration

```
EVTLOG             3
SIP                9
SIP_SA             9
CNQ                3
DSS1               3
EVOHFA             3
```

Sniffer Trace*

- Full trace configuration

```
EVTLOG             3
SIP                9
```

```
SIP_SA          9
CNQ             9
DSS1            9
ISDNFM          9
DMC             9
EVOHFA          9
SIP_REG         9
LOCSERV         9
SSM             9
SMP             9
```

Sniffer Trace*

1.2.2 SIP Subscriber - payload quality and path problems (including UFIP)

- Standard trace configuration

```
EVTLOG          3
SIP             9
SIP_SA          9
MSC             9
CNQ             3
DSS1            3
DEVMGR          9
EVOHFA          3
```

Sniffer Trace*

- Full trace configuration

```
EVTLOG          3
SIP             9
SIP_SA          9
MSC             9
ASP             9
ASP_DSP_IOCTL   9
ASP_DSP_EVENT   9
SENTA_API       9
CNQ             9
DSS1            9
ISDNFM          9
DMC             9
DEVMGR          9
EVOHFA          9
SMP             9
```

Sniffer Trace*

1.2.3 SIP Subscriber - fax problems (including UFIP)

- Standard trace configuration

```
EVTLOG          3
SIP             9
SIP_SA          9
MSC             9
ASP_FAX         9
CNQ             3
DSS1            3
DEVMGR          9
```

```
EVOHFA              3
FMSEM               9
```

Sniffer Trace*

- Full trace configuration

```
EVTLOG              3
SIP                 9
SIP_SA              9
MSC                 9
ASP                 9
ASP_DSP_IOCTL       9
ASP_DSP_EVENT       9
SENTA_API           9
ASP_FAX             9
CNQ                 9
DSS1                9
ISDNFM              9
DMC                 9
DEVMGR              9
EVOHFA              9
FMSEM               9
```

Sniffer Trace*

1.2.4 CSTA over SIP problems

- Standard trace configuration

```
LOCSERV             9
LOCSERV_QUERY       9
LOCSERV_REG         9
SIP_CICA            9
SIP_REG             9
SIP_SA              9
```

Sniffer Trace*

- Full trace configuration

```
LOCSERV             9
LOCSERV_QUERY       9
LOCSERV_REG         9
SIP_CICA            9
SIP_REG             9
SIP_SA              9
```

Sniffer Trace*

1.3 SPE Additional for SIP Subscriber and SIP/SIPQ Trunking (including UFIP)

- Standard trace configuration - additionally to unsecure scenario

```
DEVMGR              9
```

+ activate SecureTrace

+ information of SecureTrace certificate version used

- Full trace configuration - additionally to unsecure scenario

```
DEVMGR              9
```

+ activate SecureTrace

+ information of SecureTrace certificate version used

2.1.1 H323 Trunking - general and signalling problems

- Standard trace configuration

```
CNQ                 9
DSS1                9
EVTLOG              3
H323                9
H323_STACK          9
```

Sniffer Trace*

- Full trace configuration

```
CNQ                 9
DSS1                9
ISDNFM              9
DMC                 9
H323                9
H323_STACK          9
EVTLOG              3
```

Sniffer Trace*

2.1.2 H323 Trunking - payload quality and path problems

- Standard trace configuration

```
EVTLOG              3
H323                9
H323_STACK          6
MSC                 9
ASP                 9
ASP_DSP_IOCTL       9
ASP_DSP_EVENT       9
SENTA_API           9
CNQ                 3
DSS1                0
DEVMGR              9
```

Sniffer Trace*

- Full trace configuration

```
EVTLOG              3
H323                9
H323_STACK          9
SPL                 3
MSC                 9
ASP                 9
ASP_DSP_IOCTL       9
ASP_DSP_EVENT       9
SENTA_API           9
CNQ                 9
DSS1                9
ISDNFM              9
```

```
DMC                 9
DEVMGR              9
```

Sniffer Trace*

2.1.3 H323-Trunking - fax problems

- Standard trace configuration

```
EVTLOG              3
H323                9
H323_STACK          6
MSC                 9
ASP                 9
ASP_DSP_IOCTL       9
ASP_DSP_EVENT       9
SENTA_API           9
ASP_FAX             3
CNQ                 3
DSS1                0
DEVMGR              9
```

Sniffer Trace*

(Use also "All Fax Issues" above)

- Full trace configuration

```
EVTLOG              3
H323                9
H323_STACK          9
FMSEM               9
MSC                 9
ASP                 9
ASP_DSP_IOCTL       9
ASP_DSP_EVENT       9
SENTA_API           9
ASP_FAX             9
CNQ                 9
DSS1                9
ISDNFM              9
DMC                 9
DEVMGR              9
```

Sniffer Trace*

(Use also "All Fax Issues" above)

2.2.1 HFA - registration

- Standard trace configuration

```
EVTLOG              3
HFAC                6
SLMO_HFA            6
TC                  6
```

Sniffer Trace*

- Full trace configuration

```
EVTLOG              3
```

```
HFAC              6
SLMO_HFA          6
TC                6
```

Sniffer Trace*

2.2.2 HFA - general and signalling problems

- Standard trace configuration

```
EVTLOG            3
TSA               9
H323              9
H323_STACK        6
```

Sniffer Trace*

- Full trace configuration

```
EVTLOG            3
TSA               9
H323              9
H323_STACK        9
```

Sniffer Trace*

2.2.3 HFA - payload quality and path problems

- Standard trace configuration

```
EVTLOG            3
H323              9
H323_STACK        6
MSC               9
ASP               9
ASP_DSP_IOCTL     9
ASP_DSP_EVENT     9
SENTA_API         9
DEVMGR            9
```

Sniffer Trace*

- Full trace configuration

```
EVTLOG            3
H323              9
H323_STACK        9
MSC               9
ASP               9
ASP_DSP_IOCTL     9
ASP_DSP_EVENT     9
SENTA_API         9
DEVMGR            9
```

Sniffer Trace*

2.3 SPE Additional for HFA and H323 Trunking

- Standard trace configuration

  In addition to the unsecure scenario:

  + activate SecureTrace

  + information of SecureTrace certificate version used
- Full trace configuration

  In addition to the unsecure scenario:

  + activate SecureTrace

  + information of SecureTrace certificate version used

3.1 IPDA (HG3570/HG3575) - general problems/no path

- Standard trace configuration

```
EVTLOG            3
MPH               6
MCP               9
MSC               0
```

  Sniffer Trace*
- Full trace configuration

```
EVTLOG            3
MPH               9
MCP               9
MSC               9
ICC               9
```

  Sniffer Trace*

3.2 IPDA (HG3570/HG3575) - payload quality/path problems

- Standard trace configuration

```
EVTLOG            3
MPH               6
MSC               9
ASP               9
ASP_DSP_IOCTL     9
ASP_DSP_EVENT     9
```

  Sniffer Trace*
- Full trace configuration

```
EVTLOG            3
MPH               9
MCP               9
MSC               9
ASP               9
ASP_DSP_IOCTL     9
ASP_DSP_EVENT     9
```

  Sniffer Trace*

3.3 IPDA (HG3570 and HG3575) - fax problems

- Standard trace configuration

```
EVTLOG            3
MPH               6
MSC               9
ASP               9
ASP_DSP_IOCTL     9
ASP_DSP_EVENT     9
ASP_FAX           9
FMSEM             9
```

Sniffer Trace*

(Use also "All Fax Issues" above)

- Full trace configuration

```
EVTLOG            3
MPH               9
MCP               9
MSC               9
ASP               9
ASP_DSP_IOCTL     9
ASP_DSP_EVENT     9
ASP_FAX           9
FMSEM             9
```

Sniffer Trace*

(Use also "All Fax Issues" above)

4.1 WAML replacement (signalling survivability issues)

- Standard trace configuration

For NCUI : Use Profile 4.2

For STMI:

```
MSC               6
MSP_PPP_IF        9
MSP_HDLC          9
PPP_STACK_PROC    9
```

From both command shells:

```
arpShow
mRouteShow
```

From NCUI CLI:

```
show all parameters
```

Sniffer Trace*

- Full trace configuration

For NCUI : Use Profile 4.2

For STMI:

```
CNQ               9
ISDN_FM           9
SPL               9
PPP_CC            9
PPP_STACK_PROC    9
```

```
PPP_STACK_DBG_IF   9
PPPM_TBAS          9
PPPM_TSTD          9
PPPM_TEXT          9
MSC                9
MSP_PPP_IF         9
MSP_HDLC           9
```

From both command shells:

```
arpShowm
mRouteShow
```

From NCUI CLI:

```
show all parameters
```

Sniffer Trace*

4.2 Signalling survivability problems

- Standard trace configuration

```
EVTLOG             3
MMX                9
TCP_IP_CONF        9
TCPSIG             9
REMSURV            9
```

- Full trace configuration

```
EVTLOG             3
MMX                9
TCP_IP_CONF        9
TCPSIG             9
REMSURV            9
```

4.3 Problems with payload quality or/and path problems

- Standard trace configuration

  See 3.2 IPDA (HG3570/HG3575) - payload quality and path problems

- Full trace configuration

  See 3.2 IPDA (HG3570/HG3575) - payload quality and path problems

4.4 NCUI reboots after TCP timeout (ALVTIME/RESTTIME

- Standard trace configuration

```
TCPSIG             9
TCPSIG_WT          9
TCPSUV             9
TCPSUV_WT          9
TCPMOT_WT          9
MMX                9
STB                9
```

From NCUI CLI:

```
show all parameters
```

Sniffer Trace*

- Full trace configuration

```
TCPSIG              9
TCPSIG_WT           9
TCPSUV              9
TCPSUV_WT           9
TCPMOT_WT           9
MMX                 9
STB                 9
```

From NCUI CLI:

Sniffer Trace*

4.5 NCUI falls asleep

- Standard trace configuration

See Hung Boards.

- Full trace configuration

See Hung Boards.

Corrupted HSR messages - NCUI

- Standard trace configuration

```
HSR_MSG_DMP         6
```

Sniffer Trace*

(+ activate SecureTrace if encryption is used)

- Full trace configuration

```
HSR_MSG_DMP         9
```

Sniffer Trace*

(+ activate SecureTrace if encryption is used)

4.7 Corrupted HSR messages - vNCUI

- Standard trace configuration

```
hsr-message-light
```

Sniffer Trace*

(+ activate SecureTrace if encryption is used)

- Full trace configuration

```
hsr-message-dump
```

Sniffer Trace*

(+ activate SecureTrace if encryption is used)

4.8 Fax on STMIX or vHG (SoftGate)

- Standard trace configuration

```
debug-all
payload
payload-light
```

```
payload-native
```

(Use also "All Fax Issues" above)

- Full trace configuration

```
debug-all
payload
payload-light
payload-native
```

(Use also "All Fax Issues" above)

4.9 HSR instability issues/AP reboots

- Standard trace configuration

  For NCUI: Load All Logs

  For SoftGate: Export Logfiles

  Sniffer Trace* on AP side and also on HHS side (Type 2 or 4 from below)
- Full trace configuration

  For NCUI: Load All Logs

  For SoftGate: Export Logfiles

  Sniffer Trace* on AP side and also on HHS side (Type 2 or 4 from below)

1.1.8.2 Sniffer Trace

Sniffer traces can be collected in multiple ways:

1) **Type 1**: Only for classic STMI and NCUI boards

   The signalling part is collected via **RPCAP**.

   It is possible to start RPCAP via **IP Trace**, from the Assistant.

   This type of trace is useful in case of basic signalling connection issues (e.g. SIP or H323 Trunk scenarios). However, it is not useful for Payload, Fax or HSR signalling connections issues.
2) **Type 2**: Only possible on SoftGate LW boards (STMIX, SG, EntGW)

   This trace can be collected via **tcpdump** and can be limited by applying explicit port or IP filters. For more information, refer to the Linux tcpdump manual.

   This type of trace is useful for almost all types of issues, except when the customer suspects that the OpenScape 4000 appliance is the cause of the issue or does not agree with the diagnosis results. In such cases, a mirror port sniffer trace should be collected.

   Example:

   (no size limit for captured frames, no hostname resolving, write locally up to 5 files of 20 MB)

```
nohup tcpdump -i <interfacetobetraced> -ns 0 -w /var/
tmp/sniffertrace -C 20 -W 5 > /dev/null 2>&1 &
```

To stop the trace, use:

```
pkill tcpdump
```

INFO: Remove the trace files after download.

3) **Type 3**: Only possible on SoftGate LW boards (STMIX, SG, EntGW)

   To collect this trace, use **Internal LAN Capture Control** in the **WBM** area of the SG.

   This type of trace is useful for almost all types of issues, except when service or support outside of OpenScape 4000 development needs to check the trace. In such cases, **tcpdump** is recommended instead.

4) **Type 4**: Possible on all boards

   Mirror port or **Network Test Access Point (TAP)** sniffer traces can be collected outside OpenScape 4000 .

   This type of trace is useful for almost all types of issues, except when the relevant messages are truncated or a capture filter has removed relevant information.

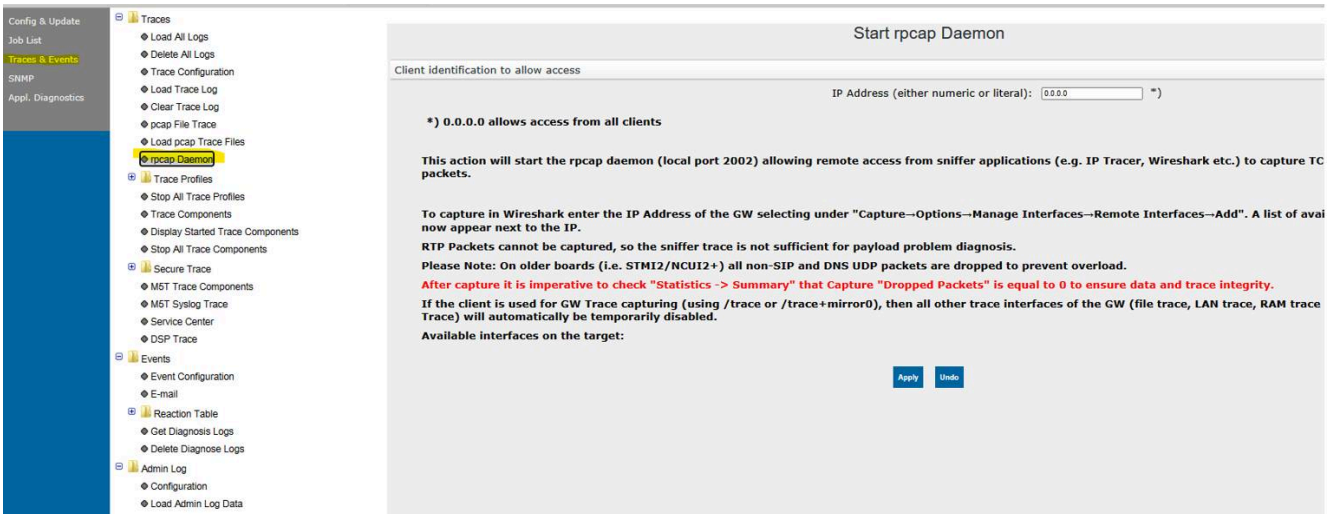
1.1.8.3 DSP Trace

This trace can only be collected for classic boards.

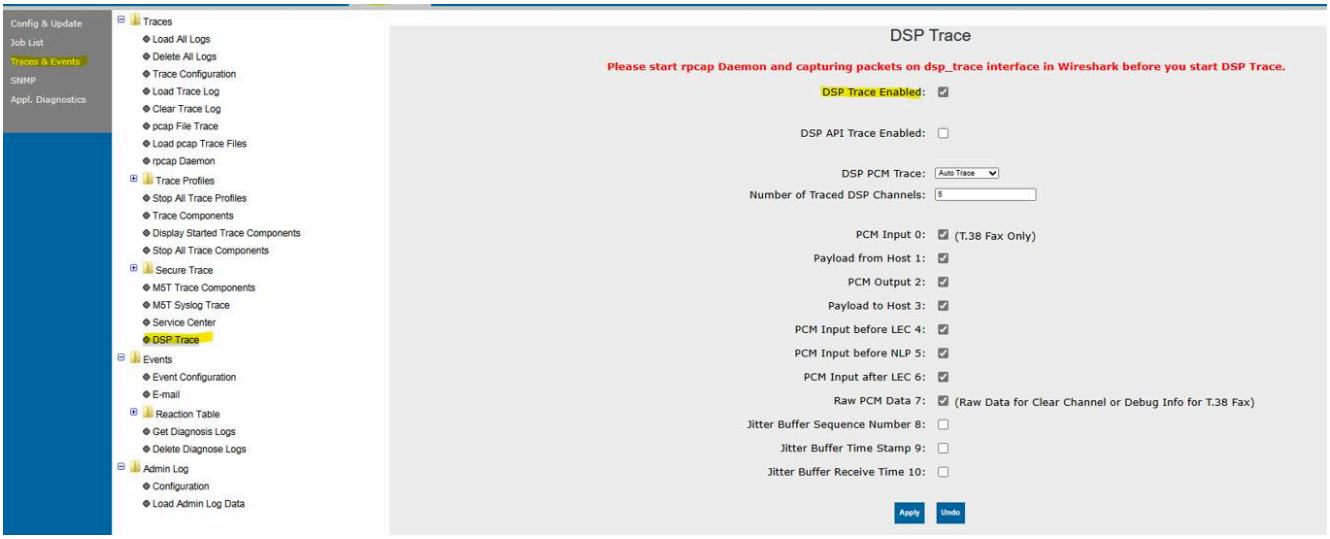
Follow the steps below to collect DSP traces:

Step by Step

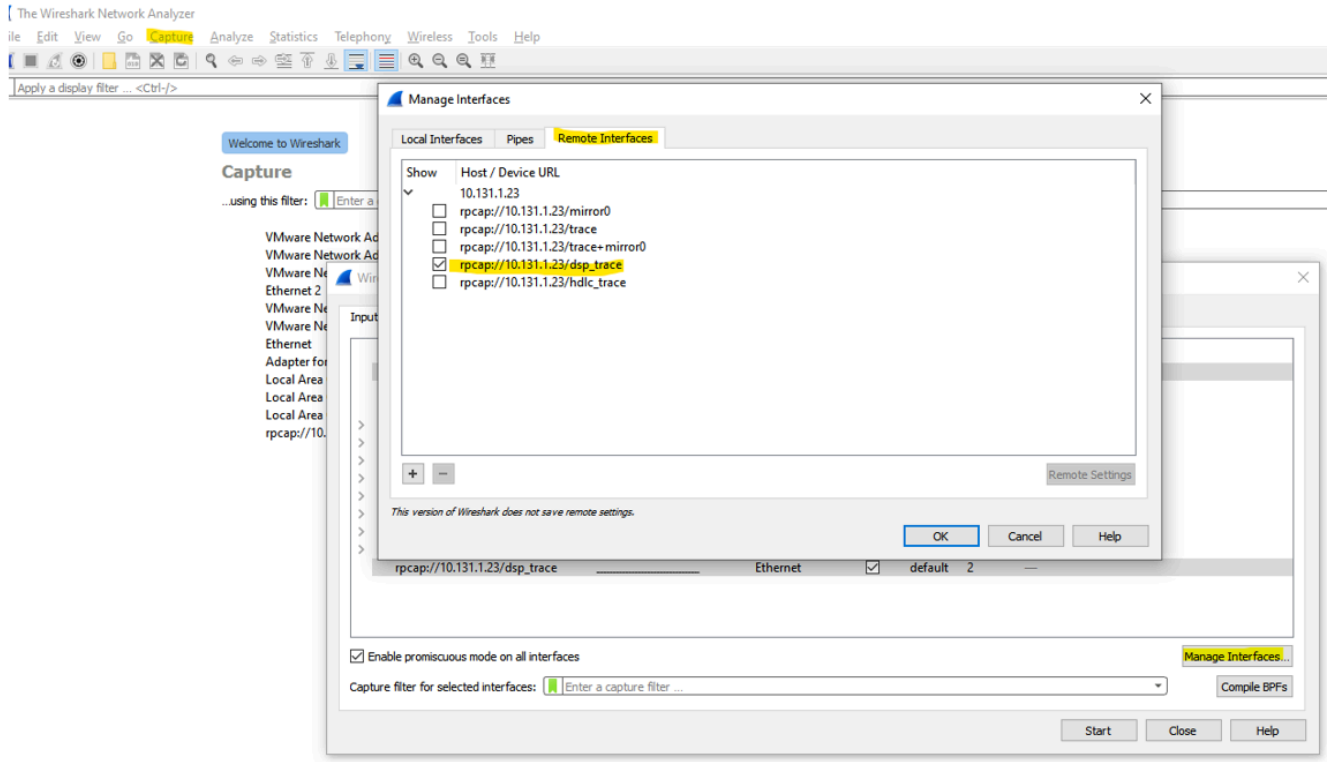
1) Activate **RPCAP** in HG, by navigating to **WBM** > **Maintenance** > **Traces** > **rpcap Daemon**:



2) Activate **DSP Trace** in HG, by navigating to **WBM** > **Maintenance** > **Traces** > **DSP Traces**:

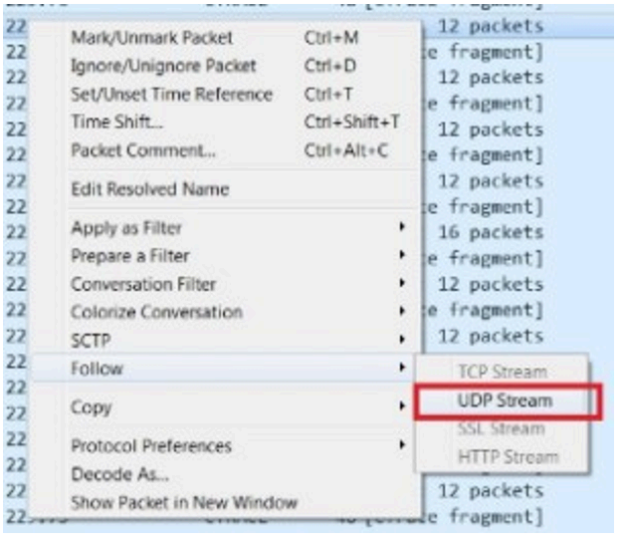


3) Open the Wireshark took and navigate to **Capture** > **Manage Interfaces ...** > **Remote Interfaces**, and select the interface for **dsp_trace**:



4) Save the output:

a) Follow the UDP Stream:



b) Save as RAW data.

1.1.8.4 CTrace

CTrace can be collected from STMIX or vHG boards.

IMPORTANT: You must restore the original trace settings after collecting the trace.

Follow the steps below to activate the CTrace on SG or STMIX:

Step by Step

1) Navigate to `/opt/soco/config/ims` and open the `imsnative.conf` file for editing.

2) Change the following lines:

```
# Properties for FaxProcessor
# fax.ctrace.enable
# fax.ctrace.location=pcmIn,pcmOut,payloadFromLAN,payloadToLAN,debugInformation
```

to

```
# Properties for FaxProcessor
fax.ctrace.enable
fax.ctrace.location=pcmIn,pcmOut,payloadFromLAN,payloadToLAN,debugInformation
```

3) Change the following line:

```
#ctrace.file.name=/tmp/CTraceFile.bin
```

to

```
ctrace.file.name=/tmp/CTraceFile.bin
```

1.1.9 AP1120 or Mediatrix GW problems

IMPORTANT: The AP1120 reached end of support on 2019.04.29.

No other Mediatrix GWs are handled by OpenScape 4000 Support. The following data is only for reference.

For issues related to AP1120 or Mediatrix, the following requirements are necessary:

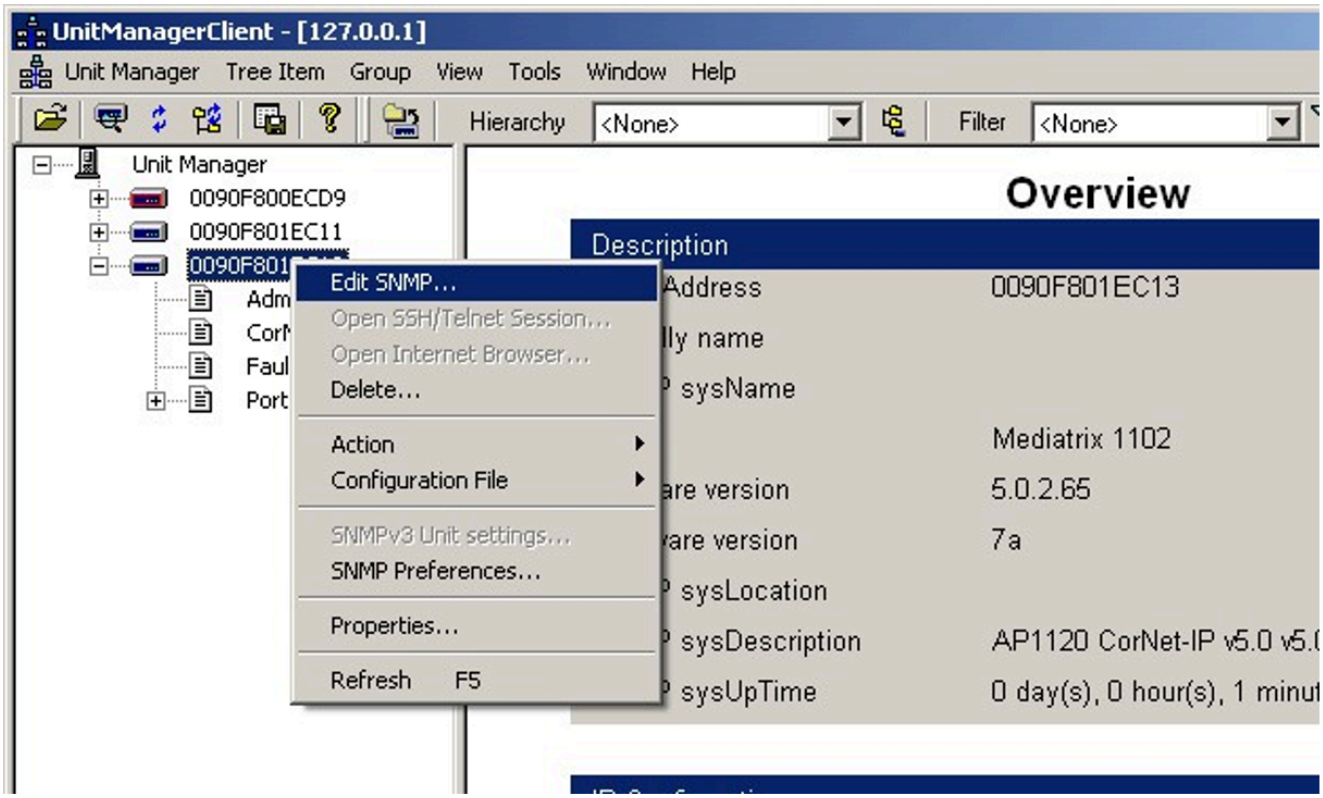
- A detailed description of scenario settings (codec, T.38, RFC, DMC, SPE etc.)
- A picture of the scenario
- The configuration file of the Mediatrix device
- PCM trace
- syslog trace (Debug level)
- Wireshark or Sniffer trace (including PCM and syslog)
- The LW version of the Mediatrix device
- The RMX version of the system and the GW LW version

1.1.9.1 How to get the configuration file of a Mediatrix device

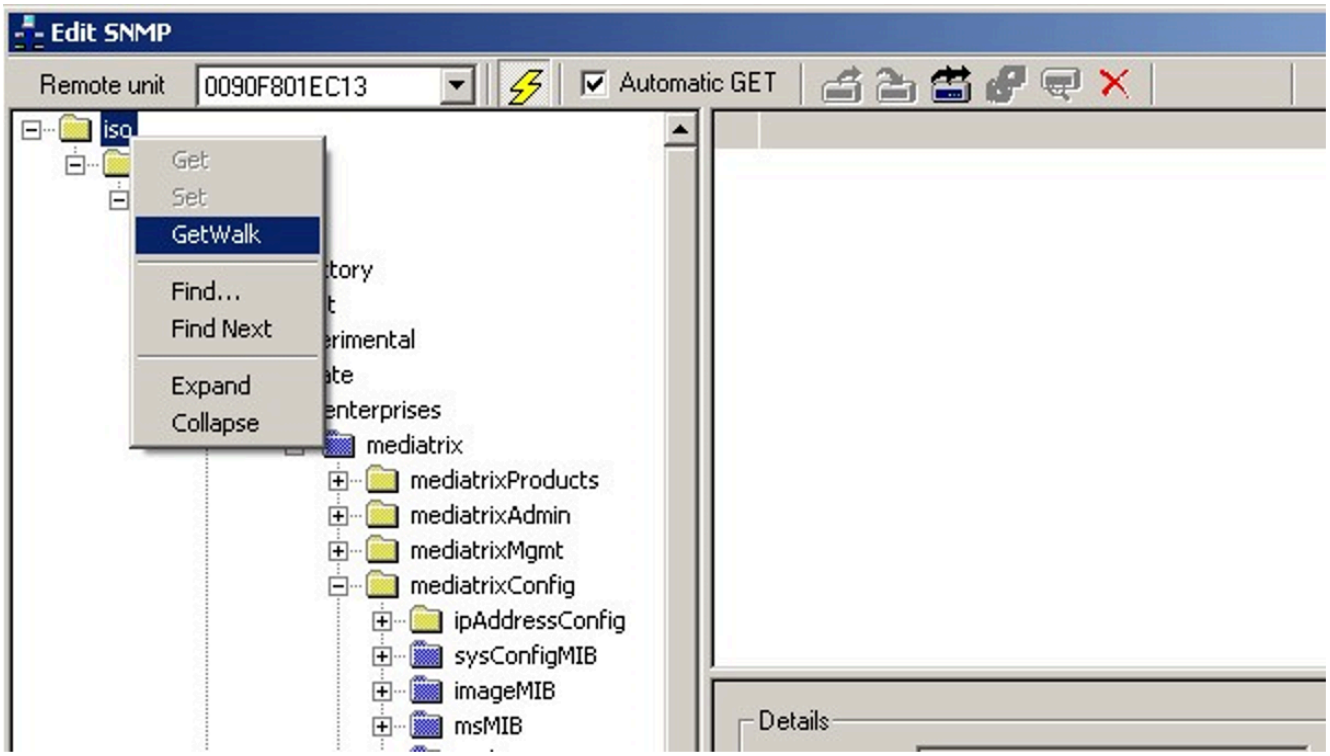
Follow the steps below to obtain the configuration file of a Mediatrix device:

Step by Step

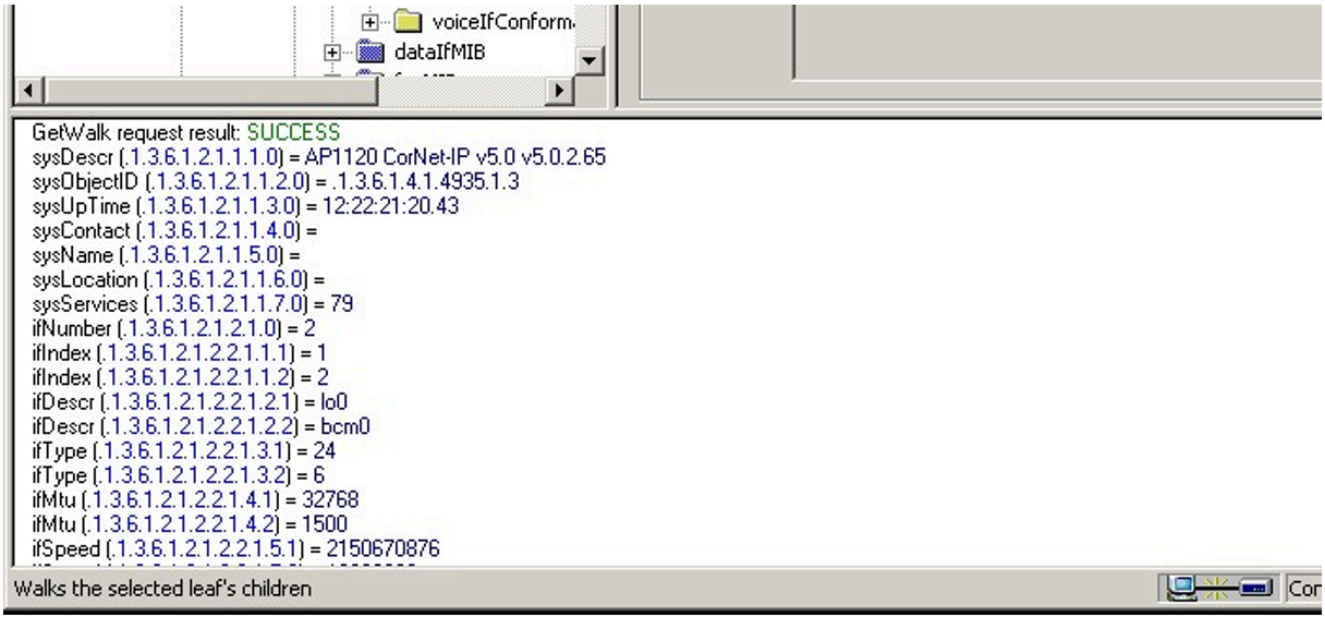
1) Open **Unit Manager Network** and right-click on the desired device (usually identified by the MAC address), then select **Edit SNMP**.



2) On the **Edit SNMP** window, right-click on **ISO** and click **GetWalk**.



The configuration takes several minutes to complete. Once it is completed, the configuration is displayed at the bottom of the window.



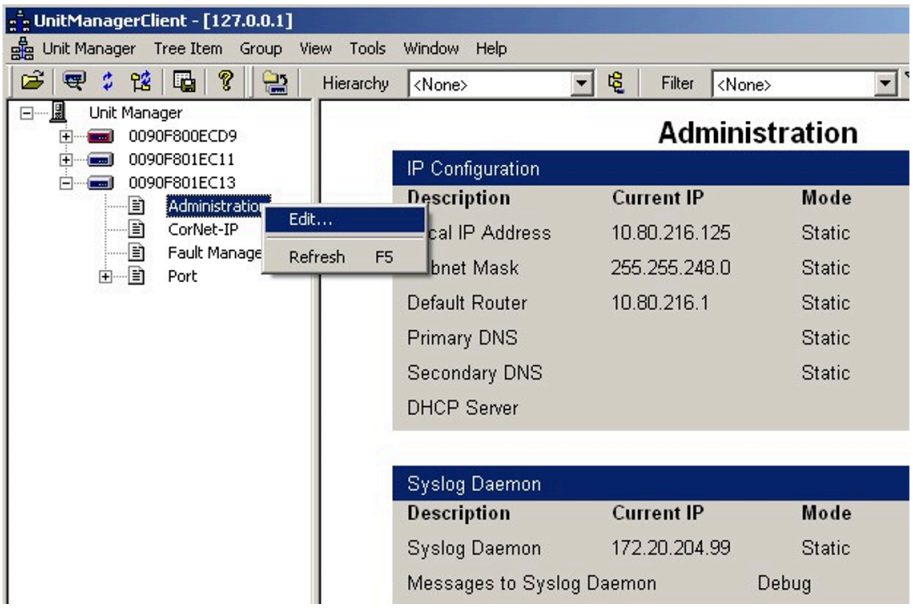
3) Copy the complete configuration and paste it to a text file.

1.1.9.2 How to switch Syslog trace on

Follow the steps below to obtain the configuration file of a Mediatrix device:

Step by Step

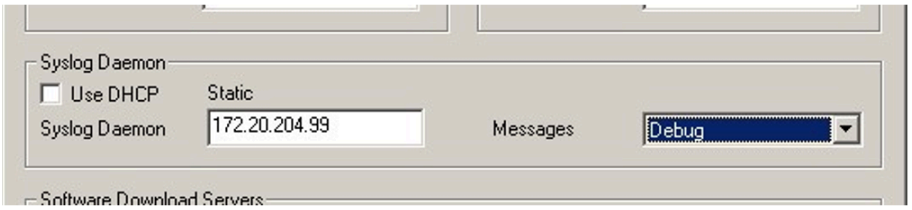
1) Open **Unit Manager Network** and right-click on **Administration** > **Edit**.



A new window opens.

2) Locate the **Syslog Daemon** area and select the **Debug** level of syslog for **Messages**.

- Enter the IP address of the PC where Wireshark is running in the **Syslog Daemon** field.
- Select the **Debug** syslog level from the **Messages** drop-down menu.



3) Reboot the device for the changes to take effect.

The syslog messages are captured via Wireshark.

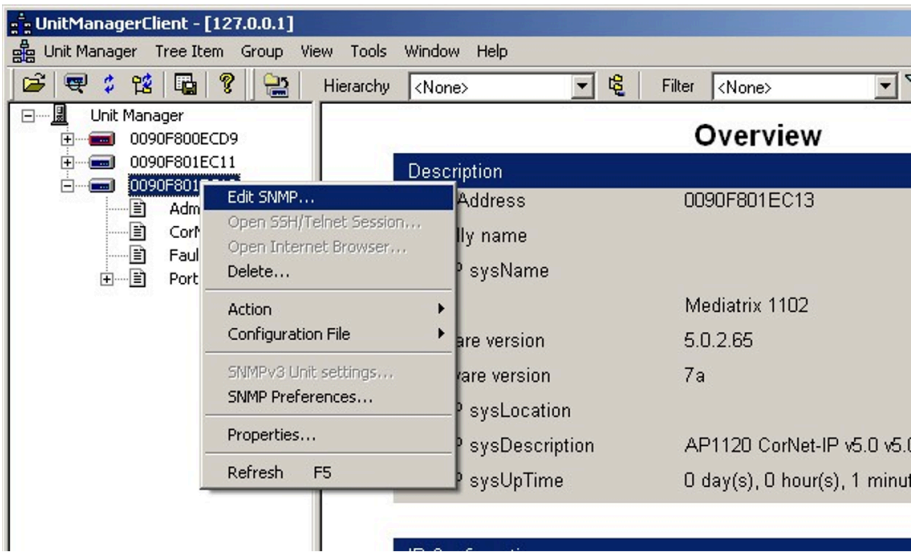
NOTICE: Keep in mind that Syslog and PCM messages generate high network traffic. Therefore, after retesting an issue, switch it off and reboot the device again.

1.1.9.3 How to collect a PCM trace

Follow the steps below to collect a PCM trace:

Step by Step

1) Open **Unit Manager Network** and right-click on the desired device (usually identified by the MAC address), then select **Edit SNMP**.



A new window opens.

2) Right-click on **iso** in the left-top corner, then click **Find**. Locate the following parameters:
   - **mxDebugPCMCaptureEnable** – It must be set to **Enable**.
   - **mxDebugPcmCpatureIpAdress** – You must set the IP address of PC where Wireshark is running.
3) Reboot the device for the changes to take effect.

PCM messages are captured via Wireshark.

NOTICE: Keep in mind that Syslog and PCM messages generate high network traffic. Therefore, after retesting an issue, switch it off and reboot the device again.

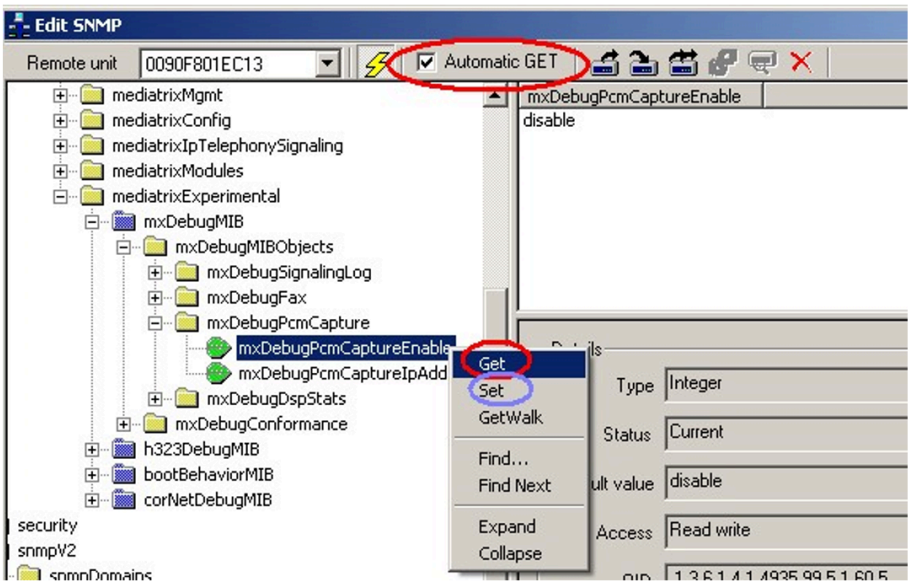
1.1.9.4 How to change parameters in Edit SNMP window

Follow the steps below to change parameters in the **Edit SNMP** window:

Step by Step

1) Locate the parameter you want to change, then right-click on it and select **Get** to view the current value of the parameter.

   Alternatively, you can use the **Automatic GET** option.



2) Change the value of the parameter in the top-right part of the window, then click **Set**.

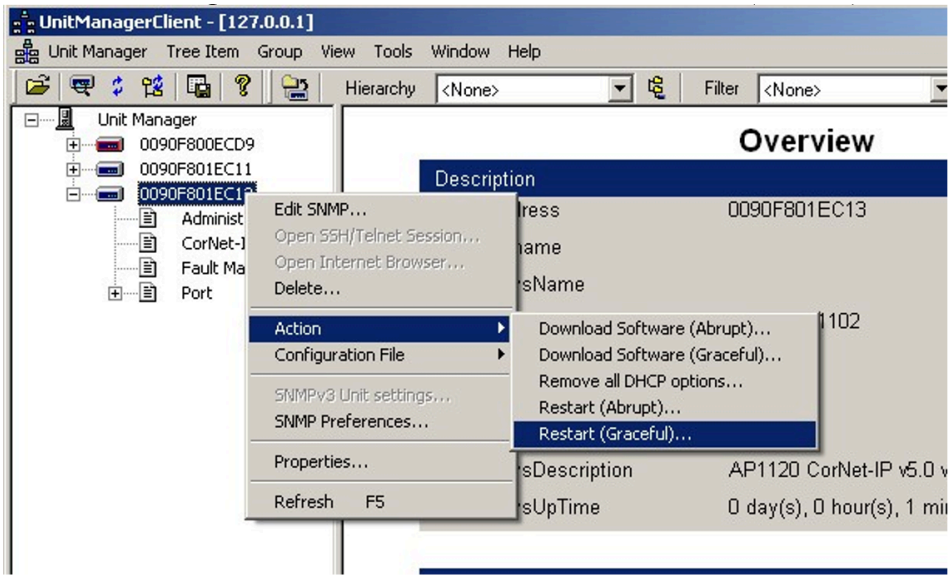
The value of the selected parameter is updated.

1.1.9.5 How to restart the Mediatrix device

Follow the steps below to restart the Mediatrix device:

Step by Step

Open **Unit Manager Network** and right-click on the desired device (usually identified by the MAC address), then select **Action** > **Restart (Graceful)**.



The device selected is restarted.

1.1.10 Security and vulnerability issues

The first step is to ensure that all requirements included in the *OpenScape 4000 V10 and Affiliated Products Security Checklist, Planning Guide* have been followed for the OpenScape 4000 version in use. This step can eliminate numerous reports.

Generally, it is a good practice to ensure that your system uses the most recent Minor/Fix Release, with the corresponding HotFixes as they contain the latest fixes against reported security vulnerabilities.

After performing the above checks, any outstanding security vulnerability issues can be reported via the standard ticket process. However, only **one** vulnerability issue can be raised per ticket. It is not allowed to report multiple issues via the same ticket (e.g. sending only a scan report).

Problem Ticket **Vulnerability Intelligence Process** (VIP) reports require:

- Include as many details as possible:
  - The name and version of the Unify Product where the vulnerability has been identified
  - The fix/hot fixes releases and patches installed
  - The vulnerability type (e.g. SQL injection, cross-site scripting vulnerability, privilege escalation, buffer or integer overflow)
  - Any configuration settings that might have impact on the vulnerability or are relevant to reproduce flows
  - Instructions on how to reproduce the flaw (including the tools used, which IP belongs to what OS/component etc.)
  - Your exploit code, if available.
  - Alternatively, the estimation on how the vulnerability could be exploited.

For more information about the Vulnerability Intelligence Process (VIP), see https://unify.com/en/support/security-advisories.

1.2 RMX Traces

Starting with OpenScape 4000 V10, permanent RMX traces are running.

If specific traces are needed, the permanent tracing must be stopped first, using the following commands:

```
exec-tracs:bp;
permtr,poff;
end;
```

Then, the necessary traces can be started using the procedures described in this chapter.

If no specific trace is running, the permanent tracing will start automatically after 5 minutes.

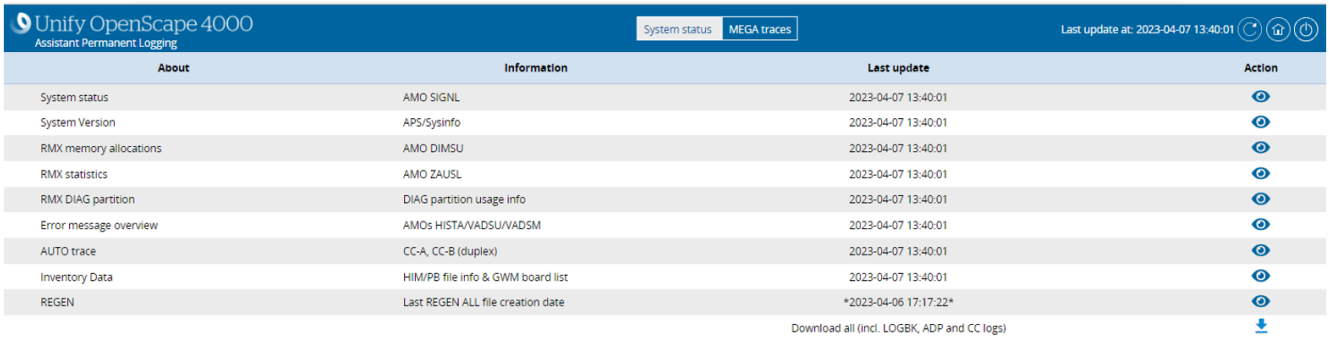
A permanent logging feature is also implemented in the Assistant.

Permanent logging

This tool is available in the Assistant, by navigating to **Expert Mode** > **Permanent Logging**.

It can be used for RMX troubleshooting and it has two main tabs:

- **System status**: displays system version, RMX memory allocation, RMX statistics, RMX DIAG partition, Error message overview, AUTO trace, Inventory Data, REGEN



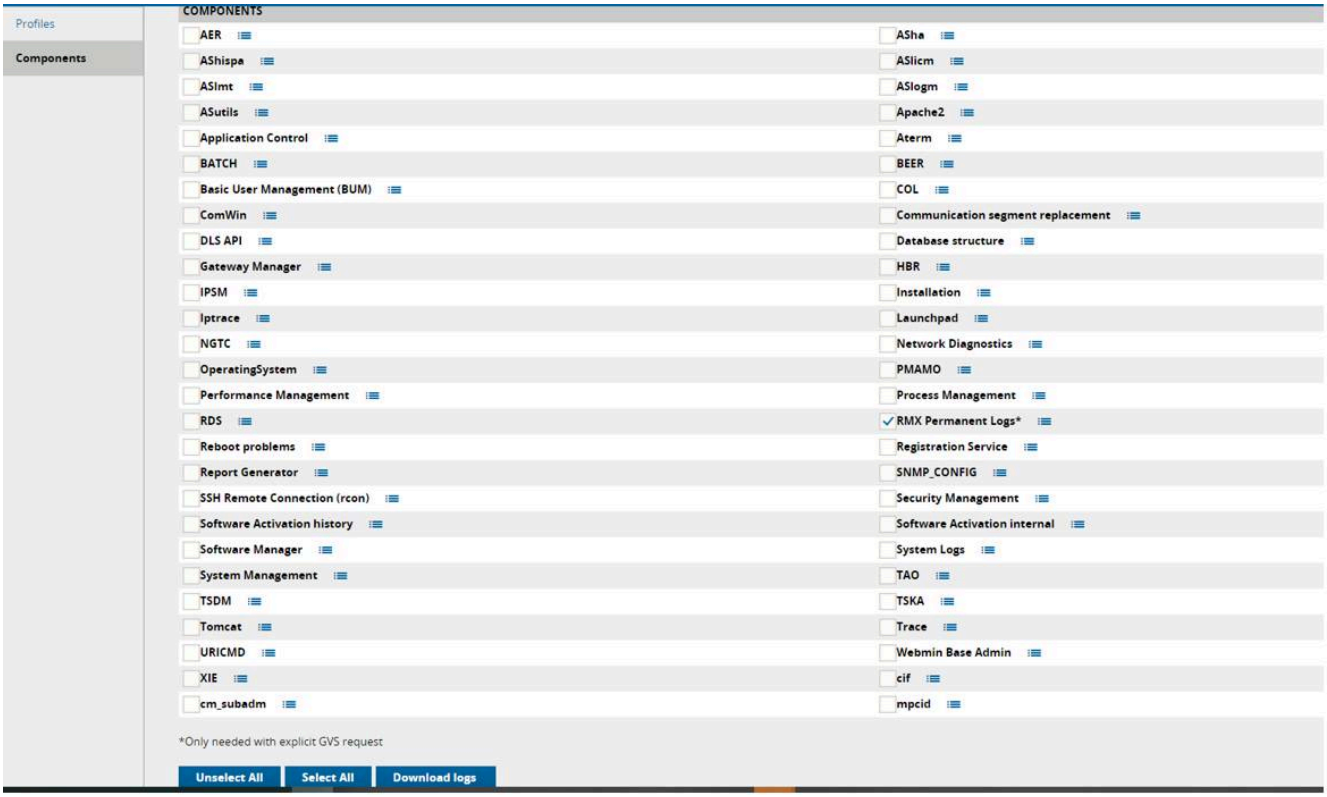
About	Information	Last update	Action
System status	AMO SIGNL	2023-04-07 13:40:01	
System Version	APS/Sysinfo	2023-04-07 13:40:01	
RMX memory allocations	AMO DIMSU	2023-04-07 13:40:01	
RMX statistics	AMO ZAUSL	2023-04-07 13:40:01	
RMX DIAG partition	DIAG partition usage info	2023-04-07 13:40:01	
Error message overview	AMOs HISTA/VADSU/VADSM	2023-04-07 13:40:01	
AUTO trace	CC-A, CC-B (duplex)	2023-04-07 13:40:01	
Inventory Data	HIM/PB file info & GWM board list	2023-04-07 13:40:01	
REGEN	Last REGEN ALL file creation date	*2023-04-06 17:17:22*	
		Download all (incl. LOGBK, ADP and CC logs)	

- **MEGA Traces**: displays a table with the name, block range, time stamps, missing messages and collecting folder for every MEGA trace (generated by the permanent tracing task in RMX) copied from RMX.

  The GUI also presents a download button allowing the individual download of each MEGA trace file.

Name	Block Range	Start Date	End Date	Missing Messages	Collecting Folder	Trace	Hista
MEGA76B05	1-200	2023-04-07 12:58:56	*Still running!*	NO	N/A		
MEGA69A00	1-200	2023-04-02 13:39:09	*Still running!*	NO	N/A		
MEGA76B04	801-1000	2023-04-07 08:50:46	2023-04-07 12:56:52	NO	2023-04-07_131001		
MEGA76B03	601-800	2023-04-07 04:40:30	2023-04-07 08:50:04	NO	2023-04-07_091001		
MEGA76B02	401-600	2023-04-07 00:34:05	2023-04-07 04:39:48	NO	2023-04-07_044001		
MEGA76B01	201-400	2023-04-06 20:24:10	2023-04-07 00:33:22	NO	2023-04-07_004002		
MEGA76B00	1-200	2023-04-06 16:17:24	2023-04-06 20:23:28	NO	2023-04-06_204001		
MEGA75B01	201 -235	2023-04-06 15:16:20	2023-04-06 15:59:33	NO	2023-04-06_161002		
MEGA75B00	1-200	2023-04-06 11:09:21	2023-04-06 15:15:41	NO	2023-04-06_154001		
MEGA74B04	801 -853	2023-04-06 09:51:25	2023-04-06 10:57:13	NO	2023-04-06_111002		

All the data and logbk presented above can be also downloaded from the **Assistant Trace Download** area. You need to navigate to the **Components** tab, then enable the **RMX Permanent Logs*** option.



Standard trace files

HD Trace 8 is generally sufficient to capture most types of errors.

There are several predefined trace profiles included in every release under `:DIAG:TRCCONF`, on the Hard Disk. With the `display,trcconf;` command you can see a list of the trace profiles. Next to the index file name, there is a short description and the corresponding AMO DIAGS switches contained in the file:

TRACE NAME	DESCRIPTION AND ACTIVATED DIAGS SWITCHES IN FILE
1	GVS TRACE1 FOR REPRODUCIBLE FAULTS CP:14
2	GVS TRACE1 WITH ACL FOR REPRODUCIBLE FAULTS CP:14
3	GVS TRACE2 FOR HIGH TRAFFIC CP:14
4	GVS TRACE2 WITH ACL FOR HIGH TRAFFIC CP:14
5	GVS TRACE3 FOR PATH PROBLEMS

	CP:14 DH:03 DB:03
6	GVS TRACE3 WITH ACL FOR PATH PROBLEMS CP:14 DH:03 DB:03
7	ISDN MESSAGES ONLY (TRACE FOR SERVICE) NONE
8	GCS/GVS GENERAL TRACE TO CAPTURE MOST TYPES OF PROBLEM CP:14 DH:03 DB:03,10 CP2:02,04
9	GVS CDR GENERAL TRACE FOR REPRODUCIBLE FAULTS CP:14 CDR:10,11
10	GVS CDR TRACE FOR CHARGE CALCULATION PROBLEMS CP:14 CDR:10,11,12
11	GVS CDR HIGH TRAFFIC (INCLUDING CHARGE CALCULATION) CP:14 CDR:10,11,12
12	GVS CDR TRACE FOR HUNG COSTI BUFFER ISSUES CP:14 CDR:10,11,15
13	DEVELOPMENT PROFILE FOR DEP-DC ISSUES NONE
14	DEVELOPMENT PROFILE FOR DEP-PIT ISSUES NONE

To activate one of these traces, use the following command in AMO TRACS:

`copy,hd-tab,`**`X`**` ,allstd,y;`

where:

- **x** is the Trace Name from the table, with values from 1 upwards.
- The `allstd` parameter specifies that all standard trace points should be loaded (meaning CP, PP, SD and RCV).
- y stands for "yes" and specifies that the corresponding DIAGS switches should also be loaded automatically.

The trace still needs to be activated afterwards via the `on` command, as usual.

IMPORTANT: Traces should be activated in the DIAG area of the HD.

Always verify there is sufficient space on the disk before the activation. You can do this with the `DIS-DDSM:A1,HD,1;` command.

Further hints:

- DIAGS switches can also be reset to default in AMO TRACS using the `res,diags;` command.
- Each RMX HotFix activation will check for the presence of these files. If for some reason they have been removed, the RMX HF will update the `:DIAG:`

area again with the missing files. Additionally the AMO TRACS command `copy,trcconf;` will also restore the missing files.

IMPORTANT: Starting with OpenScape 4000 V10, Permanent Tracing has been introduced, where RMX Trace Profile 8 runs by default. The trace files can be accessed from the OpenScape 4000 Assistant, via WBM, under Expert Mode > Permanent Logging.

Megatrace

The **Megatrace** feature is also available in AMO TRACS.

Multiple files can be used on the HD for tracing (e.g. 10 files, each with 200 blocks). This enables the tracing to run for a longer time when needed which might be useful in diagnosis.

Usage example: `on,hd,:DIAG:trace,B-F,y,y;`

where `F` is the number of files to be written with the specified number of blocks B

IMPORTANT: Traces should be activated in the DIAG area of the HD.

Always verify there is sufficient space on the disk before the activation. You can do this with the `DIS-DDSM:A1,HD,1;` command.

IMPORTANT:

Whenever escalating MEGATRACE files to the OpenScaoe 4000 Support, a `DISPLAY,*;` from AMO TRACS should also be sent as a .txt file.

Trace file size calculation

Traces files should be made to the `:DIAG:` partition only.

A block has 62.5k (62,500) bytes. For a 200 block file, it will be 200 x 62,500 = 12.5 MB (12,500,000).

You should never use all of the free blocks. It is recommended to calculate trace file size based on a maximum of 580 MB free space, even though the partition size is actually 616 MB from V6. This allows space for the other functions (e.g. Standard Trace files and RMX HotFix activation, backup of previous AMOs to the RV directory).

As an example (using 580 MB as a guideline), 580 MB divided by 12.5 MB would allow just over 46 files 200 with blocks (580/12.5=46.4).

The time period captured in the trace files will naturally depend on the traffic/ load of the system.

An example of a megatrace activation using 30 files with 200 blocks (which would use 375MB) would be the following:
`:on,hd,":DIAG:<filename>",200-30,y,y;`

AMO TRACS will also calculate the available space and adjust the file activation accordingly. In such cases, a H63 AMO hint will be displayed with any calculation correction needed.

1.3 Enhancing the traces

1.3.1 User address stop

To stop on a user address (UA), the standard traces can simply be extend with an additional stop condition in group 1. The UA must be substituted as **AA BB :CC DD**.

```
selmsg,stop,g1,cd1,dest,40;      /* TASK FA
selmsg,stop,g1,cd2,byte,11,DD;       /* UA Offset LowByte
selmsg,stop,g1,cd3,byte,12,CC;       /* UA Offset HighByte
selmsg,stop,g1,cd4,byte,13,BB;       /* UA Selector LowByte
selmsg,stop,g1,cd5,byte,14,AA;             /* UA Selector
 HighByte
```

When a fault is signalled, it is mandatory to send the HISTA file with the error messages leading up to the fault. Often, an error message can be a later reaction from an earlier fault. However, it is more difficult and time consuming to diagnose the fault when only the error message from the fault trace is sent.

1.3.2 Error messages/FM stop

To stop on an error message (i.e. Fxxxx number), you can extend the standard traces with an additional stop condition:

```
selmsg,stop,g1,cd1,dest,54;              /* TASK DEP
selmsg,stop,g1,cd2,ev,xx;          /* Type of Error
selmsg,stop,g1,cd3,sevt,yy;        /* Fxxxx Number
```

The values for **xx** and **yy** must be first calculated from the Error Header required for the stop. Here is an example of using an ADVISORY message:

```
F4066 M8 N0305 NO ACT   BPA   CP       ADVISORY
```

It is also possible to find **xx** from the table output of the `DIS-SIGNL:ALL;` command:

```
+-------------------------------------------------------------------|
|   NAME   |VAL.||   NAME   |VAL.||   NAME   |VAL.||   NAME   |VAL.|
+----------|----||----------|----||----------|----||----------|----+
| CG       | 0E || CHACOM   | 36 || CIR      | 22 || CMS      | 27 |
| CONF     | 1F || CP       | 0B || CPMSG    | 05 || DB       | 0A |
```

The **CP** value displayed under the **VAL** column is then substituted by **xx**. Next, the sub-event can be found using the `DIS-SIGNL:EVT,<NAME>,SEV;` command:

```
DIS-SIGNL:EVT,CP,SEV;
```

```
+-------------------------------------------------------------------------+
| SIGNALLING MESSAGES OF MESSAGE CLASS:                CP                 |
+------+-------+--------+-----+--------------------+--------------------+
| F-NO |  MID  | OUTPUT | PRI |         ASD        |         CSD        |
+------+-------+--------+-----+--------------------+--------------------+
|   33 | F4065 |  FREE  |  M4 | DPT1 DPT3 DPT4 MAP | DPT1 DPT3 DPT4 MAP |
|   34 | F4066 |  FREE  |  M4 | DPT1 DPT3 DPT4 MAP | DPT1 DPT3 DPT4 MAP |
```

You must further locate the F number (**F4066**) under the column **MID**. Next to it on the left, the **F-NO** is displayed, which must be substituted by **yy**, once the first has been converted into HEX (i.e. **34**= **22**H). Finally, the complete example is available below:

```
selmsg,rcv,g3,cd1,dest,54;
selmsg,rcv,g3,cd2,ev,0B;
selmsg,rcv,g3,cd3,sevt,22;
selmsg,stop,g3,cd1,dest,54;          /* TASK DEP
selmsg,stop,g3,cd2,ev,0B;      /* CP (Type of Error)
selmsg,stop,g3,cd3,sevt,22;    /* F4066
```

1.3.3 Network-wide trace stop

Sometimes, it is required to activate a trace on more than one system (e.g. to localise a half-path connection happening across a network). In such cases, the normal **stop** condition must be replaced with a **stopall** condition. Additionally, the **netstop** command must be entered in AMO TRACS, containing the (P)NODECD from AMO ZAND of the partner switch(es), where the trace should also be stopped (the routing of this value must already be configured for features such as Route Optimisation to work correctly).

```
selmsg,stopall,g1,cd1,byte,…;    /* Normal stop condition,
selmsg,stopall,g1,cd2,byte,…;    /* but replaced with
 stopall
netstop,cornet,l1,xxx;      /* (P)NODECD of other switch
```

You can enter more than one **netstop** condition to stop the trace in up to eight different nodes. However, the network-wide trace stop condition is limited to only Cornet-NQ trunks. **For the Trace to be stopped correctly, `FLAGTR,ON;` must be set in partner systems.**

1.3.4 F5749 LW request (HISTA from HG35xx boards)

Sometimes a F5749 LW request message is signalled. In such cases, it is necessary to perform a trace stop on the additional ASCII information. The ASCII information starts at **byte 11** in FA and can simply be modified according to the examples below, using **Character Map**, under **System Tools** on Windows.

In such cases, the “TRACE 3 (STANDARD PATH PROBLEM TRACE)” should be modified with the relevant trace stop.

e.g. for `TSA ERR0R;`

```
selmsg,stop,g1,cd1,dest,40;
selmsg,stop,g1,cd2,ev,1A;              /* BOARD
```

```
selmsg,stop,g1,cd3,sevt,22;      /* LW Request
selmsg,stop,g1,cd4,byte,11,54;   /* ASCII "T"
selmsg,stop,g1,cd5,byte,12,53;   /* ASCII "S"
selmsg,stop,g1,cd6,byte,13,41;   /* ASCII "A"
selmsg,stop,g1,cd7,byte,15,45;   /* ASCII "E"
selmsg,stop,g1,cd8,byte,16,52;   /* ASCII "R"
```

e.g. for `ICC;`

```
selmsg,stop,g1,cd1,dest,40;
selmsg,stop,g1,cd2,ev,1A;          /* BOARD
selmsg,stop,g1,cd3,sevt,22;   /* LW Request
selmsg,stop,g1,cd4,byte,11,49;   /* ASCII "I"
selmsg,stop,g1,cd5,byte,12,43;   /* ASCII "C"
selmsg,stop,g1,cd6,byte,13,43;   /* ASCII "C"
```

1.3.5 Path and cross talk problems (TDM, HFA, IPDA)

In such cases, use the “TRACE 3 (STANDARD PATH PROBLEM TRACE)” file.

IMPORTANT: Path switching problems should always be traced with a minimum of 1000 blocks.

1.3.6 Dynamic overload and watchdog problems (F4456/F3151)

Prior to any ticket escalation (especially in case of system outages or instability issues), the VM configuration/usage must be checked to ensure it is correct and it matches the official requirements documented th *OpenScape Solution Set V10, OpenScape Virtual Machine Resourcing and Configuration Guide*. This involves checking configuration reservations (e.g. CPU reservations, CPU shares etc.) and verifying whether snapshots have been made or were present during the reported outage period(s).

The traces provided for Watchdog restarts are often not sufficient for diagnosis. For example, the AUTOTR does not provide enough history for the complete scenario (e.g. only the loop leading up to the Watchdog is present OR the trace stop is not present in the HD file, because the restart happened under high load). When `ENDE` is not present in the HD file, the trace buffer from AMO TRACS should also be displayed and sent.

When a Watchdog issue is signalled together with a Dynamic Overload, you must ensure that the trace stop has been modified to trigger on the **F4456** error message in oder for the scenario to be captured correctly (e.g. the trace will stop before the load is too high).

The following trace stop should be activated: a stop with **DEST=54** for **F4456**.

The additional DIAGS switch can also be activated for additional HISTA output:

```
CHA-DIAGS:COMP=LOADDISP,LOAD=ON,SEG7=OFF,ZAUSL=ON,BASE=NONE,CONT=YES;
selmsg,rcv,g2,cd1,dest,40;
selmsg,rcv,g2,cd2,src,40;
selmsg,stop,g2,cd2,src,40;
selmsg,stop,g2,cd3,ev,2a;  /* INTERNAL 1,5 sec. TIMER
```

```
selmsg,stop,g2,cd4,sevt,01;       /* OVERLOAD START
```

After trace stop, the binary trace file, HISTA and a `DIS-ZAUSL:BP;` should be executed.

IMPORTANT: You must deactivate the DIAGS switch after tracing to prevent HISTA flooding.

1.3.7 VECO problems

In case VECO errors occur, it is important to increase the VECO cycle speed. This procedure is dependant on the type of VECO.

```
CHA-DIAGS:COMP=VECO,S00=ON;
/* Increase VECO frequency
```

For F4427 only:

```
CHA-CTIME:TYPESWU=VECOTIME,CBMNXTBD=3 ;
/* Increase IPDA VECO task speed
```

For VECO problems, the additional diagnosis switches are available to trace the seizure and release the specific resources:

```
CHA-DIAGS:COMP=VECO,S12=ON;  /* SIU RESOURCES SEIZURE AND
 RELEASE

CHA-DIAGS:COMP=VECO,S13=ON;  /* LINE (TSL) AND OPTISET B-
CHANNEL
/* SEIZURE AND RELEASE

CHA-DIAGS:COMP=VECO,S14=ON;  /* CONFERENCE SEIZURE AND
 RELEASE

CHA-DIAGS:COMP=VECO,S15=ON;  /* CPB SEIZURE AND RELEASE
```

1.3.8 Save F43xx and F47xx errors

When **RECOVERY (REC)/SAVE ERROR** problems are signalled (e.g. F43xx & 47xx errors), it is important to include additional save commands in the trace. These commands can be activated with the following AMO DIAGS switch:

```
CHA-DIAGS:COMP=CP2,S00=ON;
```

1.3.9 Board highway test (F5355, F5877, F5878 and F5879)

With board highway tests, the AMO-DIAGS switch for activating path switching messages is also required:

`CHA-DIAGS:COMP=DH,S03=ON;`

The traces can then be enhanced to stop on the relevant error message. A `DIS-BCSU:TBL;` should also be escalated with the ticket.

For further diagnosis information, see the "Board Highway Test" chapter in the OpenScape 4000 Feature Description manual.

```
CHA-DIAGS:COMP=CP2,S00=ON;
```

It is important also to trace the additional RTO tasks via:

```
selmsg,rcv,g2,cd1,dest,4A&4B&4C&4D&4E&4F&50&51&52&D3&DF;
selmsg,rcv,g2,cd2,src,2B,ne;
msglen,rcv,g2,64;
selmsg,sd,g2,cd1,src,4A&4B&4C&4D&4E&4F&50&51&52&D3&DF;
selmsg,sd,g2,cd2,dest,2B&4A&4B&4C&4D&4E&4F&50&51&52&D3&DF,ne;
msglen,sd,g2,64;
```

Furthermore, if there is a LW problem and not just CP, a HDLC selection will be required (this should also be made by default).

1.3.10 HDLC traces

HDLC traces are usually required when a problem is suspected with the messages sent to or from a particular board group (e.g. when a problem is suspected between the software and the loadware).

In such cases, the standard trace can easily be enhanced with the following commands:

```
selmsg,os,g3,cd1,dest,ae&de;  /* PP IN and Board Out
selmsg,os,g3,cd2,byte,6,x;          /* LTU Number (in Hex)
selmsg,os,g3,cd3,byte,7,yy;   /* PBC Number (in Hex)
msglen,os,g3,270;             /* OS at 270 Bytes
```

Such examples can be identified via the Board Highway Test or can simply display messages sent to the phone.

The 6th byte must be replaced with the LTU number. Byte 7 (found from AMO-DISPS) must be replaced with the PBC number of where the board is situated.

In rare cases, the PIT task for board loading must also be traced. In such cases, a minimum of 1000 blocks are required.

```
selmsg,rcv,g4,cd1,dest,ee&99&65;
msglen,rcv,g4,32;
selmsg,sd,g4,cd1,src,ee&99&65;
selmsg,sd,g4,cd2,dest,ee,ne;
msglen,sd,g4,32;
```

IMPORTANT: In HDLC cases, the 6th and 7th bytes are not the High and Low byte values from AMO-DISPS!

1.3.11 Number modification problems

Number modification problems should be traced when using an additional AMO-DIAGS switch. Special error messages are then signalled upon each internal modification of a number.

```
CHA-DIAGS:COMP=CP2,S05=ON;
/* Only in a low period of traffic
/* A HISTA message is generated for
/* every modification of every call
/* in the switch

CHA-DIAGS:COMP=CP2,S06=ON;
/* Routes must be marked within Flag
/* Trace for the Hista messages to be
/* generated
```

IMPORTANT: Deactivate the DIAGS switch after tracing to prevent HISTA flooding.

1.3.12 Attendant display problems

When diagnosing attendant problems, it is important to have longer messages for the attendant lines. In such cases, only these lines can be additionally selected with the standard trace for longer messages using the High and Low bytes from AMO-DISPS (substitute xxyy):

```
selmsg,pp,g3,cd1,byte,06,yy;    /* Low byte vale of attendant
selmsg,pp,g3,cd2,byte,07,xx;    /* High byte vale of attendant
msglen,pp,g3,350;         /* Attendant PP at 350 bytes
selmsg,pp,g4,all;         /* All other PP messages
msglen,pp,g4,32;
selmsg,cp,g2,cd1,byte,06,yy;    /* Low byte vale of attendant
selmsg,cp,g2,cd2,byte,07,xx;    /* High byte vale of attendant
msglen,cp,g2,200;               /* Attendant CP at 200 bytes
selmsg,cp,g3,all;         /* All other CP messages
msglen,cp,g3,48;
```

IMPORTANT: Explicit selections must ALWAYS be inserted BEFORE the CP or PP ALL selection.

1.3.13 Call problems problems

When experiencing problems with call transfer (from attendant also), the following AMO DIAGS switch must be activated before tracing:

```
CHA-DIAGS:COMP=CP2,S04=ON;
```

By default, this diagnosis switch is ON.

1.3.14 Hanging B-Channels

For hanging B-Channels issues, the following disgnosis switches are needed:

```
cha-diags:procid=cc,comp=cp,s14=on;  /* CPB-INDEX
cha-diags:procid=cc,comp=cp2,s01=on;       /* Diag-data in dyn device mem
```

```
cha-diags:procid=cc,comp=cp2,s02=on;       /* Output all implausible events
```

A trace stop should be defined with the relevant cause:

```
selmsg,stop,g1,cd1,dest,71;
selmsg,stop,g1,cd2,ev,97;
selmsg,stop,g1,cd3,byte,6,<LTG_Line>;  /* Low-Byte of trunk
selmsg,stop,g1,cd4,byte,7,<LTG_Line>;  /* High-Byte of trunk
selmsg,stop,g1,cd5,byte,15,08;

*/ Hicom Standard
*/ selmsg,stop,g1,cd6,byte,16,02;      /* Call reference length if 2
*/ selmsg,stop,g1,cd7,byte,19,5a;      /* Message type (REL_COM)
*/ selmsg,stop,g1,cd8,byte,23,ac&a2;   /* <CAUSE VALUE> of the REL_COM
         /* (other than 90)
*/ Some Foreign Systems
*/ selmsg,stop,g2,cd6,byte,16,01;       /* Call reference length if 1
*/ selmsg,stop,g2,cd7,byte,18,5a;       /* Message type (REL_COM)
*/ selmsg,stop,g2,cd8,byte,22,ac&a2;    /* <CAUSE VALUE> of the REL_COM
               /* (other than 90)

<POSSIBLE CAUSE RELEASE VALUES>:
AC Requested circuit/channel not available
    A2 No circuit/channel available
    E6 Recovery timer expire
    A9 Temporary failure
    90 Normal Clearing
```

The trunk must be deactivated prior to activating the trace:

```
dea-dssu:di,pen,LTG-LTU-SLOT-PORT;
on,hd,":DIAG:<filename>",1000,y,y;
act-dssu:aul,pen,LTG-LTU-SLOT-PORT;
```

After stopping the trace, the last message in the trace will contain a Setup message for which the immediate response is Release Complete. The dynamic device memory from the B-Channel in the last call needs to be displayed using its **loden**:

```
exec-disps:bp
lst,sw,loden,cir,LTG,LTU,SLOT,PORT;
lst,sw,dcldc,loden,xxxx;

(xxxx = LODEN hexadecimal from B-Channel, SU 0)
```

1.3.15 CDR problems

When experiencing CDR problems, it is important to activate several optional diagnosis flags. In this scope, two trace selections are available. The trace selection **must be added** to the standard trace and the relevant optional diagnosis flag must be activated:

```
selmsg,sd,g1,cd1,dest,8d&91;
/* CDR specific tasks

msglen,sd,g1,1500;
```

```
/* under extreme traffic can
/* reduce to 1000 bytes

selmsg,cp,g2,all;

msglen,cp,g2,96;
/* CP messages @ 96 bytes long
```

For hanging COSTI Buffer issues, the following selection should be used (see also the CDR optional diagnosis flags):

```
selmsg,sd,g1,cd1,byte,0,8d&91;
/* CDR specific tasks

msglen,sd,g1,1000;

selmsg,stop,g1,cd1,byte,0,8d;
/* Message generated by opt

selmsg,stop,g1,cd2,byte,4,6;
/* diagnosis patch 55

selmsg,stop,g1,cd3,byte,23,1e;

msglen,stop,g1,1000;
```

The following CDR optional diagnosis flags are available:

- COSTI-DATCOL
  `CHA-DIAGS:COMP=CDR,S10=ON;`
- GET_BILLING
  `CHA-DIAGS:COMP=CDR,S11=ON;`
- CHARGE_CALC
  `CHA-DIAGS:COMP=CDR,S12=ON;`
- COSTI Hanger Diagnosis
  `CHA-DIAGS:COMP=CDR,S15=ON;`

For all CDR error cases, the **COSTI-DATCOL** and **GET_BILLING** optional diagnosis flags should be activated. Only when there is a problem with charge calculation, you must activate the additional **CHARGE_CALC** optional diagnosis flag.

You can alternatively use the standard TRACS trace profiles files 9-12.

IMPORTANT: CDR Error messages are classed under the EVT CG in AMO SIGNL.

1.3.16 CDG problems

INFO: The support for CDG as a product was stopped on 2010.01.19.

For CDG problems, additional DPNSS messaging can be required. However, a CDGM trace should be collected. There is also a possibility to trace DPNSS messaging remotely.

```
/* ACTIVATE CDG TRACE

EX-LWCMD:<LTU>,<SLOT>,CDG,ECMD 4 1 2 1 1 1 3; /* CDG-DPNSS Trace line 0
EX-LWCMD:<LTU>,<SLOT>,CDG,ECMD 4 1 2 1 3 1 3; /* CDG-DPNSS Trace line 1

/* DEACTIVATE CDG TRACE

EX-LWCMD:<LTU>,<SLOT>,CDG,ECMD 4 1 2 1 1 1 0; /* CDG-DPNSS Trace line 0
EX-LWCMD:<LTU>,<SLOT>,CDG,ECMD 4 1 2 1 3 1 0; /* CDG-DPNSS Trace line 1

selmsg,pp,g3,cd1,ev,fe;         /* DPNSS Messages
msglen,pp,g3,256;         /* At length of 256 only
selmsg,pp,g4,all;                     /* rest of PP
msglen,pp,g4,32;


EX-LWCMD:<LTU>,<SLOT>,CDG,HELP;
```

1.3.17 ACL-C trace

For diagnosing ACL problems, the following selection is required:

```
selmsg,cp,g2,cd1,src,08;     /* Incoming ACL
msglen,cp,g2,272;            /* at length of 272 bytes
selmsg,sd,g2,cd1,dest,08;          /* Outgoing ACL
selmsg,sd,g2,cd2,src,6c;
msglen,sd,g2,1040;           /* at length of 1040 bytes
selmsg,cp,g3,all;            /* All other CP messages
msglen,cp,g3,48;
```

IMPORTANT: Explicit selections must ALWAYS be inserted BEFORE the CP or PP ALL selection.

Issues related to CSTA applications might also occur together with ACL-C problems. In such cases, the CSTA checklist requirements must be fulfilled. For more information about CSTA checklist requirements, see the CAP/CSAT chapter.

1.3.18 DMC

No special requirements are needed because the DMC messages are contained in a normal CP trace. As a hint for service, the following diagnosis switch can be activated to display DMC connection messages in HISTA:

```
CHA-DIAGS:COMP=CP2,S09=ON;
/* Display DMC messages in Hista
```

You can also use AMO ZAUSL to monitor the number of DMC attempts.

IMPORTANT: Deactivate the DIAGS switch after tracing to prevent HISTA flooding

1.3.19 ONS

INFO: The classic AUN ONS function is reffered here and NOT the UC ONS.

In addition to the standard trace, the following DIAGS switch should be activated to provide extra HISTA diagnosis information. Upon activation, F4066 Advisories will be displayed, and the UA is available under **F4066 Diagnosis Advisories** in the **Important UA** section of this document.

```
CHA-DIAGS:COMP=CP2,S12=ON;
/* Display ONS messages in Hista
```

IMPORTANT: Deactivate the DIAGS switch after tracing to prevent HISTA flooding.

1.3.20 CMI Error trace stop

CMI trace stops use the CMI error number placed under the word “DATA” in the error message. Below you can find an example for CMI error 01FF:

```
F5719 E8 N5272 NO ACT   BPA   TERM     CMI ERROR              07-03-11 09:49:53
      ALARM CLASS:CENTRAL:002
        P303:LTG1 :LTU6 :002: 00    : 0 Q2193-X200 SLC24      BST:01  PLS:-12
      FORMAT:43
      REASON:0BH  ERROR IN IWU IC SERVICE COMPONENT
      CMI ERROR DATA:
      5F0B00010E01FF800001750001000000 02000BFFFFFFFFFFFFFFFFFFFFFFFF
```

```
selmsg,stop,g3,cd1,dest,40;               /* Destination Task FA
selmsg,stop,g3,cd2,ev,1C;                 /* DB_QF_E_TERM_CMI_ERR
selmsg,stop,g3,cd3,sevt,39;
selmsg,stop,g3,cd4,byte,10,0B;          /* 0B Reason
selmsg,stop,g3,cd5,byte,14,01;          /* 01 is on byte 14
selmsg,stop,g3,cd6,byte,15,FF;          /* FF is on byte 15
```

INFO: Dest with evt 23 (TERM) and sevt 42 (F5719) can be used alternatively.

For CMI & Cordless IP issues, please also refer to the dedicated chapter from this document.

1.3.21 S0/S2PP device problems

For Functional Device traces, you must include the following AMO DIAGS switch in the trace selection that includes further messaging for diagnosis:

```
CHA-DIAGS:COMP=DH,S06=ON;
/* Call Reference and B-Channel Linkage for S0 and S2PP
 devices
```

IMPORTANT: Deactivate the DIAGS switch after tracing to prevent HISTA flooding.

1.3.22 Resource Manager

When Resource Manager is configured, sometimes connections are blocked if no resources are free. In such a case, an F4436 advisory message is signalled. Usually the reason for the error message is the correct one and it is defined by configuration (e.g. more connections are attempting to use a path than are allowed in the GKTOP configuration OR that a DMC connection was restricted via the GKTOP attribute “NODMC”).

In some rarer cases, the advisory is signalled due to hanging bandwidth, meaning a DIS-GKTOP will show the bandwidth used even though no connections are active over the specific path. Hanging Bandwidth can be verified by executing DIS-GKTOP, in a low period of traffic.

The F4436 error message contains important information regarding the routes not available.

```
F4436 M4 N1327 NO ACT   BPA   VECO     DIAGNOSIS ADVISORY      06-11-30 14:59:14

      ALARM CLASS:CENTRAL:024
      CC:65535  EC:65535  UA:DBDB:0001  SP:FFFF:FFFF  LD:01-18-007-019
      DT:40  ST:13  SN:FF01  CEVT:2C  CSEV:20  CST:5A
      FORMAT:24   MESSAGE-ID: 02580

      401301FF 2C2001100 DBDB140A 580A3C00  0152001B 0104A60D A30D005A 5A5A5A5A
      5A5A5A5A 5A5A5A5A 5A5A5A5A 5A5A5A5A  5A5A5A5A 5A5A5A5A 5A5A5A5A 5A5A5A5A
```

IMPORTANT: The Error message will also be signalled if the Sector Attribute NO DMC is set.

```
Conntype: 00=IPDA_CONN_MASTER, 01=DMC_CONN, 02=REM_HFA_SUBSCR, 03=HFA_HFA (Byte)
Error Address: DBDB (Word)
MessageID (Word)
PHYS LTG_LINE->PEN of Ext.A (Word)
Sector Attribute (Powerset:DB_M_RESM_SSPA_SCT_ATT_SET) (Word)
Sector where lack of resources was recognized (Word)
Configured Bandwidth for the rejected connection (Byte)
LTGLINE A (word)
LTGLINE B (word)
Filler
```

```
DB_M_RESM_SSPA_SCT_ATT_SET = SET (
416 -- /* SECTOR IN: */
416 -- DB_RESM_SSPA_HFA_1 ,    /* SECTION ENDPOINT 1 TO HHS/AP     */
416 -- DB_RESM_SSPA_HFA_2 ,    /* SECTION ENDPOINT 2 TO HHS/AP     */
416 -- DB_RESM_SSPA_IPDA ,    /* SECTION HHS-AP OR AP-AP      */
416 -- DB_RESM_SSPA_TRK ,    /* OUTGOING TRUNK SECTOR PATH     */
416 -- DB_RESM_SSPA_DMC ,    /* DMC SECTOR PATH        */
416 -- DB_RESM_SSPA_SRC ,    /* SECTION OF THE SOURCE SECTOR     */
416 -- DB_RESM_SSPA_DEST ,    /* SECTION OF THE DESTINATION SECTOR   */
417 -- DB_RESM_SSPA_EXCL_SECTOR,  /* ASSOCIATED SECTOR HAS TO BE EXCLUDED   */
417 --                            /* AND IGNORED ON BANDWIDTH COUNTING      */
417 -- DB_RESM_SSPA_WAN_DIR_CONN,  /* SECTOR WITH THE ATTRIBUT DIRECT WAN   */
417 --                            /* CONNECTION FOR MC/DMC, WHICH IS THE    */
417 --                            /* CURRENT WAN CONNECTION SECTOR IN THE   */
417 --                            /* SECTOR PATH                            */
```

CONNTYPE description:

- `00=IPDA_CONN_MASTER`: not enough BW for a IPDA-Master connection
- `01=DMC_CONN`: not enough BW for the DMC connection (Master Conn OK!)
- `02=REM_HFA_SUBSCR`: not enough BW for the Mobile HFA Phone
- `03=HFA_HFA`: not enough BW for a HFA-HFA connection

1.3.22.1 Diagnosis of hanging bandwidth

Sometimes a DIS-GKTOP Resource Manager will show bandwidth is used even though no connections are active. Diagnosing such errors can be time consuming. You can follow the diagnosis steps below to minimize the effort:

1) Create a plan of the Resource Manager configuration. This is useful for the service team to identify any possible configuration errors and can offer an overview of the configuration at the customer's site.
2) Release any hunging resources by executing a soft restart.
3) Modify and activate the following trace by setting it with **2000** blocks.

```
cha-diags:comp=dh,s03=on;         /* MTS Trace
 interface
 cha-diags:comp=db,s03=on;  /* DNIL Trace interface
 cha-diags:comp=db,s10=on;  /* RM Trace interface
 ex-tracs:bp;
 permtr,poff;
 res,all;
 flagtr,off;
 selmsg,pp,g1,cd1,dest,ff&fe;
 msglen,pp,g1,17;
 selmsg,pp,g2,cd1,dest,fd;
 selmsg,pp,g3,cd1,dest,ae;
 selmsg,pp,g3,cd2,byte,10,af;
 msglen,pp,g3,48;
 selmsg,pp,g4,all;
 msglen,pp,g4,32;
 selmsg,cp,g1,all;
 msglen,cp,g1,48;
```

```
selmsg,rcv,g1,cd1,dest,40;
selmsg,rcv,g1,cd2,src,40,ne;
on,hd,:diag:<file name>,2000,y,y;
end
```

To provide additional diagnosis data in the trace, you must enter the sectors where the bandwidth is hanging in debug. For this, a global DB variable can be used to allows setting up to 6 sectors for which diagnosis data to be saved.

The sector numbers must be converted into hexadecimal and the bytes swapped around as with the high and low byte in AMO DISPS.

Please note that the **DB_V_MON_SECTORS** addresses might be different in each version.

DB_V_MON_SECTORS addresses:

```
BA70:0C58 (T'14) OpenScape 4000 V8 R2 / V10 R0
BA70:1560 (T'14) OpenScape 4000 V10 R1
```

If needed, ask the OpenScape 4000 Support to assist with this diagnosis.

Example:

SECTOR 1 is 310

310’T (decimal) equals 136’H (Hex), swap high and low byte = 3601’H

SECTOR 2 is 150

150’T (decimal) equals 96’H (Hex), swap high and low byte = 9600’H

```
e.g. set BA70:1560 (2)=x’0300! /* MS_COUNT e.g. 3 sectors!

e.g. set BA70:1562 (2)=x’3601! /* V_SECTOR1 := 310’T =
 3601’H
e.g. set BA70:1564 (2)=x’9600! /* V_SECTOR2 := 150’T =
 9600’H
e.g. set BA70:1566 (2)=x’EE02! /* V_SECTOR3 := 750’T =
 EE02’H
e.g. d BA70:1560(T'14)! = 03 00 36 01 96 00 EE 02 00 00 00
 00 00 00

EXEC-DEBUG:BP; term;
start;
"D BA70:1560 (T'14)!"  /* display current values of
 DB_V_MON_SECTORS
"set BA70:1560(2)=x'yyxx!"  /* MS_COUNT
"set BA70:1562(2)=x'yyxx!"  /* V_SECTOR1
"set BA70:1564(2)=x'yyxx!"  /* V_SECTOR2
"set BA70:1568(2)=x'yyxx!"  /* V_SECTOR3
"set BA70:156A(2)=x'yyxx!"  /* V_SECTOR4
"set BA70:156C(2)=x'yyxx!"  /* V_SECTOR5

"set BA70:156E(2)=x'yyxx!"  /* V_SECTOR8
dend
```

The trace is activated. However, it is difficult to know when the error has occurred (e.g. it would not be possible to stop on F4436 error message because this can also happen under normal circumstances - when all B-Channels are seized with valid calls).

Unfortunately, it is only possible manually monitor the sectors and compare them with the actual number of connections displayed in the connection table, in the GW WBM IPDA (CPC Show Network Connection Table).

Once a discrepancy is noticed between what is displayed in GKTOP and the number of connections on the STMI/NCUI, the trace should be stopped.

Send the binary trace, full SWU Regen, HISTA covering the trace time, the AMO DEBUG output and diagram from point one with a description containing DIS-GKTOP in order to show exactly in which sectors the bandwidth is hanging.

Further hints:

- RESMAN should never contain a route with more than 16 sectors.
- ONLY WAN Sectors are supported for bandwidth calculation and NOT LAN Sectors.
- Each RESMGMT1 from GKTOP must contain the ZAND PKNNO under the PKNNO parameter (e.g. this is NOT the KNDEF entry).
- IP TRUNKING is not supported.
- Network-wide configuration is extremely time intensive and if an incorrect sector is received from a partner system DMC is not switched.
- When a DMC connection is made, the bandwidth is not reduced if the CODEC is of a lower quality until the call is disconnected. If the bandwidth is more i.e. a higher bandwidth is used for the DMC connection, the value is increased normally.
- MOBHFA is supported. Upon successful logon the Cluster ID of the guest station is also stored. Bandwidth calculation will consider the path from the guest station to the home GW and then from the home GW to the called party. DMC can also increase the bandwidth dependant on which CODEC is used for the master connection.
- The bandwidth is ALWAYS calculated as configured i.e. from HHS in direction of the AP. If the call is between two APs the routes are overlaid (compared) to establish the true route.
- SBCSU IPCODEC must be configured for IP phones to calculate the bandwidth correctly.
- When using KCSU, no bandwidth reservation will be made during ringing state, but only after answer.
- Each GW should be connected to a LAN sector,not directly to WAN!

1.3.23 F5413 LAYER 2/F5417 Layer 3 error messages

The OpenScape 4000 Troubleshooting manual has been updated with the required diagnosis for these errors.

1.3.24 Hanging LODTMD/LODS0

If LODTMD or LODS0 are hanging in AMO DIMSU, a trace must be made over a time frame to capture the value increasing. Important for the duration of that trace is also to activate the following diagnosis switch:

```
CHA-DIAGS:COMP=CP2,S13=ON;
/* Trace message for LODTMD/LODS0 seizure and release
```

1.4 Controlling trace quality

Sniffer traces

In most cases, mirror port traces are sufficient. However, you must ensure messages are not truncated otherwise, diagnosis often becomes impossible. This means that a new trace will be requested.

It is recommended to use the **Ring Buffer** option with files no larger than 100 MB.

A trace using a TAP device might be requested as well. This provides a way to collect an accurate sniffer trace.

IMPORTANT:

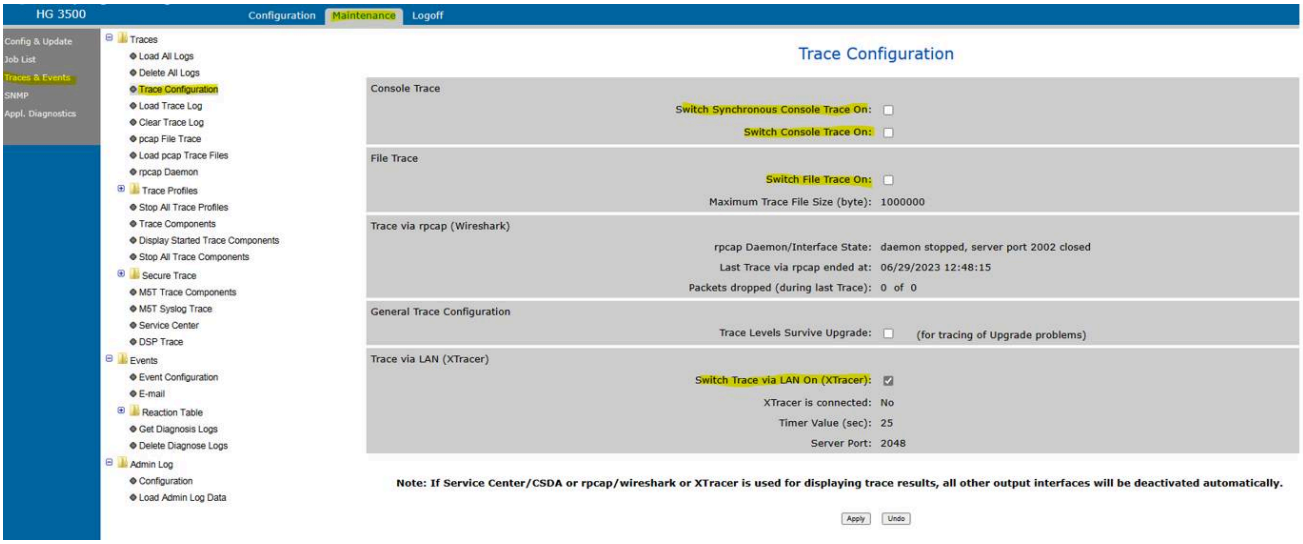
You must synchronise the time on the sniffer PC with the time on the OpenScape 4000 system. This step allows for simplifying and expediting the diagnosis of the problem.

If **Secure Trace** is used, the relevant trace beacons should be controlled as detailed in chapter "Verify Correct Activation of the Traces" of the OpenScape 4000 IP Solutions Manual.

If **RPCAP** is used, follow the checks described under Gateway (GW) traces.

Gateway (GW) traces

When tracing to the board, several V.24 messages can be lost due to the trace tasks having lower priorities than Call Processing. The best option for capturing all messages is to use output LAN device with Xtracer tool. It is recommended to deactivate other output devices to eliminate unnecessary load. XTracer tool must be used with trace type **HG 1500 v.3**.



IMPORTANT:

It is recommended to wait 2 to 3 minutes after a test call before terminating the Xtracer connection. The reason for

this is that when many trace points are activated, the output of trace messages might be delayed.

Additionally, even if the output devices are configured correctly, it is still possible to miss trace messages due to either too many trace points or too many high trace point levels. For this reason, you must always check the trace quality by searching for the following text string **"MSG_OAM_QUEUE_FULL"**. If this is present, there are missing messages. You should contact OpenScape 4000 Support or adjust trace points according to the instructions before remaking the trace.

```
(EVTLOG tEvtLogTask 0x3055cc8 "02/16/2010 13:42:44.485877" cevtlogsvc01.cpp 914)
EventLogEntry from OAM (WrkThrd03 "02/16/2010 13:42:44.485146" coambasetask01.cpp
 345):
  EventType: Major
  EventCode: MSG_OAM_QUEUE_FULL
  EventText: Msg Queue (tTrcTask) full. Remove Messages
```

It is recommended to use the **Ring Buffer** option, under the **Start New** section of the Xtracer. The files should not be larger than 100 MB.

RPCAP function

When using the **RPCAP** function, it is important to check that no packets were dropped. With dropped packets, it is not possible to correctly analyze the trace.

There is already a hint to check this in Wireshark, upon capturing:

"After capture it is imperative to check "Statistics -> Capture File Properties" that Capture "Dropped Packets" is equal to 0 or unknown to ensure data integrity."

However, even after the capture, the information in the eventlog can be unclear:

(whilst running every 20 seconds)

```
EventLogEntry from RPCAP (tNetTask "07/13/2011 08:59:09.515962" rpcap.cpp 90):
  EventType: Information
  EventCode: MSG_RPCAP_INFORMATION
  EventText: Wireshark client drops IP packets. Number of traced packages: 11877,
 dropped packages: 1
```

(and again upon trace stop)

```
EventLogEntry from RPCAP (trpcapSVC "07/13/2011 08:59:23.711033" rpcap.cpp 83):
  EventType: Information
  EventCode: MSG_RPCAP_INFORMATION
  EventText: Wireshark client has stopped tracing. Number of traced packages:
 12424, dropped packages: 2535
```

RMX traces

After translating the trace using the Message Doctor, COOL or ENDLOS tools, sometimes the sign "<-" or "<= " can be observed (highlighted with bold text for emphasis in the example below). In such cases, this renders the trace file useless, the sign actually indicates some trace messages were missed due to heavy traffic. This problem is usually only experienced on systems with very heavy traffic:

```
+--------+-----------+-----------+--------+
```

```
|  BLOCK | LFDNR-ANF | LFDNR-END | INFO  |
+--------+-----------+-----------+-------+
| 2061   |   46984   |   47129   |1   91 |
| 2062   |   47130   |   47268   |1 <-92 |
| 2063   |   47274   |   47419   |1   93 |
| 2064   |   47420   |   47563   |1 <=93 |
| 2065   |   47708   |   47853   |1 <=94 |
| 2066   |   47854   |   47914   |1 ENDE |
| 2057   |   46250   |   46397   |1   88 |
| 2058   |   46398   |   46543   |1   89 |
| 2059   |   46544   |   46691   |1   90 |
| 2060   |   46840   |   46983   |1 <=91 |
+--------+-----------+-----------+-------+
```

In such cases, the longer message selections can then be shortened (e.g. in Trace 1 from 3000 bytes to 1000 or in Trace 2 from 500 to 200). If messages are missing between blocks, the tools do not indicate this information.

Where a trace stops, the word **ENDE** should be displayed in the **INFO** field of the trace header.

NOTICE: ENDLOS and earlier versions of Message Doctor cannot decode files with more than 1500 Blocks. Message Doctor V3.48 onwards or alternative tools must be used in this case.

1.5 Important UAs

The list below displays some of the most important UAs:

```
UA:BC20:1D45        V8 R0 - CP_P_ACLG_MONITORING_ERR
UA:BC20:1D76        V8 R0 - CP_P_ACLS_SERVICES_ERROR
UA:BC20:1DA7        V8 R0 - CP_P_ACLS_PARSING_ERROR
UA:BC20:1DD8        V8 R0 - CP_P_ACLG_GENERIC_ERROR
UA:BC20:1D47        V8 R1 - CP_P_ACLG_MONITORING_ERR
UA:BC20:1D78        V8 R1 - CP_P_ACLS_SERVICES_ERROR
UA:BC20:1DA9        V8 R1 - CP_P_ACLS_PARSING_ERROR
UA:BC20:1DDA        V8 R1 - CP_P_ACLG_GENERIC_ERROR
UA:BC28:1D4B        V8 R2 - CP_P_ACLG_MONITORING_ERR
UA:BC28:1D7C        V8 R2 - CP_P_ACLS_SERVICES_ERROR
UA:BC28:1DAD        V8 R2 - CP_P_ACLS_PARSING_ERROR
UA:BC28:1DDE        V8 R2 - CP_P_ACLG_GENERIC_ERROR
UA:BC28:1D5B        V10 R0 - CP_P_ACLG_MONITORING_ERR
UA:BC28:1D8C        V10 R0 - CP_P_ACLS_SERVICES_ERROR
UA:BC28:1DBD        V10 R0 - CP_P_ACLS_PARSING_ERROR
UA:BC28:1DEE        V10 R0 - CP_P_ACLG_GENERIC_ERROR
UA:BC28:1D5F        V10 R1 - CP_P_ACLG_MONITORING_ERR
UA:BC28:1D90        V10 R1 - CP_P_ACLS_SERVICES_ERROR
UA:BC28:1DC1        V10 R1 - CP_P_ACLS_PARSING_ERROR
UA:BC28:1DF2        V10 R1 - CP_P_ACLG_GENERIC_ERROR
UA:BC28:1D77        V11 R0- CP_P_ACLG_MONITORING_ERR
UA:BC28:1DA8        V11 R0- CP_P_ACLS_SERVICES_ERROR
UA:BC28:1DD9        V11 R0- CP_P_ACLS_PARSING_ERROR
UA:BC28:1E0A        V11 R0 - CP_P_ACLG_GENERIC_ERROR
```

If ACL Diagnosis Advisories are activated, use the following command: `CHA-DIAGS:COMP=CP2,S03=OFF;` to resolve.

```
UA:CD20:88F0                    V8 R0/R1
UA:CD40:88F0/UA:CBC8:5659       V8 R2
UA:CD48:8910/UA:CBD0:5659       V10 R0
UA:CD50:8910/UA:CBD8:5659       V10 R1
UA:CD58:8910/UA:CBE0:5659       V11 RO
```

Announcement devices can find no resource. VIAHHS classmark should not be set in RCSU/SSC/TSCSU **WHEN** no fixed HHS shelves are present (classic TDM shelves). If this is the case, you need to remove the VIAHHS classmark and additionally set:
`CHA-ZANDE:TYPE=ALLDATA,STMIPRES=YES;`

NOTICE:

YES means no STMI is present.

```
UA:BAA8:B75E        V8 R0
UA:BAA8:B768        V8 R1
UA:BAB0:B774        V8 R2
UA:BAB0:B783        V10 R0
UA:BAB0:B85D        V10 R1
UA:BAB0:B908        V11 R0
```

COSTI buffers are exhausted on the system or not enough are configured. A Soft restart can be performed and diagnosis can be started for hanging COSTI buffers.

```
UA:C2E0:0799        V8 R1
UA:C2F0:080F        V8 R2
UA:C2F8:08B9        V10 R0
UA:C300:0971        V10 R1
UA:C300:0B39        V11 R0
```

With **CEVT:E2 CSEV: 1 CST: 0**, a UFIP device is dialling a number with more than 22 digits and the advisory is just intended for information purposes.

```
UA:B9D8:0127    V8 R0/R1/R2
UA:B9D8:0127    V10 R0/R1
UA:B9D8:0127    V11 R0
```

CPB Password Check is activated for diagnosis via:
`CHA-DIAGS:COMP=DB,S02=OFF;`

USA customers activate this DIAGS switch as a standard.

```
UA:C208:5286        V8 R2
UA:C210:5286        V10 R0
UA:C210:4200        V10 R1
UA:C210:4296        V11 R0
```

For CP Diagnosis output message paste the DIAG message output to Message Doctor for decoding. Additionally, use F4066 details in ALFE.

For synchronous, Announcement DIAGS generated messages can be deactivated via:
`CHA-DIAGS:COMP=CP,S06=OFF;`

```
UA:BAC0:3293 & UA:BAC0:3839 & UA:BAC0:548B    V8 R0/R1/R2
UA:BAC0:3293 & UA:BAC0:3839 & UA:BAC0:548B    V10 R0
UA:BAC0:32C0 & UA:BAC0:3866 & UA:BAC0:548B    V10 R1
UA:BAC0:3609 & UA:BAC0:3BAF & UA:BAC0:57D4    V11 R0
```

With **EC:00161 - CPDBUF** in AMO, DIMSU is set to 0. Call Processing Data Buffers are being requested, but none are configured in AMO DIMSU. You should configure a suitable value to resolve this.

```
UA:BCF0:B2AB    V8 R0
UA:BCF0:C870    V8 R1
UA:BCF8:C8A8    V8 R2
UA:BCF8:D7CF    V10 R0
UA:BD00:504B    V10 R1
UA:BD00:5101    V11 R0
```

EC:02013 indicates a resource problem: either no TSL or CPB could be found for an incoming call, or no Call References are available on the trunk. In such cases, check TSL statues and DIMSU CPB usage accordingly.

For **Call Reference** issues, display **CPCRF/DHCRF** values from DISPS and restart the trunk. Most likely, a trace is needed leading to this situation and values from DISPS should be displayed to match the trace. One occurrence of Call Reference exhaustion can be through GPUNST in AMO CTIME (CP2) being set too high (default is 180 seconds).

```
UA:BAD0:27D8    V8 R0/R1
UA:BAD8:27D8    V8 R2
UA:BAD8:27D8    V10 R0
UA:BAD8:27D8    V10 R1
UA:BAD8:27DA    V11 R0
```

Double CPB Release can lead to severe error consequences (e.g. path problems, restarts, resource hanging etc). It is thereby an important error to investigate and not ignore. To diagnose the CPB password:

- Checking should be activated via `cha-diags:comp=db,s02=on;`
- CPB trace seizure release messages should be displayed via `cha-diags:comp=veco,s15=on;`
- the VECO speed increased `cha-diags:comp=veco,00=on;`

```
UA:BFE0:212F    V8 R0/R1
UA:BFF0:2127    V8 R2
UA:BFF8:2127    V10 R0
UA:BFF8:214C    V10 R1
UA:BFF8:214C    V11 R0
```

DSSDEST is set incorrectly for stations in AMO SDAT (this should only be set when TEAMNW is in use). Remove the parameter to resolve.

```
UA:B9F0:C321 & UA:B9F0:C33C    V8 R0
UA:B9F0:C669 & UA:B9F0:C684    V8 R1/R2
UA:B9F0:C87D & UA:B9F0:C898    V10 R0
UA:B9F8:0BDE & UA:B9F8:0BF9    V10 R1
```

```
UA:B9F8:0BDE & UA:B9F8:0BF9    V11 R0
```

DBARs signalled together with SAVE ERRORS F43xx&F47xx require additional DIAGS switch:

```
CHA-DIAGS:COMP=CP2,S00=ON;

UA:BD70:AEC2    V8 R0
UA:BD70:AEDA    V8 R1
UA:BD78:AEE4    V8 R2
UA:BD80:AEE4    V10 R0
UA:BD80:AF2A    V10 R1
UA:BD80:AF32    V11 R0
```

When it is not possible to set a forward from phone's menu, this UA is signalled with **CEVT:9B** and **SEVT:2C**. No LCR is configured in the system! LCR is needed for forward destination verification and it is required even for internal destinations.

```
UA:BFC0:64E2    V8 R0/R1
UA:BFD0:6532    V8 R2
UA:BFD8:653C    V10 R0
UA:BFD8:6554    V10 R1
UA:BFD8:6554    V11 R0
```

No error, UA signals a call is disconnected because a Flag Trace call is requested, but COT NOFT is set! The call is identified as malicious and disconnected.

```
UA:BAF0:7AE5 & UA:BAF0:872B        V8 R0
UA:BAF0:7C79 & UA:BAF0:88BF        V8 R1
UA:BAF8:BAFD & UA:BAF8:C743        V8 R2
UA:BAF8:BBE2 & UA:BAF8:C839        V10 R0
UA:BAF8:BF2A & UA:BAF8:CB81        V10 R1
UA:BAF8:C04B & UA:BAF8:CCA2        V11 R0
```

NW Pickup Group Link is incorrectly configured, Cool analysis of F4066 Stack data is required to establish the precise incorrect group. Alternatively, check the partner switch for F4066 AUN diagnosis messages that can be decoded in Message Doctor.

INFO:

The local AUN group is signalled in hex on the Stack (position varies dependent on format):

```
F4066 M8 N0413 NO ACT   BPB   CP       ADVISORY              14-10-21 15:22:13
      ALARM CLASS:CENTRAL:023
      CC:00683  EC:00506  UA:BAF0:7AE5  SP:5F94:1516  BP:151C  LD:00-00-000-000
      FORMAT:45   MESSAGE-ID: 43181
      STACK-DATA-MESSAGE 01  OF 05
      ---6---8 ---A---C ---E---0 ---2---4  ---6---8 ---A---C ---E---0 ---2---4
      04000 005 0009153C 16DA163E 14241CB4  77D09B80 B0E01538 5F941536 5F94 0036

PI_LOC_GRP_NO                  = 54 (H'0036) <- i.e. local group is 54.
```

```
F4066 M8 N7993 NO ACT   BPB   CP       ADVISORY              17-07-28 09:52:09
      ALARM CLASS:CENTRAL:023
      CC:00683  EC:00506  UA:BAF0:7AE5  SP:7484:16C2  BP:16D2  LD:01-04-001-000
      FORMAT:45   MESSAGE-ID: 06485
      STACK-DATA-MESSAGE 01  OF 06
      ---2---4 ---6---8 ---A---C ---E---0  ---2---4 ---6---8 ---A---C ---E---0
      04B50000 BB8059F4 00010002 008ED210  16F6743C 04B5139C 00000000 287ABD28
      16F27484 16F07484 00000000 0084 0000  BB809700 1738743C 04B59A57 00000000

PI_LOC_GRP_NO                 = 132 (H'0084) <- i.e. local group is 132.
```

```
UA:C0A8:8011        V8 R0/R1
UA:C0B8:8007        V8 R2
UA:C0C0:813D        V10 R0
UA:C0C0:8167        V10 R1
UA:C0C0:81BC        V11 R0
```

RERTEINT from AMO LDAT is incorrectly used for ROPT and the configuration needs to be corrected (e.g. ROPT must not use routes marked with RERTEINT).

```
UA:BAE8:90D0        V8 R0/R1
UA:BAF0:C729        V8 R2
UA:BAF0:C7B5        V10 R0
UA:BAF0:C80F        V10 R1
UA:BAF0:C838        V11 R0
```

VFGR is missing on the system and needs to be added.

```
UA:BFA0:3984        V8 R0/R1
UA:BFB0:3984        V8 R2
UA:BFB8:39AE        V10 R0
UA:BFB8:39BA        V10 R1
UA:BFB8:3ACB        V11 R0
```

When this UA is signalled together with **CEVT:9B, CSEV27 & CST:0**, the error is likely to be caused by incorrect configuration of **NWTOP**. In such cases, please check the particular links signalled OR deactivate completely if the customer does not use this feature:
`CHA-ZAND:TYPE=ALLDATA3,NWTOPTIM=0;`

```
UA:C1F8:5249        V8 R0
UA:C1F8:528A        V8 R1
UA:C208:5286        V8 R2
UA:C210:5286        V10 R0
UA:C210:4200        V10 R1
UA:C210:4296        V11 R0
```

For F4066 Diagnosis Advisories, paste format into the Message Doctor Tool and follow the OpenScape 4000 Troubleshooting Manual for decoding.

IMPORTANT:

You should pay careful attention to the diagnosis byte documented under the F4066 description, since it is most likely a configuration issue.

```
UA:BA08:27E4        V8 R0/R1/R2
UA:BA08:27E4        V10 R0
UA:BA08:321E        V10 R1
UA:BA08:321E        V11 R0
```

A DNIL exception was signalled, and the trace profile must include DIAGS switches DH S03 and DB 03. If this UA is signalled together with CC:00686, the error indicates a hanging DNIL resource. A soft restart must usually be executed to release the resource before trace activation *. Trace stop conditions for this error (CC:00686) can be added to the normal trace selection:

```
selmsg,stop,g1,cd1,dest,40;
selmsg,stop,g1,cd2,ev,26; /* DB_QF_E_CP
selmsg,stop,g1,cd3,sevt,1D; /* DB_TX_SPE_DBAR
selmsg,stop,g1,cd4,byte,07,ae; /* CC:00686
selmsg,stop,g1,cd5,byte,08,02; /* CC:00686
```

NOTICE:

If the UA was only signalled once with **CC:00686**, then this does not indicate a true hanger and is only an indication of a late resource release. Only when there is a flood of these error messages (repeated signalling of the same message) the buffer needs to be released before tracing. The buffer can be released via a soft restart.

```
UA:C2F0:080F    V8 R2
UA:C300:0971    V10 R1
UA:C300:0B39    V11 R0
```

With **CEVT:E2 CSEV:28 CST: 0**, it signals a simultaneous Retrieve-Release (an UFIP station retrieves a held call, but the held party releases at the same time – in the same second). In this case the advisory is just for information and can be ignored.

2 OpenScape 4000 Assistant/Manager

2.1 Prerequisite for every ticket

- Provide remote access details if available,
- Check if a correction is available in the **last HF** of this load and upgrade the system to **latest HF available** before escalation to eliminate redundant PRB escalations
- Provide the result of commands **getosversion** and output of the **pkginfo** command for the application/component launched from the ssh connection to Assistant or Manager: e.g. **rpm -qi ASmpcid**
- Detailed description of the problem, steps to regenerate the issue or check if it is customer specific environment
- Screenshots describing the steps that were done and the history of the OpenScape 4000 (e.g. SWA, HBR,…) after which action(s) the problem appeared?
- Output of the following Linux commands

```
procadmin -l
```

```
ps -efly
```

2.2 Trace download tool

The Trace Download Tool provides profiles for certain problems or components like e.g. Assistant reboot problems, Connectivity problems, Platform co-operation, Operating System, Software Update and many others.

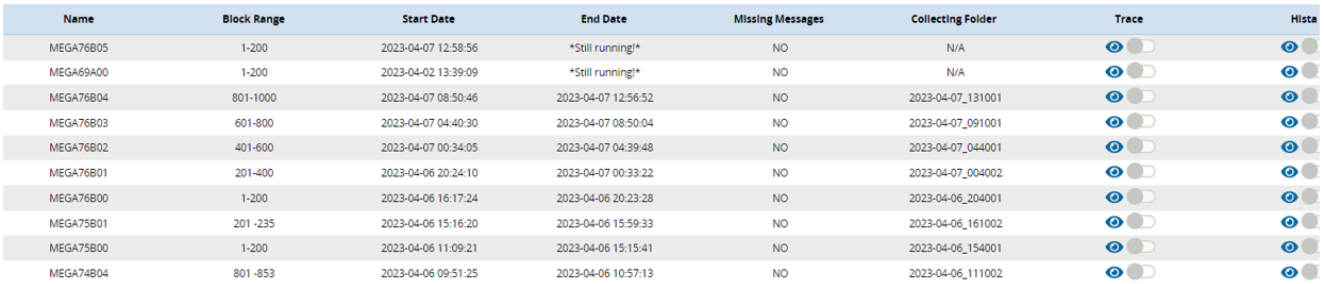
2.3 Permanent tracing tool

This tool can be found in **Expert Mode** -> **Permanent Logging**, it is used for RMX troubleshooting and it has 2 major tabs: **System Status** and **MEGA traces**.

System status - System version, RMX memory allocation, RMX statistics, RMX DIAG partition, Error message overview, AUTO trace, Inventory Data, REGEN

About	Information	Last update	Action
System status	AMO SIGNL	2023-04-07 13:40:01	
System Version	APS/Sysinfo	2023-04-07 13:40:01	
RMX memory allocations	AMO DIMSU	2023-04-07 13:40:01	
RMX statistics	AMO ZAUSL	2023-04-07 13:40:01	
RMX DIAG partition	DIAG partition usage info	2023-04-07 13:40:01	
Error message overview	AMOs HISTA/VADSU/VADSM	2023-04-07 13:40:01	
AUTO trace	CC-A, CC-B (duplex)	2023-04-07 13:40:01	
Inventory Data	HIM/PB file info & GWM board list	2023-04-07 13:40:01	
REGEN	Last REGEN ALL file creation date	*2023-04-06 17:17:22*	
		Download all (incl. LOGBK, ADP and CC logs)	

MEGA Traces-displays a table with the name, block range, time stamps, missing messages and collecting folder for every MEGA trace (generated by the permanent tracing task in RMX) copied from RMX. The GUI also presents a download button allowing individual download for each MEGA trace file.



Name	Block Range	Start Date	End Date	Missing Messages	Collecting Folder	Trace	Hista
MEGA76B05	1-200	2023-04-07 12:58:56	*Still running!*	NO	N/A		
MEGA69A00	1-200	2023-04-02 13:39:09	*Still running!*	NO	N/A		
MEGA76B04	801-1000	2023-04-07 08:50:46	2023-04-07 12:56:52	NO	2023-04-07_131001		
MEGA76B03	601-800	2023-04-07 04:40:30	2023-04-07 08:50:04	NO	2023-04-07_091001		
MEGA76B02	401-600	2023-04-07 00:34:05	2023-04-07 04:39:48	NO	2023-04-07_044001		
MEGA76B01	201-400	2023-04-06 20:24:10	2023-04-07 00:33:22	NO	2023-04-07_004002		
MEGA76B00	1-200	2023-04-06 16:17:24	2023-04-06 20:23:28	NO	2023-04-06_204001		
MEGA75B01	201 -235	2023-04-06 15:16:20	2023-04-06 15:59:33	NO	2023-04-06_161002		
MEGA75B00	1-200	2023-04-06 11:09:21	2023-04-06 15:15:41	NO	2023-04-06_154001		
MEGA74B04	801 -853	2023-04-06 09:51:25	2023-04-06 10:57:13	NO	2023-04-06_111002		

2.4 Component Tracing

2.4.1 Configuration Management

It must be checked whether the CM processes are running (`cs_control check`) and since when (time stamp). All processes in group cm_subadm should be ACTIVE (except *umproc if not activated for UM usage, *dlsproxy if not activated for DLS usage, *cmipsa if not activated for group phonebook usage).

```
cmproc_dom_umproc       Registered      Tue Apr  4 10:57:05 2023       cm_subadm
cmproc_dom_cmipsa       Registered      Tue Apr  4 10:56:55 2023       cm_subadm
cmproc_dom_cdbserver    Active          Tue Apr  4 10:57:04 2023       cm_subadm       12537
cmproc_dom_dlsproxy     Registered      Tue Apr  4 10:56:55 2023       cm_subadm
cmproc_dom_uxbproc      Active          Tue Apr  4 10:56:55 2023       cm_subadm       12545
cmproc_dom_uxsfiled     Active          Tue Apr  4 10:56:55 2023       cm_subadm       12542
cmproc_ccs              Active          Tue Apr  4 10:57:04 2023       cm_subadm       12855
cmproc_dom_uxlmain      Active          Tue Apr  4 10:56:55 2023       cm_subadm       12544
cmproc_dom_cserver      Active          Tue Apr  4 10:56:55 2023       cm_subadm       6520
cmproc_dom_convbjob     Active          Tue Apr  4 10:56:55 2023       cm_subadm       12543
cmproc_dom_uxsdbsyn     Active          Tue Apr  4 10:56:55 2023       cm_subadm       12541

cmproc_cmipbp           Registered      Sun Apr  2 13:41:16 2023       cm_subadm
cmproc_cmipsa           Registered      Sun Apr  2 13:41:13 2023       cm_subadm
cmproc_ccs              Active          Sun Apr  2 13:41:16 2023       cm_subadm       81406
cmproc_umproc           Registered      Sun Apr  2 13:40:59 2023       cm_subadm
cmproc_dbwrite          Active          Sun Apr  2 13:41:13 2023       cm_subadm       81069
cmproc_uxbproc          Active          Sun Apr  2 13:41:07 2023       cm_subadm       81235
cmproc_cnonserver       Active          Sun Apr  2 13:41:05 2023       cm_subadm       81193
cmproc_ldbsync          Active          Sun Apr  2 13:41:09 2023       cm_subadm       81295
cmproc_cserver          Active          Sun Apr  2 13:40:59 2023       cm_subadm       80858
cmproc_uxsstrup         Active          Sun Apr  2 13:41:13 2023       cm_subadm       81385
cmproc_dbwNotifHandler  Active          Sun Apr  2 13:41:03 2023       cm_subadm       81070
cmproc_soapserver       Active          Sun Apr  2 13:41:11 2023       cm_subadm       81342
```

CM Traces for general purpose should be activated as below:

1) Stop all CM processes with the commands: `procadmin-t -g cm_subadm` or `cs_control stop`
2) Activate the trace by creating file any.tc `cp –a /var/cm/sad/trace/any.muster /var/cm/sad/trace/any.tc`
3) Modify any.tc with the vi editor, so that the trace level is set to 5 and the trace size is 10000-15000 and save it `-o 15000 @ -t any -m 5 !`

4) Start all CM processes with the commands: `procadmin -s -g cm_subadm`

   or `cs_control restart`
5) Clean (rm *) the old batches under the /opt/cm/sad/diabatch/SAVE directory, so that only the batches relevant to the problem to be collected after reproducing the error
6) Try to reproduce the problem, all relevant data will now be traced.

NOTICE: If the error requires only a **cserver** trace (e.g if the problem is that a wrong VERIFY message is displayed), the process id can be checked with `cs_control check` and `kill -16 <<cserver process id>>` would be sufficient instead of complete process restart to start the cserver tracing.

Else, `kill -16 ``pidofproc cserver``` could be used directly without checking the cserver process ID beforehand.

NOTICE: any.tc must be created and have **same access rights** as **any.muster** otherwise there will be no traces available. `-rwxrwxr-x 1 sad unity 27 Dec 9 09:07 any.tc -rwxrwxr-x 1 sad unity 25 Feb 28 20:46 any.muster`

The following data should be gathered:

- Trace files in `/var/cm/sad/trace`. These files should be converted to a readable format within the /var/cm/sad/trace directory directly after reproducing error (otherwise traces are overwritten):
  ```
  e.g. trol cserver.td >  cserver.txt
  trol ldbsync.td > ldbsync.txt (Assistant)
  trol uxsdbsyn.td >  uxsdbsyn.txt  (Manager)
  trol dbwrite.td > dbwrite.txt (Assistant)
  trol dbwNotifHandler.td > dbwNotifhandler.txt
   (Assistant)
  ```
- Same command (`trol`) can be used for all *td files .
- All translated files ending with *txt and also *td must be provided together with the below data.
- All available *cmd, *.prt, *.psh files should be collected immediately after reproducing the error from `/opt/cm/sad/diabatch/SAVE directory`
- Screenshots showing the steps of reproducing error are needed for escalations.

INFO: Different error profiles in CM will require different trace data, which will be variations of the above described.

For example:

- Upload problems and synchronization relevant problems require ldbsync (Assistant) / uxsdbsyn.td (Manager) & cserver.td traces and the batch files of the upload.
- Error messages displayed in the GUI with a 4- or 5-digit error code requires cserver traces and a screenshot.

- If the error message that is displayed is shown in capital letters in the Assistant, the error message is displayed from the AMO side, therefore a screenshot, cserver.td and also the batches are required.
- For DLS synchronization problems with OpenScape 4000 Manager , `/var/cm/sad/trace/cserver.td & dlsproxy.td` in OpenScape 4000 Manager and DLS server traces are required.
- For DLS synchronization problems with OpenScape 4000 Assistant , `/var/cm/sad/trace/cserver.td & /tmp/dlsapisess_-XXX` together with DLS server traces are required.

To deactivate the trace:

1) Stop CM processes: `procadmin -t -g cm_subadm`

   or `cs_control stop`
2) Deactivate the trace:

   `rm /var/cm/sad/trace/*.tc`
3) Start CM processes:

   `procadmin -s -g cm_subadm`

   or `cs-control stop`

2.4.1.1 Additional Trace Information for CM Problems Related to CMI Move

Investigation of a problem related with Assistant Cordless Move is a complex one and involves both the CMI LW and Assistant team, so you have to collect all the needed information like when you escalated a ticket to CMI OS4K LW and Assistant. Much more for CMI some CMI specific traces are needed.

Trace Points CMI Move

The following section contains the commands in English AMOs. This is needed to complete the steps at CMI Tracing on page 73 .

The customer must activate the CMI specific traces. In this file, the customer must adapt the file modifying the LTU, and SLOT according to the configuration.

```
IF PROMPTING THEN ERROR "An error occured \n" DIALOG
IF ("*MEMORY*") THEN ERROR "A DIMSU Memory error occured \n" DIALOG
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=52,FORMAT=HEX,CMDARY=00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=101,FORMAT=HEX,CMDARY=05;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=102,FORMAT=HEX,CMDARY=FF-FF-FF-FF-FF-
FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=122,FORMAT=HEX,CMDARY=03;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=123,FORMAT=HEX,CMDARY=01;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=124,FORMAT=HEX,CMDARY=01;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=125,FORMAT=HEX,CMDARY=01;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=126,FORMAT=HEX,CMDARY=00-00;
EXEC-SLCB:CTYPE=CDAC,LTU=17,SLOT=4,POS=101,LENGTH=27;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=128,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=130,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=132,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=134,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=136,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=138,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=140,FORMAT=HEX,CMDARY=02-01;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=142,FORMAT=HEX,CMDARY=FF-FF;
```

```
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=144,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=146,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=148,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=150,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=152,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=154,FORMAT=HEX,CMDARY=02-02;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=156,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=158,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=160,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=162,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=164,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=166,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=168,FORMAT=HEX,CMDARY=0D-01;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=170,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=172,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=174,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=176,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=178,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=180,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=182,FORMAT=HEX,CMDARY=08-04;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=184,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=186,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=188,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=190,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=192,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=194,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=196,FORMAT=HEX,CMDARY=07-01;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=198,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=200,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=202,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=204,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=206,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=208,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=210,FORMAT=HEX,CMDARY=27-02;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=212,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=214,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=216,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=218,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=220,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=222,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=224,FORMAT=HEX,CMDARY=0F-01;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=226,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=228,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=230,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=232,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=234,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=236,FORMAT=HEX,CMDARY=FF-FF;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=238,FORMAT=HEX,CMDARY=01-02;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=240,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=242,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=244,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=246,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=248,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=250,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=252,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=254,FORMAT=HEX,CMDARY=00-00;
```

```
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=256,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=258,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=260,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=262,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=264,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=266,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=268,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=270,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=272,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=274,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=276,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=278,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=280,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=282,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=284,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=286,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=288,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=290,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=292,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=294,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=296,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=298,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=300,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=302,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=304,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=306,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=308,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=310,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=312,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=314,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=316,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=318,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=320,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=322,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=324,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=326,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=328,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=330,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=332,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=334,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=336,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=338,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=340,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=342,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=344,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=346,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=348,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=350,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=352,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=354,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=356,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=358,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=360,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=362,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=364,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=366,FORMAT=HEX,CMDARY=00-00;
```

```
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=368,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=370,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=372,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=374,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=376,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=378,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=380,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=382,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=384,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=386,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=388,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=390,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=392,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=394,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=396,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=398,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=400,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=402,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=404,FORMAT=HEX,CMDARY=00-00;
CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=NO,LTU=17,SLOT=4,POS=406,FORMAT=HEX,CMDARY=00-00;
EXEC-SLCB:CTYPE=CDAC,LTU=17,SLOT=4,POS=128,LENGTH=280;

// Start
// CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=YES,LTU=17,SLOT=4,POS=101,FORMAT=HEX,CMDARY=05;
// Stop
// CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=YES,LTU=17,SLOT=4,POS=101,FORMAT=HEX,CMDARY=03;
// Delete
// CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=YES,LTU=17,SLOT=4,POS=101,FORMAT=HEX,CMDARY=00;
```

2.4.1.1.1 Preliminary requirements for successful Cordless Move

Before attempting to perform Cordless Move, please see the information below:

- For a DECT phone to be moved, it must be in service (reachable and in idle state).

  A DECT phone which is switched off, outside of the radio coverage area or busy cannot be moved because, during the Cordless Move process, the DECT phone itself receives a message to update its Read Only Memory. This can only performed if the DECT phone is in service.
- Keep in mind the following important restriction:

  When Cordless Move is performed from one node to another, the DECT phone to be moved must reside in the radio areas of the BSs of the destination node. A node means shelves from 1 to 16, two shelves if they are in an Extended Enterprise Gateway, or any individual shelf (NCUI), softgate or Enterprise Gateway connected via IP.

  Exception to this restriction is only in case of vSLC cards which reside on a node where there is no base station.

  For example, if we have two nodes (one in Frankfurt and one in Berlin), and we have a DECT phone registered in Frankfurt we cannot move it to the Berlin node if we are located in Frankfurt. To move it we have to switch it off in Frankfurt, send it to Berlin and switch it on. While it is in Berlin, the operation is possible because it is in roaming and the DECT phone can be moved to a board which is in the Berlin node, as it is in the radio areas of the BSs of the boards which are in the Berlin node. So, for such a situation, the Cordless Move will be successful only if phone is located in the Berlin node. This is because only subscribers in their own node can be registered and

Cordless Move involves an automatic registration in the destination node and the registration window can be opened only in one node (the destination node).

- The actual HOME-SLC (the board where the DECT phone is registered and we want to move it) must be in READY status.
- Sometimes, Cordless Move might not work for a DECT phone because the queue is blocked due to previous failed attempts of moving other phones. For the operation to complete, the queue must be released first.

  To ensure that the Cordless Move process is successful, we must reset the "queued" status. This can be performed in one of the following ways:

  – For all DECT phones, this is possible by establishing an ssh connection to the Assistant machine and executing the following command:
  ```
  . /opt/informix/ids_env_var;echo "update port set
   rel_status = \"\" " | dbaccess cdb
  ```
  If the command is successful, the following output should be displayed:

  ```
  Database selected.
  443 row(s) updated.
  Database closed.
  ```
  – Another possible way to reset the "queued" status is via the Assistant. Before starting Cordless Move, after you have searched for the DECT phone you want to move in Assistant, navigate to the Cordless tab and click the **Reset Cordless Move Status** button on the bottom left of the window.

  NOTICE: This operation is available only starting with V10R1.42.

  If no station is in this status, the following message will displayed: "We cannot move a CMI with "Queued" or "After Queuing Process State. (28082)".

2.4.1.1.2 Term definition and preparations for CMI tracing and Assistant traces

2.4.1.1.2.1 CMI Tracing

This chapter presents an example of moving a DECT subscriber to another board.

General information:

- Home-SLC is the SLC board where the DECT phone is configured (registered).
- Visitor-SLC is the SLC board where the DECT phone is located (it resides in the radio areas of the BSs of this SLC board).
- Destination-SLC is the SLC board where the DECT phone has to be moved.

NOTICE: In some case, the Home-SLC and the Visitor-SLC are the same.

This example describes the moving of the DECT subscriber 3013 to a board located on PEN 1-20-14.

To find the Home-SLC for the DECT subscriber 3013, run the following AMO command:

```
REG-SBCSU:3013;
```

The command output will display the slot on the PEN where the phone has been configured. In this example, the slot on the PEN is **1-17-8**.

```
ADD-SBCSU:STNO=3013,OPT=CMI,PEN=1-17-8-110,DVCFIG=RADIO,
COS1=27,COS2=27,LCOSV1=6,LCOSV2=6,LCOSD1=1,LCOSD2=1,
DPLN=0,ITR=0,SSTNO=N,COSX=0,SPDI=10,REP=0,STD=15,
INS=Y,RCBKB=N,RCBKNA=N,DSSTNA=N,DSSTNB=Y,DIGNODIS=N,
HMUSIC=0,TEXTSEL=ENGLISH;

AMO-SBCSU-111  STATION AND S0-BUS CONFIGURATION OF
 SWITCHING UNIT REGENERATE COMPLETED;
```

To find where subscriber 3013 (which is configured on the PEN = 1-17-8-110) is located, run the following AMO command:

```
DISPLAY-SLCB:CTYPE=PPSC,TYPE=DATA,LTU=17,SLOT=8,PORT=110,POS=38,LENGTH=1;
H500:  AMO SLCB STARTED
    CONTAINER  =   PPSC
    LTU  =   17    SLOT =    8     PORT = 110

   +--------+-------------------------------------------------------------+
   |        | 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 |
   +--------+-------------------------------------------------------------+
   |  20    |                                                          05 |
   +--------+-------------------------------------------------------------+

AMO-SLCB -111  SLCB - ADMINISTRATION OF SLC BOARD DATA
DISPLAY COMPLETED;
```

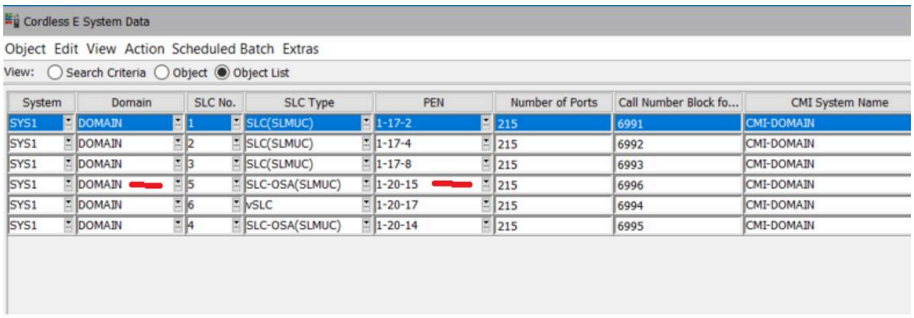
In this example, the command output shows that DECT 3013 (**PEN=1-17-8-110**) is located on board no.5.

IMPORTANT: The board number is hexadecimal and it must be converted to decimal. This is because we will search for the corresponding PEN of the board which has the decimal value corresponding to the hexadecimal value in the command output.

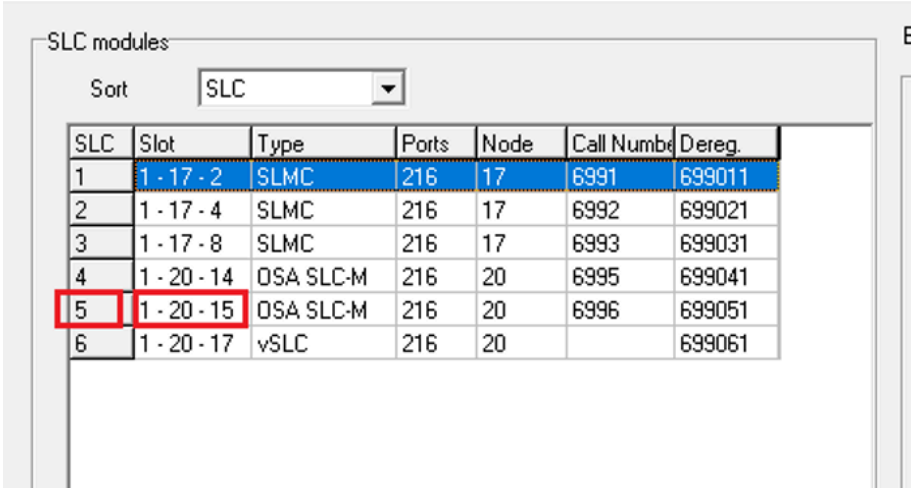
We can find the board which corresponds to "5" (hexadecimal) in one of the following ways:

- Open the Assistant and navigate to **Configuration Management** > **Station** > **Station** > **Cordless E Administration** > **Cordless E System Data**, then click **Search**. Next, click **Object list**.

  As displayed in the figure below, the PEN number of board 5 is **1-20-15**.



- Open CATOOL and navigate to **Cordless** > **Modules and Base Stations** and identify the PEN which corresponds to the desired SLC.



  Result:

  We want to move the cordless phone 3013 which has:

  – HOME-SLC = 1-17-8
  – Visitor-SLC = 1-20-15
  – Destination-SLC = 1-20-14

Next, we need to create 3 files with the content of Trace Points CMI Move on page 69. Each file corresponds to the HOME-SLC, Visitor-SLC and Destination-SLC cards.

Each file must be adjusted as described below:

- For the first file (for example `Trace_Points_HOME-SLC-1-17-8.txt`), replace every occurrence of the text **LTU=17,SLOT=4** with **LTU=17,SLOT=8**.
- For the second file (for example `Trace_Points_Visitor-SLC-1-20-15.txt`), replace every occurrence of the text **LTU=17,SLOT=4** with **LTU=20,SLOT=15**.
- For the third file (for example `Trace_Points_Destination-SLC-1-20-14.txt`), replace every occurrence of the text **LTU=17,SLOT=4** with **LTU=20,SLOT=14**.

Each of these files with AMO commands are for English AMOs. Each contains at the end some lines which are commented. They will be not executed when the main file is executed because they are commented, but a part of them must be executed separately, only when required, as explained below (making traces for Assistant and CMI LW).

```
//Start
//CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=YES,
LTU=17,SLOT=4,POS=101,FORMAT=HEX,CMDARY=05;

//Stop
//CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=YES,
LTU=17,SLOT=4,POS=101,FORMAT=HEX,CMDARY=03;

//Delete
//CHA-SLCB:CTYPE=CDAC,TYPE=DATA,TRANSFER=YES,
LTU=17,SLOT=4,POS=101,FORMAT=HEX,CMDARY=00;
```

"Start" is automatically executed when the file with AMO commands is executed.

"Stop" (byte 101 = 03) is to stop a trace.

"Delete" (byte 101 = 00) is to delete a trace.

2.4.1.1.2.2 Assistant Traces

To make traces on the Assistant, you must start the **Configuration Management** profile. For this, open the Assistant and navigate to the **Diagnostics** menu, then check the **Configuration Management** profile option and click **Start profiles** at the bottom of the window.

Upon successfully activating the profile, the following message is displayed: "Activating the profile will cause a restart of certain processes". Click **OK** to confirm the action.

Next, perform the desired scenario and all relevant steps.

To collect the Assistant traces, go back to the Assistant and navigate again to **Configuration Management** > **Diagnostics** and check again the **Configuration Management** profile option. While checking the field, the profile will be visible as "Started".

Finally, click **Download logs**. A file with the extension `tar.gz` with the Assistant logs is downloaded to your computer (`logs-assi-IPAddress-yyyymmdd-hhmmss.tar.gz`). Typically, the `tar.gz` file with logs is large.

2.4.1.1.2.3 Making traces for Assistant and CMI LW

To make traces for Assistant and CMI LW, follow the steps below:

1) Initiate an ssh connection to the Assistant and run the commands below:

a) To view the Cordless Move status:

```
. /opt/informix/ids_env_var; echo "select rel_status,
 extension, switch_name from port" | dbaccess cdb
```

b) To reset status "D30" for a specific extension (in this example: 3013):

```
. /opt/informix/ids_env_var; echo " update port set
 rel_status=\"\" where rel_status='D30' and extension=
 3013 " | dbaccess cdb
```

Please collect the output of the commands above and provided them to the support team, together with the rest of the data.

2) Start the Assistant as described in Assistant Traces on page 76 and reset the "Queued" status, as described in Preliminary requirements for successful Cordless Move on page 72.
3) Start the CMI trace points by making a COMWIN connection and executing the files created at CMI Tracing on page 73:
   - `Trace_Points_HOME-SLC-1-17-8.txt`
   - `Trace_Points_Visitor-SLC-1-20-15.txt`
   - `Trace_Points_Destination-SLC-1-20-14.txt`

   Please note that if HOME-SLC is equal with Visitor-SLC, then these files are identical and only one file must be executed.
4) Perform the desired scenario and all relevant steps.
5) Wait for 10 minutes before proceeding with the next step.

   This is mandatory because when CMI trace point is activated, a lot of advisories are written in the HISTA file and they have a low priority. Depending on the load of the system, this might be present in the HISTA only after some minutes.
6) Stop the CMI traces points from executing for each file with trace points commands (as described in CMI Tracing on page 73).
7) Collect the HISTA, LOGBK, Assistant logs, as described in Assistant Traces on page 76.

   Make a ssh connection to the Assistant and execute the below 2 Linux commands below:

   ```
   . /opt/informix/ids_env_var; echo "select
    rel_status,extension from port where extension=3013"|
    dbaccess cdb
   ```

   Here, 3013 is the subscriber number which failed during movement.

   Save the output of the commands.
8) Describe the scenario and mention the timestamp for each step.
9) Delete the trace settings, as described in CMI Tracing on page 73.

   This step must not be omitted, otherwise, the system will be loaded.

In conclusion, the following information must be provided to the support team:

- The command outputs from step 1 on page 76.
- HISTA (starting with the time then the CMI trace points have been activated and until they have been stopped).
- LOGBK
- Assistant logs
- The output from Assistant commands from 7 on page 77.
- A clear description of the scenario and the timestamp.

2.4.1.2 Additional Trace Information for CM Problems Related to OpenScape User Management

To activate traces on the Manager/Assistant for **UM** (User Management) relevant problems, following trace settings should be done:

1) Open the file**/opt/cm/sad/UMP/config/traceconfig.xml** on the Manager **GVS105:/opt/cm/sad/UMP/config # pwd /opt/cm/sad/UMP/config GVS105:/opt/cm/sad/UMP/config # ls -lrt traceconfig.xml -rw-r----- 1 sad unity 2736 Mar 8 19:22 traceconfig.xml**
2) Modify the file so that the value **"INFO**" is replaced with **"XML**" in the TRACER_LEVEL line and the value "**OVERWRITE**" is replaced with "**APPEND**" İn the TRACER_MODE line.

```
<! --Tracer Configuration File
Possible Tracer levels: XML,DEBUG,INFO,WARN,ERROR,FATAL

Possible Tracer modes: OVERWRITE,APPEND
-->
<HPM ver="1.0">
<TRACER>
<OPERATION>ACTIVATE</OPERATION>
<TRACER_LEVEL>INFO </TRACER_LEVEL>
<TRACER_MODE>OVERWRITE </TRACER_MODE>
</TRACER>
<DETAILS>
```

3) Save file as above andrestart the UM Process via **UM_control activate**

UM relevant Manager traces are written into the folder **/opt/cm/sad/UMP/trace/ ***

Manager/Assistant umproc process has to be activated via **UM_control activate manually.**

If a Manager/Assistant has been introduced to another UC server before, the upload may hang or fail.

To prevent this, it is required to delete the below file and restart the umproxy process with UM_control:

GVS105:/opt/cm/sad/UMP/config # ls -lrt Sdk*

-rw-rw-rw- 1 sad unity 275 Mar 25 11:28 SdkConfig4444.xml

2.4.1.3 OpenScape 4000 Manager - Enhanced CM traces when Batch Generator is involved

For obtaining the needed traces the below settings must be done:

1) **vi /opt/ncc/bin/options** and remove # from the begginning of the line below

   #FM_DEBUG=ON; export FM_DEBUG

   vi /opt/ncc/bin/fmserver.sh and modify TRACERECORDS from 50.000 to 10.000.000
2) Stop and start processes:

   procadmin -t -d FM_FTsucc

   procadmin -s -d FM_FTsucc

   Traces will be found under **/var/ncc/trace**
3) In Batch Overview double click on the job that failed and send us the screenshots.

   Extend the Batch Number, CmdFile and Description so we can see the details of the job.

   It must be the case that we need RMX, Logbook and Hista for the affected OpenScape 4000 system with the corresponding timeframe.

   E.g. use case – when certain batches are not received by all OpenScape 4000 systems configured in OpenScape 4000 Manager

   vi opt/cm/sad/bin/uxistenv.sh
4) Search for export CS_API and remove the # from the below 3 lines:

```
export FM_DEBUG=ON
export FM_TRACE=ON
export TRACERECORDS=1000000
.…
export CS_API
#************************************************
#   BGEN trace activation convbjob
#
#export FM_DEBUG=ON
#export FM_TRACE=ON
#export TRACERECORDS=1000000
#************************************************
….
```

5) Then **cs_control restart**
6) And collect the logs from below once problem was reproduced:

   /var/cm/sad/trace/convbjob-addbjob.td

   /var/ncc/trace/ftserv.txt

   /var/ncc/trace/ftserv-mpci.txt

2.4.2 Collecting agent (COL)

2.4.2.1 How to collect COL Traces

Activate COL tracing

1) Stop the processes via:

```
procadmin -tg COL
```

vi /var/col/trace/any.trc and set the trace line levels like below:

```
-o 14000  @ 5
-t any
m 5 !
```

2) Start the processes:

```
procadmin -sg COL
```

Go to **COL →Options→Settings** and check that "**Save Input Files (CDRs)**" options is active in order to have the RMX CDR files saved under /var/col/data/backup

After the traces are activated, reproduce the error and collect the following:

- All the files under the directory **/**var/col/trace
- The RAW CDR files
- Go to the **/var/col/data/backup/<System_ID>** and get the last created CDR files in that directory for the problematic Assistant.
- All the messages files from the corresponding timeframe from the directory **/var/log**
- The outputs of the following AMO's from the problematic Assistant:

```
cha-funct:slang=eng;
reg-selg;
reg-sels;
reg-ftbl;
reg-deftm;
```

- Screenshots from:

  COL → Options → COL Paths TAB

  COL → Options → Process Controlling TAB

  COL→ Collecting Status Page. MAKE SURE THAT the screenshot shows the Last Collecting Status of the Switch for which you have collected the data

  COL → Definition of Input Lines → Colecting Agent → COL administration

  COL → Definition of Input Lines → Performance Management

Deactivate COL tracing:

1) Remove the **any.tc** file : **(rm /var/col/trace/*.tc)**

2) Stop the processes via:

```
procadmin -tg COL
```

3) Delete all the old traces

```
rm *.old
rm *.trace
```

4) Restart the processes:

```
procadmin -sg COL
```

5) Go to COL → Options → Settings and uncheck the **"Save Input Files (CDRs)"** box.

2.4.2.2 Possible Scenarios

If the COL-CM History tables are filled up, it may cause performance issues for COL. In that case, please provide the result of the following commands run on the problematic Assistant.

./opt/informix/ids_env_var

```
echo "select count (*) from col_port" | dbaccess cdb
echo "select count (*) from col_pin" | dbaccess cdb
echo "select count (*) from col_persdat" | dbaccess cdb
echo "select count (*) from col_switch" | dbaccess cdb
echo "select count (*) from col_domain" | dbaccess cdb
```

2.4.3 Performance Management

Before activating the traces, please make sure that COL (for CDR generation) is properly configured under **System Management page**.

2.4.3.1 How to collect PM traces

There is no tracing in PM by default. In order to activate the traces, please do the following:

1) **Activate PM tracing:**

   vi /var/pm/trace/any.trc and set the trace line levels like below:

   ```
   -o 14000 @ 5
   -t any
   m 5 !
   ```

2) Stop the processes via:

   procadmin -tg PM

3) Start the processes:

   procadmin -sg PM

   Go to **COL →Options→Settings** and check that "**Save Input Files (CDRs)**" options is active in order to have the RMX CDR files saved under /var/col/data/backup

After traces are activated, reproduce the error and collect the following:

- All the files under the directory /var/pm/trace
- The collected RAW CDR files;
- Go to the /var/col/data/backup/<System_ID> and get the last created CDR files in that directory for the problematic Assistant.
- All the messages files from the corresponding timeframe from the directory /var/log
- OpenWebstart Console logs

2.4.3.2 PM tables

Additionally, the report generation issues can be caused by incorrectly generated CDR on RMX side or incorrectly processed CDR on COL side. If it is not possible to identify the root cause from the traces, it might be necessary to provide the customer PM data load and the scenario. The following tables are normally required:

- **pm_cdrdatatbl**
- pm_filterstbl
- **pm_filterswitchtbl**
- **pm_filteritemstbl**

The following tables can also be provided depending on the problematic report(s):

- Cordless Base Stations: **pm_basestndatatbl**
- Cordless SLC Cards:**pm_slc16datatbl**
- System Statistics-Feature Access Data: **pm_featuredatatbl**
- Trunk Group – Belau: **col_tm_data1, col_tm_data2**
- Trunk Group – CDR: **pm_cdrdatatbl, buend**
- Trunk Group – Cyclic Check: **col_tg_check**
- Attendant Consoles: **col_acsu_info**

E.g.: How to save the content of the tables:

. /opt/informix/*var

echo "unload to /.AS/BACKUP/pm_filterstbl select * from pm_filterstbl" | dbaccess cdb

If a verification needs to be done directly on the system (without copying/ unloading the content of the table), you can use the following command with the specific timestamp of the scenario

. /opt/informix/*var

echo "select * from pm_cdrdatatbl where " | dbaccess cdb

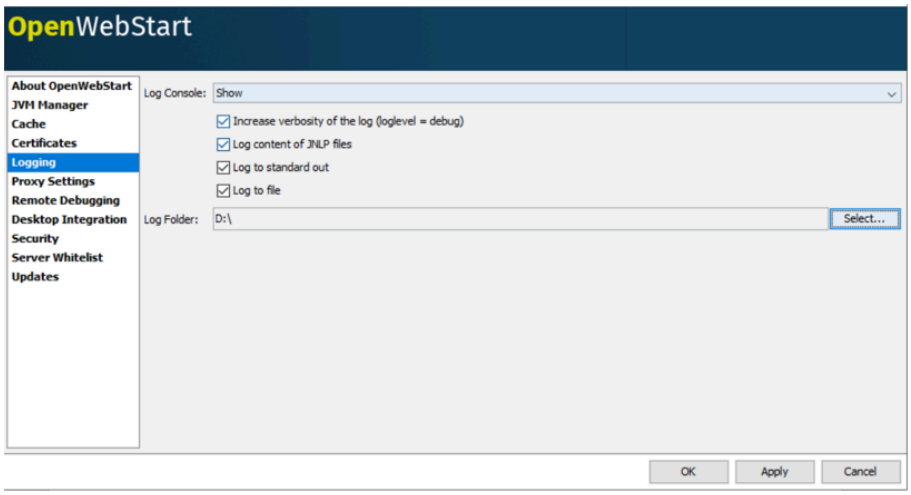
There is no tracing in PM by default. In order to activate the traces, please do the following:

2.4.4 Report Generator (REPGEN)

NOTICE: The Trace Tool can be used for collecting RepGen traces.

Before collecting the RepGen traces:

- The OWS windows should be closed and all files from Cache of OWS should be purged
- Enable the OWS logging as in the image below



- Reproduce the error
- Collect the resulted data from the path where it has been set

2.4.4.1 How to collect RepGen traces

1) **Activate RepGen tracing:**

   vi /var/repgen/trace/iprepgen.trc and set the trace line levels like below:

   ```
   -o 14000 @ 5
   -t any
   m 5 !
   ```

2) Stop the processes via: **procadmin -tg RepGen**
3) Start the processes: **procadmin -sg RepGen**
4) After traces are activated, reproduce the error and collect the following:
   - **a)** All the files under the directory**/var/repgen/trace**
   - **b)** All the files under the directory **/var/repgen/tomcat**
   - **c)** All the messages files from the corresponding timeframe from the directory**/var/log**
   - **d)** OpenWebstart Console logs
   - **e)** Deactivate tracing by setting **/var/repgen/trace/iprepgen.trc** back to the default values and restart the RepGen processes.

2.4.5 Problems with Cordless relevant Statistics Reports (PM-AMO)

PM-AMO traces are required if there is problem with the cordless relevant statistics reports.

1) First, check if Collect Cordless Data options are checked under **System Management -> PM** tab in Manager

2) In Assistants, the binaries **PmAmoProc** and **PmLcstProc** located under **/opt/pmamo/bin** need to run every 15 minutes. So, check the crontab entries by:

   su pmamo

   crontab –l >
3) There should be a text file under **/opt/pmamo** in Assistant

   The Cordless Card information is located in two files under /var/mpcid/ft/col and they are updated by the Assistant every 15 minutes.
4) Check if Manager COL is collecting this data (pm_lsd, pm_zausl, pm_ziel) properly from here. You may need to activate COL tracing described above.

2.4.5.1 How to collect PM-AMO traces

The trace level of the files **PmAmoProctrc** and **PmLcstProctrc** located under **/var/pmamo** can be increased if needed.

1) Enable tracing by running **/opt/pmamo/scripts/enable_pmamo_tracing.sh** in the problematic Assistant.
2) Once enabled, the files **PmAmoProctrc** and **PmLcstProctrc** are converted into **PmAmoProc.trc** and **PmLcstProc.trc**
3) The traces **(*.trd**) will be created under **/var/pmamo**
4) Get the latest trace files and disable tracing with the following command: **/opt/pmamo/scripts/disable_pmamo_tracing**
5) PM-AMO traces are required if there is problem with the cordless relevant statistics reports.

2.4.6 License Management (LicM)

Remark: The Trace Tool is insufficient for collecting LicM Traces for now. The profile is defined but trace level is not increased.

Please utilize the instructions below for collecting trace data:

- Send the following screenshots:
  - License Management -> Display License Details
  - License Management -> Read License data from server
  - License Management Tool -> “Load LD” tab
- Send the following LicM traces:
  - Go to /opt/licm/bin of the Manager and send the output of the following commands:
    - Assistant:/home/engr # cd /opt/licm/bin/
    - Assistant:/opt/licm/bin # ./licDataAsString.x -v getosversion
    - Manager:/home/engr # cd /opt/licm/bin/
    - Manager:/opt/licm/bin # ./licDataAsString.x -v getosversion

How to activate traces :

- Change the trace level from 0 to 9 in the following file:

  vi /opt/licm/cfg/LicMd.ini

  trace 9
- Go to /var/licm and change any.trc and LicMd.trc as below:

  Assistant:/var/licm # cat LicMd.trc

  -o 14000 @ +

  -t any mod

  -m 5 !

  Assistant:/var/licm # cat any.trc

  -o 14000 @ +

  -t any mod

  -m 5 !

  Assistant:/var/licm #

- Restart of LicM daemon is required for trace activation:
  - procadmin -tg LicM
- Wait for 20 seconds and then start the deamon
  - procadmin -sg LicM

After traces are activated, the error can be reproduced.

Data collection should follow it by using the following:

cd /home/engr

ps -ef >>/var/licm/comout

procadmin -l >>/var/licm/comout

rpm --verify ASlicm>>/var/licm/comout

ls -l /var/licm >>/var/licm/comout

ls -l /var/hf>>/var/licm/comout

df -hk >>/var/licm/comout

tar -cvzf licm_data.tar.gz /var/licm /opt/licm

The resulted archive /home/engr/licm_data.tar.gz must be collected and send it to us.

- Trace deactivation can be made by undoing the changes made to the above files (LicMd.trc, any.trc, LicMd.ini) followed by a restart of LicM deamon.

- CLA logs from /opt/cla/log/

2.4.7 License Management Tool (LMT)

Remark: The Trace Tool cannot be utilized for collecting LMT traces for now since the profile is not available.

- Activate LMT tracing:

  vi /opt/lmt/trace/lmttask.tc

  vi /opt/lmt/trace/lmtd.tc

  -o **14000** @ -

  t **any** mod m

  5 !
- Go to the file /opt/lmt/config/lmt.cfg and set SAVEAMOANSWER to 1

  Uncomment export SAVEAMOANSWER=0 and change it to SAVEAMOANSWER=1 like:

  ..... #

  default: 0 export

  SAVEAMOANSWER=1

  # SEQDIR defines directory where information about sequentional

  .....

  Restart the LMT processes:

  procadmin –tg LMT

  procadmin –sg LMT
  Generate the error and start manual LMT port counting:

  – Via LMT GUI:

    Start port counting via GUI for all or one of the switches.

    LMT >> Action >> Load License Data >> Get Actual Values
- Via SSH Console:

  For all switches, please use:

  su lmt

  /opt/lmt/bin/lmtserver.sh lmttask -l –u

  For only one system, for exp: System ID: 39T1;

  su lmt

  /opt/lmt/bin/lmtserver.sh lmttask -l –u -h 39T1
- Collect the following LMT traces and send lmt_traces.tar.bz2.gz: cd /.AS/BACKUP

  tar -cvjf lmt_traces.tar.bz2 /opt/lmt/data /opt/lmt/trace

  /opt/lmt/diabatch gzip

  lmt_traces.tar.bz2

- Deactivate the LMT tracing and restart the process group

  You may also need to check the ports used by the Assistants with the following AMOs:

  chafunct:slang=eng;

  DISP-APS:,PSALL,S0-E*;

  DISP-CODEW:SERVICE;

  DISP-CODEW;

3 OpenScape 4000 CAP/CSTA

3.1 Prerequisite for every ticket

- Provide remote access details if available.
- Check if a correction is available in the **last HF**/patch. Please upgrade the system to **latest HF**/patch available before escalation to eliminate redundant escalations.
- Please check if a supported version is used, provide the version of CAP/ CSTA.
- Provide a detailed description of the problem with timestamps, steps to reproduce the issue or check if it is customer specific.
- Check if the log levels have been increased for the corresponding components (SCC/P, OpenScape 4000 , XMLPS in case of CAP, OpenScape 4000 in case of CSTA). If crash happened with CAP, then ensure that CrashCatcher has been activated and dump files have been created. If TAPI is affected, then check if the TAPI log levels are increased and the TAPI tracing is configured.
- Check if the provided trace contains the logs when the issue occurred.
- Provide the complete sysdiag/CISysdiag.

3.2 Component Specific Tracing – OpenScape CAP V3.0

3.2.1 Standard Logging for SCC/P

The standard logging should be enabled. It should be adjusted for all

- SCC (300,3000,4000 ,8000,DX,etc..)
- SCCP
- LogLevel settings

Please edit: **<installdir>\OpenScapeCTI\config\<Server Name>\telasserver/ sccp_<SCC/P Id>\Telas.cfg**

The following entries and values should be set:

```
log.level = 5
```

```
debugLevel = 9
```

The settings above increase the number of lines logged; the use of direct file logging is advised. It can be set with the following entries:

3.2.2 File Logger for SCC/P

```
# File System Location
# ====================
# <volume>:...\OpenScapeCTI\distribution\config\SccP\Telas.cfg
# ====================================
# logging and tracing
# ------------------------------------# level settings for all loggers
#-------------------------
```

```
loggerHistoryLevel = 0 loggerFileLevel = 9 loggerCapLevel = 0 loggerBoxLevel = 0
# capLogger settings
#------------------------capBlockmode = 1
# fileLogger settings
#-------------------------
loggerFile = <installdir>\OpenScapeCTI\logs\<Server Name>\%s_logger.log
 loggerFileMaxSize = 100000 loggerFileNum = 10 fileMode = continuous #fileMode =
 StopOnError
#fileMode = DumpOnError
#fileMode = SystemOnError
# history logger settings
#-------------------------
historySystem = copy a b
historyTrigger = triggerstring
# history logger trigger settings
#-------------------------
#triggerMode = continuous triggerMode = DumpOnTriggers
#triggerMode = StartOnTrigger
#triggerMode = StopOnTrigger
#triggerMode = SystemOnTrigger #triggerMode = CrashOnTrigger
```

In the loggerFile setting the `<installdir>` and `<Server Name>` parts should be replaced with the actual data.

`loggerFileNum` specifies the number of logfiles created, the loggerFileMaxSize specifies the length of one logfile.

3.2.3 Standard Logging for CA4000 /SAT/SPI

- For CA4000 please edit:

<installdir>\OpenScapeCTI\config\<Server Name>\ca4000 _<ca4000 Id> \ca4000 .cfg

```
log.level = 5
```

- For SAT please edit:

<installdir>\ OpenScapeCTI \config\<Server Name>\sat\sat_svc \SatServer.cfg

```
LOG_LEVEL = 5
```

- For SPI please edit:

<installDir>\ OpenScapeCTI \config\<Server Name>\spi\Telas.cfg

```
log.level = 5
debugLevel = 9
traceLevel = 5
```

3.2.4 Standard Logging for XMPLS

- Please edit:

<installdir>\OpenScapeCTI\config\<Server Name>\ XMLPhoneSvc_<XMLPS Id>\Telas.cfg

The following entries and values should be set:

```
log.level = 5
debugLevel = 9
```

IMPORTANT: These modifications require the restart of the corresponding call control modul(es) in Diagnostic Agent.

3.2.5 Configuring Longer Logfiles

For CAP logs covering a longer period, please edit:

```
: <installdir>\OpenScapeCTI\config\common\global.cfg
log.level = 5
log.maxLines = 500000
log.maxFiles = 20
<installdir>\OpenScapeCTI\config\<Server Name>\admin\log
\LogServer.cfg
```

Here are the entries which must be modified (for all affected SCC/P):

```
log.maxLines.<SCCP Id>_Error = 500000 (size of the log in
 lines)
log.maxFiles.<SCCP Id>_Error = 20 (number of log files)
maxLines.<SCC4000  Id>_Error = 500000
log.maxFiles.<SCC4000  Id>_Error = 20
```

E.g.:

```
log.maxLines.SCCP_Error = 500000
log.maxFiles.SCCP_Error = 20
log.maxLines.HP4000 _Error = 500000
log.maxFiles.HP4000 _Error = 20
```

3.2.6 Crash Situations

In case of crash of SCC, SCCP, SPI or XMPLS components, it may be useful to have an additional trace file. It can be activated the following way - stop the relevant process in Diagnostic Agent on the "Processes" tab.

In the directory **<installdir>\OpenScapeCTI\config\<Server Name> \telasServer_<SCC, SCCP, SPI or XMPLS Id>**

1) Copy the following lines into S10service_ctrl.proc:

```
args: -l
args: 6
args: -f
args: <?x $INST ?>/logs/<SCC, SCCP, SPI or XMPLS
Id>Trace.txt
```

The name of the txt could be for example:

```
args: <?x $INST ?>/logs/SCC4000 Trace.txt
```

2) Start SCC/P or XMLPS in Diagnostic Agent

NOTICE: If a process has not been crashed, just ‘frozen’ (it means that Diagnostic Agent shows with red status but in the Task Manager the regarding process is still running) then the dump file can be generated with the following method (it is working only on Windows operation systems):

---

a) Open the Task Manager.
b) Select the specified process.
c) Right click on the mouse-button and select the ‘Create dump file’ menu – it saves the dump file for the frozen process.

3.2.6.1 Crash situations in case of Windows 2008/Windows 7

In case of Windows 2008/Windows 7, the crash catcher doesn’t generate any dump files when crash happens (cause: the used userdump.exe isn’t supported on these operating systems). As workaround the dump files can be generated with the method presented below. For all configured processes (SCC, SCCP or XMLPS) a new key should be created in the registry:

If an SCC4000 has been already configured in CAP, then the following should be entered into the registry:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\Windows
 Error
          Reporting\LocalDumps\SccHiPath4000 .exe]
"DumpFolder"= REG_EXPAND_SZ: <CAP installation path>\logs
"DumpCount"=dword:00000005
"DumpType"=dword:00000002
```

The relevant process should then be restarted.

3.2.7 Performance Problems

It is possible to observe if there are performance problems if any of the following symptoms occur:

- there are delays in the message processing of CAP
- a CAP component uses 100% CPU for more than 1-2 seconds
- the memory usage of a component increases continuously (without ending).

In this case performance logs are needed. Also longer CAP logs are required (please see Configuring Longer Logfiles on page 90)

To collect performance monitor logs, please follow the steps:

1) Start performance monitor (perfmon.exe)
2) Right click and choose „Counter Logs", then „New Log settings..." .
3) Add a name and add counters to the measurement for every affected process (SCC/P):

   „Process" -> SCC/P -> %Processor time -> Add - „Process" -> SCC/P -> Private
   Bytes -> Add
4) Add the overall processor time, too:

   „Processor" -> Total -> %Processor time -> Add Set the interval to 1 seconds.
5) Set the Log File to a „Text file (Comma delimited)" and set „End file names with: mmddhhmm"
6) Finally schedule the measurement that it will be started and stopped manually.
7) By right clicking on the name of the measurement it can be started and stopped.

The log file will be generated in the given directory.

3.2.8 Problems with SPI Service

In case you experience problems with Service for Pbx Information component please adjust the following settings.

1) In case there are many devices configured on the specific OpenScape 4000 then the timeout should be adjusted to let CAP management query all devices from the switch.

   In

   <installDir>\Siemens\OpenScapeCTI\config\<Server name>\admin \mgmnt\admin.cfg SysMgmtTimeout = 600000
2) If you experience further problems, please activate SPI tracing.

   ```
   # XML-Trace for SPI Service
   SPI.traceDir = <?x $INST_DIR ?>/logs
   SPI.traceHeader = true
   ```
3) Additionally modify the following entries in the config file of SPI:

   <installDir>\Siemens\OpenScapeCTI\config\hu3cb9fc\spi\Telas.cfg

   ```
   log.level = 5
   debugLevel = 9
   traceLevel = 5
   ```
4) The additional SPI traces will be generated here:

   <installDir>\Siemens\OpenScapeCTI\logs\SPITraceFile.txt <installDir> \Siemens\OpenScapeCTI\logs\SPI_XML.trc
5) These modifications require a CAP service restart.
6) Remark to SPI (switch configuration)

7) SPI provides the canonical prefix information to the device numbers only if the correct dialing plan data is configured in the OpenScape 4000 . See the output of REG-KNDEF;
8) Check if ISDNCC, ISDNAC, ISDNLC values are as expected.

3.2.9 TAPI Specific Problems

For TCSP logging, the following settings must be made in the registry, under **HKEY_LOCAL_MACHINE\SOFTWARE\Unify\Tcsp**:

1) Add a new String Value, with name 'FileLog', and value 'C:\Tcsp.log' (or what is more convenient).
2) Increase the value of the tcspDebugLevel to 10 (decimal). Restart the PC, so the settings to take effect.

   [HKEY_LOCAL_MACHINE\SOFTWARE\Unify\Tcsp]

   "FileLog"="C:\\tcsp.log"

   "tcspDebugLevel"=dword:0000000A
3) Additionally, enhance the log level of the affected SCC and CA4000 as well.
4) After problem reproduction provide the TAPI log and the CAP sysdiag zip too.

3.2.10 Installation problems on Windows

Please provide the output of **<sg.msi or setup.exe> /L /v <path>\install.log**

3.2.11 Network Sniffer logging

The network sniffer logging provides information about data flow between the switch and CAP. This may be required in some cases.

Wireshark can be used for the capture:

- select the appropriate network adapter (which is used by CAP),
- increase the buffer size for the capture, if it takes longer to reproduce the problem.

3.2.12 How to check the version info?

How to check the version number of SCCP/SCC4000 ?

1) Choose **"snapshot"** on the SCCP/SCCC4000 in Diagnostic Agent on the **"Processes"** tab
2) Click on **"status"** and check the **"Version"** value

How to check the version number of CA4000 ?

1) Choose **"snapshot"** on the CA4000 in Diagnostic Agent on the **"Processes"** tab
2) Click on **"status"** and check the **"ca4000 _version"** value

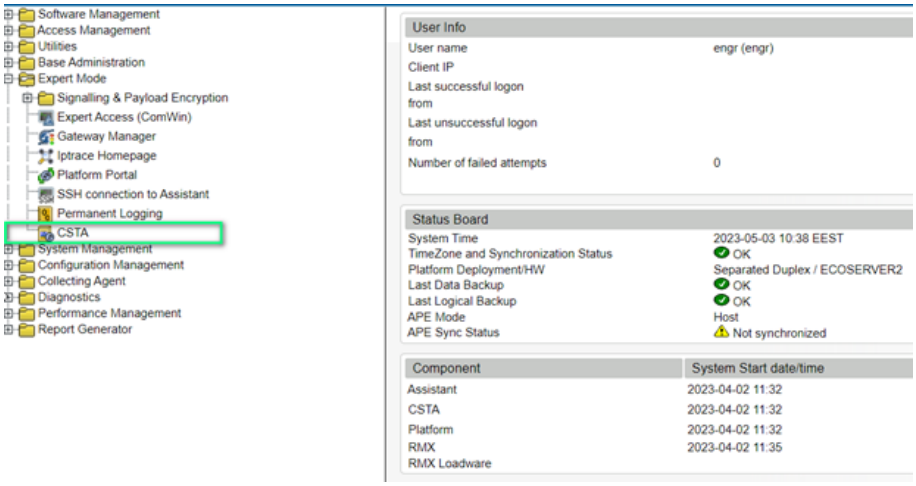
3.3 Component Specific Tracing – CAPINSIDE

Similar to OpenScape 4000 CSTA.

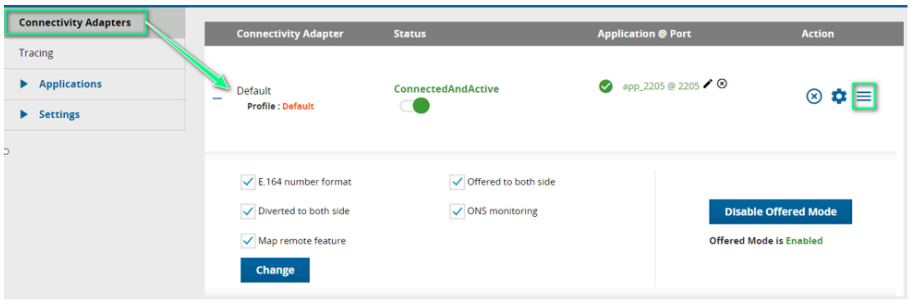
3.4 Component Specific Tracing OpenScape 4000 CSTA

3.4.1 Activation of traces

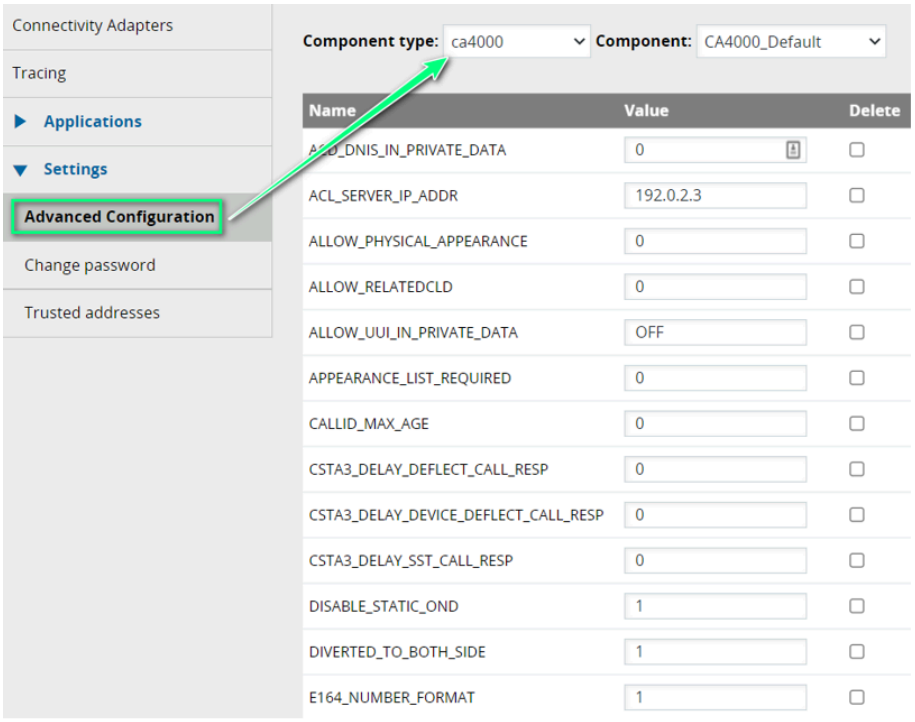
1) Enter first from the Assistant to the CSTA configuration GUI:



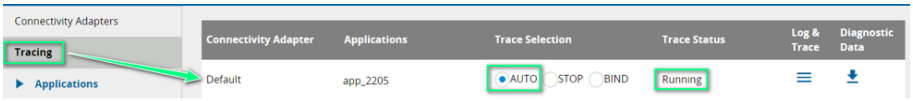
2) Identify the corresponding Connectivity Adapter and make note of the used Profile and the text color. If the color is orange this means the profile was modified and this information must reach the OpenScape 4000 Support team:



3) If OpenScape 4000 Support requests any additional parameters to be set for the Connectivity Adapter, open the advanced configuration and set them accordingly:

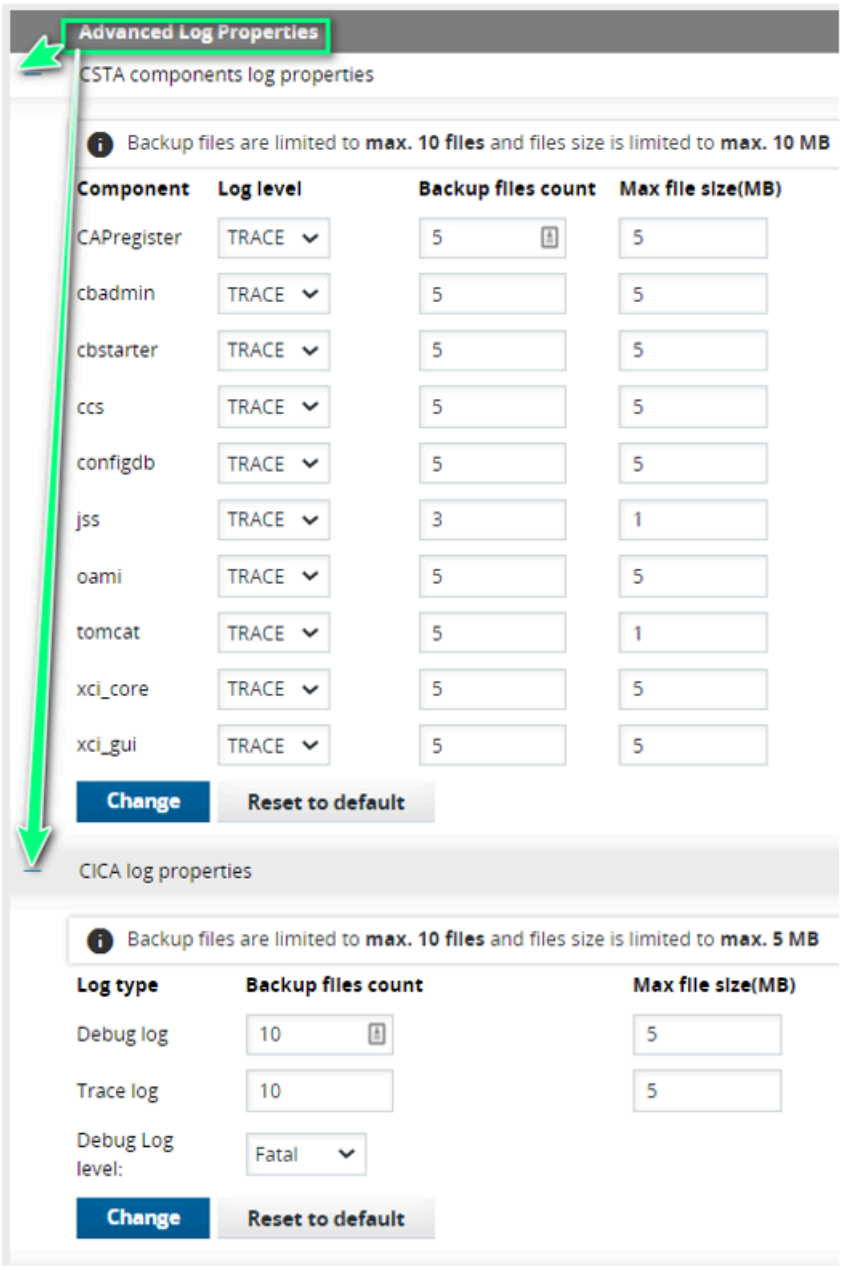


4) For the tracing you select the Tracing section:



NOTICE: Tracing starts automatically when an application sends a request, but only 4 Connectivity Adapters can be traced in parallel. If a 5th Connectivity Adapter needs to be traced then you need to stop tracing on one of the other 4 Connectivity Adapters and start tracing the 5th Connectivity Adapter using the BIND option.

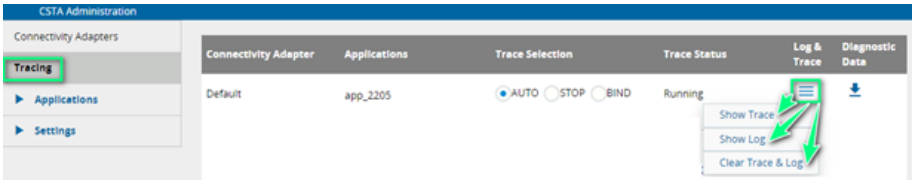
5) Next in the Advanced Log Properties section expand the CSTA components log properties and CICA log properties in its default form:



NOTICE: Please change these from default values only after consulting with OpenScape 4000 Support.

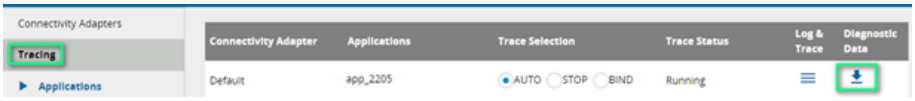
3.4.2 Collecting the traces

1) You can either clear the trace and log or show in real time on screen the trace or the log:

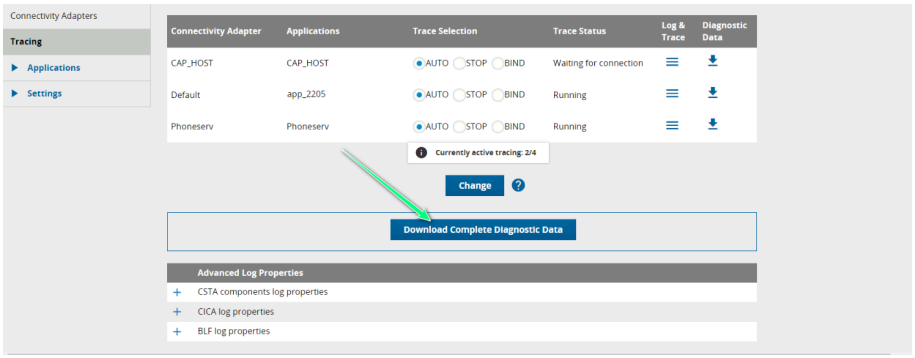


2) If OpenScape 4000 Support requests only specific traces for a certain CA, you can download them by pressing on:

NOTICE: These traces will not cover CICA or other affected components (like the CSTA GUI)



3) Recommendation is to collect the full set of diagnosis data:



NOTICE: If the CSTA GUI is not working, then traces can be collected manually from the CSTA VM container via following command:

tar cjvf csta_log_config.tar.bz2 /opt/siemens/CSTA/Logs/ /opt/siemens/CSTA/config/

4) Then this compressed file can be retrieved via SFTP.

3.4.3 How to collect Core Dumps in case of CSTA Crashes?

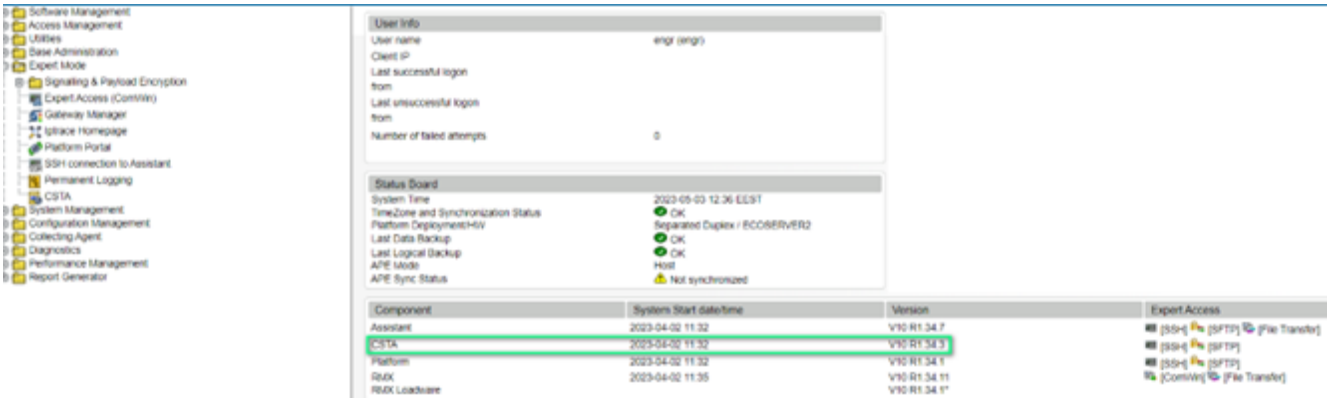
If there are cases of CSTA crash, the created core file should be collected from **/var/crash** with:

tar cjvf csta_cores.tar.bz2 /var/crash

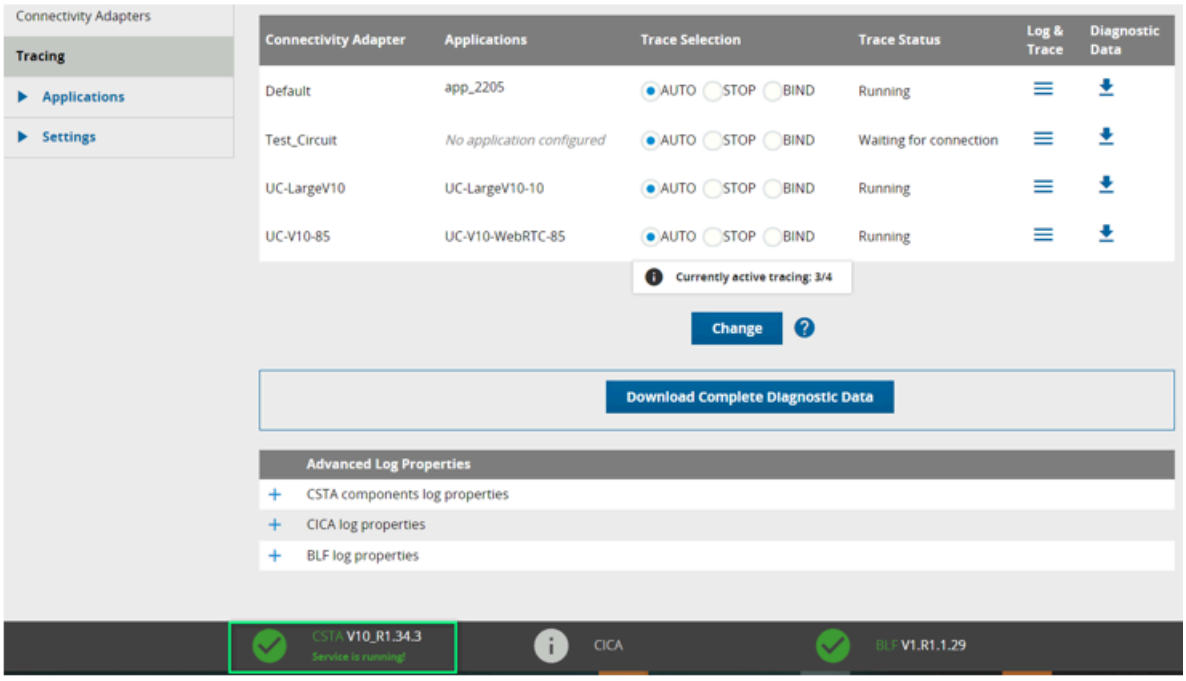
Then this compressed file can be retrieved via SFTP

3.4.4 How to check the version info?

1) From the Launchpad of Assistant:



2) Enter from the Assistant to the CSTA configuration GUI and check at the bottom of the page:



4 Cordless

4.1 OpenScape 4000 DECT/CMI

The following information is needed when reporting problems with OpenScape 4000 classic DECT or CMI (the mandatory requirements are marked with bold):

1) General information

- Customer (partner) and location of the system
- **OpenScape 4000 version (DIS-APS; and DIS-PATCH:SYS;)**
- **SLC LW Version**

2) Data for investigation

Data must be provided for each node in the network, even if only one node is affected:

- **HISTA** (not SEARCHB) for a relevant period of time and for a longer period (at least 24 hours)
- As alternative: C-FBTHIST from RMX area F, or Portal ADP logs, or **/var/log/libvirt/qemu/adp*** from Node A and Node B
- In case of COSMOS error, the HISTA must contain the information for at least one hour after COSMOS occurred
- **Output of DISP-SLCB**;
- **CATOOL database**
- **Complete REGEN of the system or systems (if there is a cordless network)**
- **Output of DISP-REFTA; DISP-BCSU; of the system or systems**
- **What applications are used with CMI : DTB, DAKS (OSCAR) etc.**
- **modulo-16 problem must be fixed prior to escalating the ticket** (the official service documentation contains an extensive chapter on how to recognize and address this type of problem)

3) Clear description of the problem

- **What is the problem (scenario)**
- **When does the problem occur (approximate date and time**)
- **Where does the problem occur (is there any specific area or everywhere?)**
- **How often does the problem occur (sporadic, daily and so on)**
- **Is it a new installation or upgrade, when was reported for the first time, what measures have been taken so far**
- Is the problem reproducible?
- Workaround
- What system reaction
- If there is a project-specific release, the relevant PSR document should be provided
- Which handsets are affected
- Handset type and SW-Version
- Traces (optional)

4) In case of speech problems or “no base” the below information is mandatory:

- **An image of the network plan of the customer**
- **The current site plan (position plan) of the base stations, relevant photos of BSs - Information about special environmental conditions, e.g. reinforced concrete ceiling, wire-reinforced glass walls**
- **closeness of strong electric consumers, closeness of other radio technology like**
- **WLAN, other DECT- Systems**

4.2 OpenScape Cordless IP V2

NOTICE: For all handover and speech quality issues, site surveys (meaning DECT measurement) are mandatory.

4.2.1 General System Information and All Problem Reports

Text copy of Status page for fast overview (example shown):

Integrator status	
Device name	OpenScape Cordless IP V2 Manager
Device role	Integrator
MAC address	7c:2f:80:cf:e1:c6
MAC-ID	7C2F80CFE1C6-0E35
IP address	192.168.3.18
DECT Frequency band	1880 MHz - 1900 MHz (Europe)
DECT PARI	102E7E11
Firmware version	V2R1.23.0
Date and time	2019-09-10 16:26:18
Last backup	2019-08-28 18:38:04
Licence	Activation period. Days left: 22

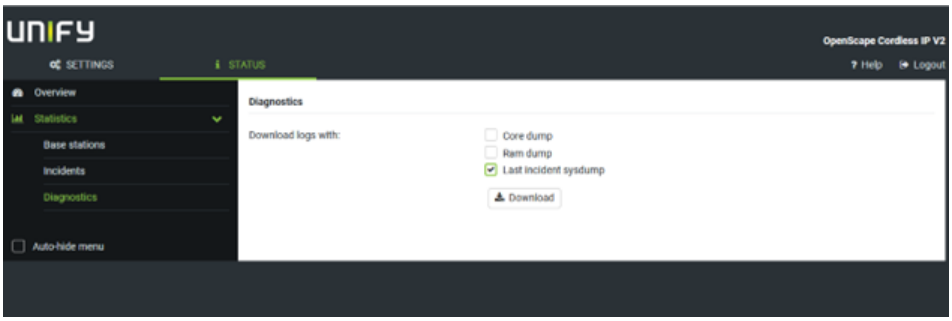
DECT Managers	
Number of DECT Managers	2
Number of online DECT Managers	2
Number of DECT Managers with deviating Firmware Version	0
Number of DECT Managers with Registration Window open	0
Base stations	
Number of active base stations	9
Number of pending base stations	0

DECT Managers	
Number of online base stations	11
Call limit for base station only	10
Mobile devices	
Number of registered mobile devices	27/31
Number of mobile devices to register	0
Number of mobile devices with SIP registration	25/31

- Sysdump logs
- Export of Base stations events
- Incidents download
- Handset export to XML
- showing handset type and SW version
- showing SIP provider configuration and LDAP provider configuration
- Base station export to show full base station configuration
- Base stations Statistics. Status- Statistics- Base stations – Export
- Syslog output is always **helpful**

4.2.2 SYSDUMP Logs

Mandatory for every type of problem, the sysdump logs should be downloaded from **Status / Statistics / Diagnostics / Last incident sysdump**, before any actions/workarounds to heal the problem :Text copy of Status page for fast overview (example shown):



4.2.3 Call Related Problems

The following info is required for call and handset related problems:

1) The detailed, actual problem description including the following info:

- Who has called whom including:
  - Phone numbers
  - Display Names
  - Info about external or internal call (DECT/DECT DECT/internal DECT/ external)
  - Pictures of Base stations how they are mounted
  - Has the system been measured? => DECT Measurement report
  - Picture of the visualisation tool
  - Wireshark traces if required
  - Syslog output is always mandatory
  - Handset reboot codes if required
- A Video recording could best show all user impression about the call related problem:
  - Description about the call progress (who has initiated the call, a call back, etc.).
  - If a call was disconnected unexpected:
    - Info about the display content of the DECT handset in the problem case like:
      - can be seen immediately after a disconnection of the call directly the idle display
      - can be seen immediately after a disconnection of the call a flashing display
      - can be seen immediately after a disconnection of the call a text like "has hang-up"

      If no video available, a photo could best document the handset display.
    - Info if the Hang-up tone can be heard after an unexpected disconnection.
      - If the connection has a bad quality, please describe the malfunction like clicking noise, voice dropouts, echo, voice delay, low noise [you can hear your partner, but with noise in background] or strong noise [you can hear only a loud noise and not your partner]
      - Point of time when the problem occurred.
- Is the problem reproducible?
- Info if the DECT user has moved during the call
- For internal users, info about configured call distribution features like Teams, Multi Line Appearance Pickup Group, Call Pickup and related applications.
  - Does the problem occur if a similar SIP phone with the same configuration is used instead of the cordless IP phone?

2) The statistical distribution of the problem:

- How often doesthe problem occur during a day?
- What is therelationship between good and bad DECT calls?
- Is there a relationship between DECT problems and a dedicated location, e.g. a staircase?
- Is there a relationship between DECT problems and a determinate base station?

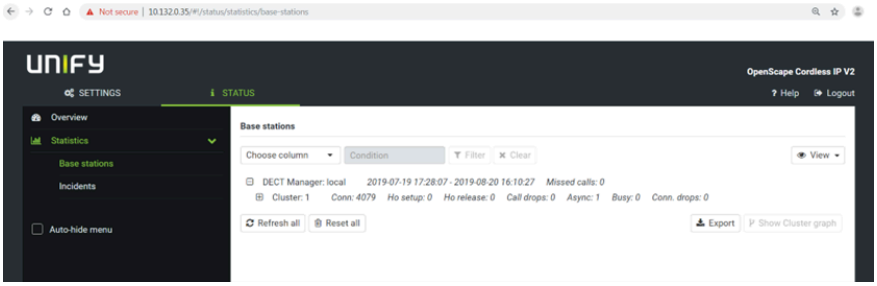
3) The current site plan (position plan) of the base stations and the positions of Handsets showing the problem, including information about special environmental conditions, e.g. reinforced concrete ceiling, wire-reinforced glass wall, closeness of strong electric consumers, closeness of other radio technology like WLAN, other DECT systems or medical equipment like X-Ray, CT, etc.. Please check it, that the distance of the base stations and any metal surface is larger than 50 cm. Please document this with a photo.

4) A current network deployment plan including the following info as **picture** :

- IP addresses of all related component
- Info about VPN
- Info about the used PBX´s including used software versions and interconnections if more than one PBX is used
- Info about problem related SIP phones
- Info about used switches
- Info, if a UC solution (e.g. Web Client, MyPortal, etc. is involved)

5) Please log in at the OSCIP web-based management as "admin" and provide the following data:

- OSCIP backup (Settings > System > Save and restore > Save settings)
- Provide backup file
- Admin password
- Network/Wireshark traces should be collected on DM but in case of payload issues it will be necessary to collect traces also from the BS where the Handset is located. In case of handover issues from the old and the new BS
- syslog data of the OSCIP
- screenshots from GUI with Status -> Statistics -> Base stations: (Base stations Statistics. Status- Statistics- Base stations – Export under section 0) provides unfiltered information.



- screenshots from GUI with Status -> Statistics -> Incidents.

6) The radio coverage at the location where the problem occurs (FRAQ and RSSI values concerning chapter 7-1 of the BSIP Service Documentation).

7) An RFP-Scan at the position where the problem occurs: **Long-Press green Off-Hook -> Options -> Service Info -> RFP Scan**. Please provide full list in error report.

8) In dependency of the used PBX please attach also the internal diagnosis data from the PBX related on the timing at which the error occurred. If the

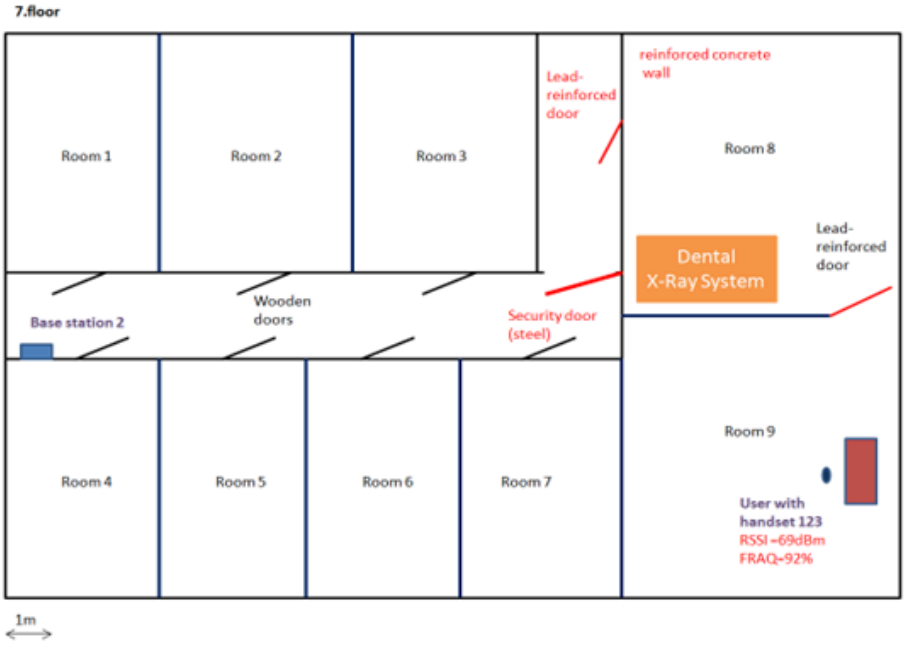
problem is reproducible, please clean the internal diagnosis before to make the scenario and to collect the diagnosis.

4.2.3.1 Example of Call Related details to be delivered to GVS

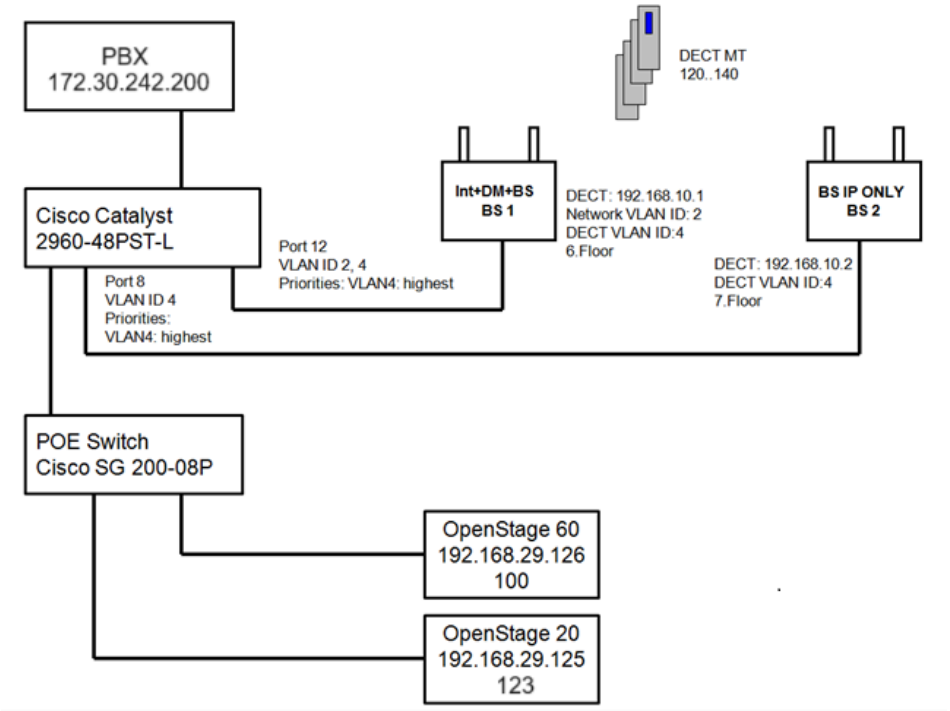
! this is only an example !

- *the DECT user “Meyer” with the internal phone number 123, using an SL4 with SW Version V1 R2.1.0, has called the external partner “Lehmann” with the number 00987654321.*
- *subscriber 123 calls 00987654321 and got a ringing tone.*
- *user 00987654321 accepts the call and is successfully connected with internal subscriber 123.*
- *the call is connected for five minutes without any problems.*
- *after five minutes the internal subscriber 123 hears a strong noise and the external partner 00987654321 was disconnected.*
- *the problem occurs at 2014-07-23 at 17:50*
- *the problem is not reproducible.*
- *internal subscriber 123* sits in room number 9 during the call.
- *internal subscriber 123 is in a Pickup group with the OpenStage Phone 100.*
- *The problem occurs two times per day.*
- *There is an average of 500 Dect calls per day.*
- *The problem occurs mostly at the seventh floor.*
- *The problem occurs mostly at the proximity of base station two.*

Floorplan:



Networkplan:



4.2.3.2 Wireshark traces

Wireshark traces are always necessary and mandatory on any scenario related with Call related problems or problems concerning WBM

1) take the pcap trace from the "DECT-Manager under test:

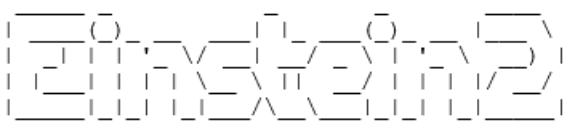
a) activate ssh access for user "cli" by assigning password longer than 7 characters (web-ui- >settings- >system->web-configurator)

b) take a pcap trace with tcpdump

From another linux machine:

user@ubuntu:~$ ssh cli@192.168.200.4

cli@192.168.200.4 password:



V1.24.0+build.1ed6010;einstein-albert;ci-xberry@2018-01-19/15:36:21

From Windows machines, use PuTTY or another SSH application.

No matter how you connected to the system then:

cli@einstein:~$ sudo tcpdump -n -i any -U port !22 -w - >ws-trace.pcap

tcpdump: listening on any, link-type LINUX_SLL (Linux cooked), capture size 262144 bytes

^C61 packets captured

97 packets received by filter

0 packets dropped by kernel

sudo tcpdump -n -i any -U port !22 -w - > ws-strace.pcap

cli@einstein:~$ Connection to 192.168.200.4 closed.

Then download the traces. To download the traces (ws-trace.pcap) use the protocol SCP (neither SFTP, nor FTP are working).

From another linux machine:

user@ubuntu:~$ scp cli@192.168.200.4:ws-trace.pcap ./

cli@192.168.200.4's password:

ws-trace.pcap 100% 7798 7.6KB/s 00:00

user@ubuntu:~$

From another linux host you could also pipe a tcpdump to a Wireshark on your host with a command like below:

user@ubuntu:~$ bash -c 'ssh -o StrictHostKeyChecking=no cli@192.168.200.4 sudo tcpdump -n -i any -U port !22 -w - | wireshark -k -i -'

From a Windows machine, use WINSCP and the protocol SCP (SFTP or FTP are not working).

2) tcpdump from device to PC:

   With (Putty) plink on Windows (or ssh on linux) you could start tcpdump on device to pcap file to local on test PC:

   ssh cli@192.168.3.13 "sudo tcpdump -s0 -i eth0 port !22 -w -" > c:\temp \wirelog.pcap

   cli@192.168.3.13's password:
   tcpdump: listening on eth0, link-type EN10MB (Ethernet), capture size 262144 bytes
3) remote tcpdump to Wireshark:

   ssh cli@192.168.3.13 "sudo tcpdump -s0 -i eth0
   port !22 -w -" | "C:\Program Files\Wireshark\Wireshark.exe" -k -l -i -

   cli@192.168.3.13's password:

   tcpdump: listening on eth0, link-type EN10MB (Ethernet), capture size 262144 bytes
4) another possibility is sniffing the mirror port of the LAN switch port where the “DECT-Manager” is connected.

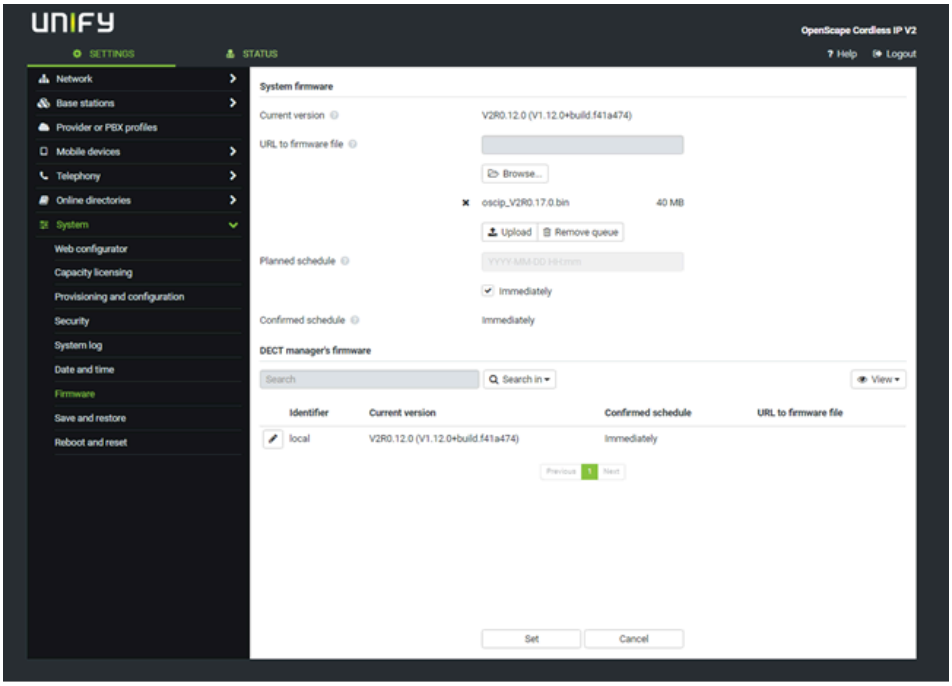
4.2.3.3 Problems concerning WBM

The following info is required for all problems with the use of the WBM:

1) The detailed, actual problem description including the following info:
   - Please describe step by step, which operation of usage of the WBM causes a problem.
   - Please document this as screenshots or as video sequence.
   - Please describe which behaviour you expect.
   - Please note the point of time when the problem occurred.
   - Is the problem reproducible?
2) If it is problem relevant, please attach the network deployment plan
3) Please log in at the BSIP web-based management as "admin" and provide the following data:
   - BSIP backup (Administration > Backup Config)
   - Provide the admin password. You can change the password before to make the backup if you don’t what that your password to be known by the person which investigates the ticket.

4.2.3.4 Example for Problems concerning WBM

I try to update the firmware via the **SETTINGS > System > Firmware** but it fails.



4.2.4 PTP Synchronisation

Hints regarding PTP deviation.

LAN synchronisation is based on a two-layer design:

1) Native PTPv2 is used to synchronise a common reference timer along all base stations involved.

Target quality benchmark to provide sufficient PTP synchronisation along the base stations, is to have a PTP deviation lower than 500 ns (rms). For this PTP synchronisation a few single deviations >500 ns are accepted and might just generate first warnings.

If the PTP sync packet deviation does continuously exceed this limit of 500 ns, the PTP synchronisation is considered broken and will lead to new start synchronisation procedure.

2) Based on the PTP synchronisation LAN master and LAN slave adjust their DECT reference timer to one common offset to the common PTP reference timer.

This common offset will be permanently monitored by a proprietary communication. The target quality benchmark for this synchronisation level is to see reference timer deviation by this DECT reference timer sync packets: DECT-LAN-Sync deviation lower than 1000 ns.

A good mean value would be 500 ns (rms).

To meet these criteria the switches themselves do not necessarily need to be PTP aware. But the network should consider the above-mentioned guidelines to meet these criteria.

4.2.5 Monitoring IT Infrastructure for Sync Over LAN

LanSync statistics to syslog can be activated.

Native PTPv2 is used to synchronize a common reference timer along base stations involved.

Target quality benchmark to provide sufficient PTP synchronization along the base stations is to have a PTP deviation lower than 500ns (rms).

Network performance can be checked with cli console:

1) Snapshot: **cat /tmp/log/dlsd.status**

2) Add DLSD statistics to syslog:

- `sudo killall -21 dlsd`
  --> to toggle dlsd to next log level (6)
- `sudo killall -21 dlsd`
  --> to toggle dlsd to next log level (7)
- `sudo killall -12 dlsd`
  --> to start cyclic state dump
- `sudo killall -10 dlsd`
  --> Permanently DLSD statistics to syslog
- `sudo logread -f`
  --> to read the log (or start the syslog server capture)
- `sudo killall -12 dlsd`
  --> to stop cyclic state dump
- `sudo killall -21 dlsd`
  --> to toggle dlsd to next log level (6)
- `sudo killall -21 dlsd`
  --> to toggle dlsd to next log level (5) --> you are now at normal log level

Example of BS snapshot relevant parameters:

```
cli@base-7c2f80cfe120:~$ cat /tmp/log/dlsd.status
dls-stats :
 ============================================================
SYS ----- : dls-mode -, syn-mode -, lan-m ----, ptp-m ----,
 -- state ----
: client, LAN, OFF, OFF, NSYNC (20)
SYS ----- : dls-mode -, syn-mode -, lan-m ----, ptp-m ----,
 -- state
STATS ------ : rms ----, min -----, max ------, mean -----
 +/- stddev ---
ptp-d[ns] : 85, -193, 200, 8 +/- 84
dls-d[ns] : 178, -308, 353, 11 +/- 178
```

4.2.6 Media

Basic information needed from the affected system for support:

- How many bases are used?
- How many handsets are used?
- Which handset are used?
- Has the system been measured?
- Site plan
- Base stations Statistics. Status- Statistics- Base stations - Export

- Failure description

4.2.7 Licensing problems

Syslog and the XML license file are mandatory. Describe the exact location of the CLA (e.g. SG or OsBiz) and which version is in use.

4.2.8 FAQ - Troubleshooting

Internet access needed

1) All OpenScape Cordless IP V2 multicell devices should be on the same software version.
2) Check if the Base Stations are mounted correct, like not installed direct against metal walls.
3) DECT synchronization: The DECT measurement is done using the Gigaset Site Planning Kit. Please check if the customer situation has not been changed and these changes have influence on the DECT coverage. With the visualization tool, you can get an indication of the DECT synchronization chains and the connection quality. (Red lines are not allowed).
4) LAN synchronization: If LAN synchronization is used, the LAN network should support the documented requirements. It does not mean that DECT measurement is not needed, the base stations must be able to see each other via DECT.
5) Check the Base station events, download the information and store it on your laptop.
6) Check the Incidents page, download the information and store it on your laptop.
7) Do the handsets have the latest firmware, connect them to a PC and update them with quick sync.
8) Can you reproduce the error? -> Reproducibility ratio “Always” (9/10,10/10) “Often” (>2/10 <9/10) “Sometimes” (1/10,2/10).
9) If the error is related to the network / VoIP protocol, Wireshark traces are needed.
10) Collect syslog output.
11) Read on the handset the code for the last 4 reboots in case there is an reboot issue.
12) Save configuration.
13) Collect all the info about the problem, and if possible, how to reproduce it.
14) Based on the found error, a general recommendation is to update the system to the latest software version available.

5 X-WIN Applications

This term denotes a set of Windows applications specific to the OpenScape 4000 :

- AC-Win (software attendant console),
- DS-Win (database – directory services),
- BLF-Win (status display for specific stations) – these are operator centric and normally work together on the same PC.
- Additionally, there is the DTB, a telephone book that can be accessed from stations of an OpenScape 4000 system.

For all issues with X-Win applications, a complete REGEN file and a current list of the patches of the involved OpenScape 4000 system are required.

Case depending, additional data like OpenScape 4000 system traces, GW traces or LAN traces may also be needed.

Also, for each problem please:

1) Prepare a detailed error description.
2) Do as many screenshots as you can to better describe the issue.
3) Specify the approximate time when the error occurred.

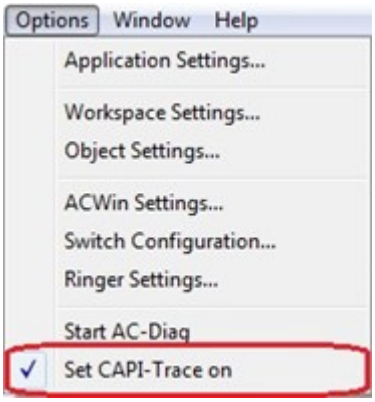
5.1 AC-WIN

5.1.1 Turning logs on

Procedure

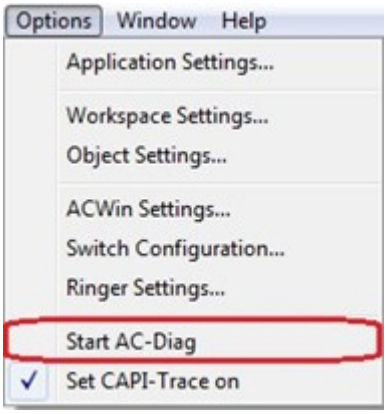
AC CAPI trace

- In the main **AC-Win DQ/MQ IP** window go to **Options** and make sure that **Set CAP-Trace** on is enabled.

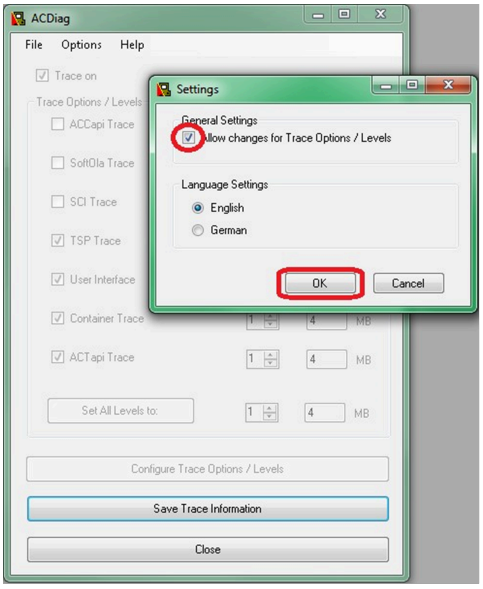


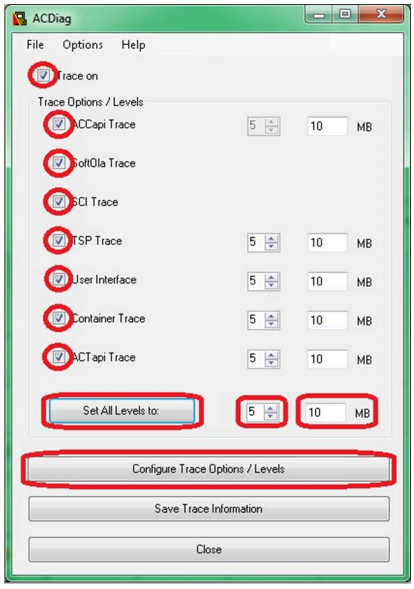
AC-Diag

- In the main AC-Win DQ/MQ IP window go to **Options** and select `Start AC-Diag.`

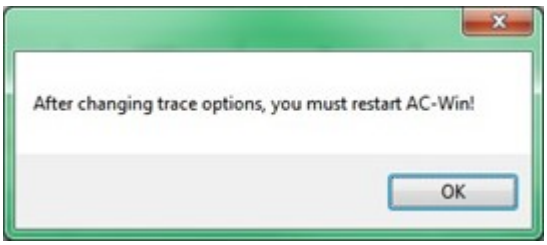


- The ACDiag window will open.
- Go to **Options / Settings and check the box for Allow changes for Trace Options / Level.**



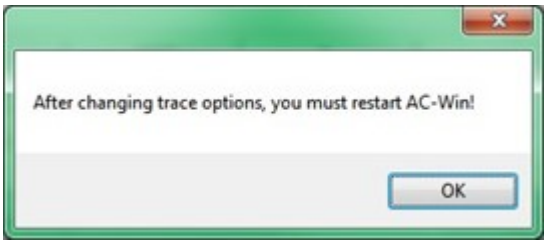


- Press **OK**
- Select all checkboxes and Set All Levels to 5 with 10 MB file size (as in the picture above).
- Press **Configure Trace Options / Levels.** This will save the settings.
- An alerting message will appear telling that AC-Win must be restarted.

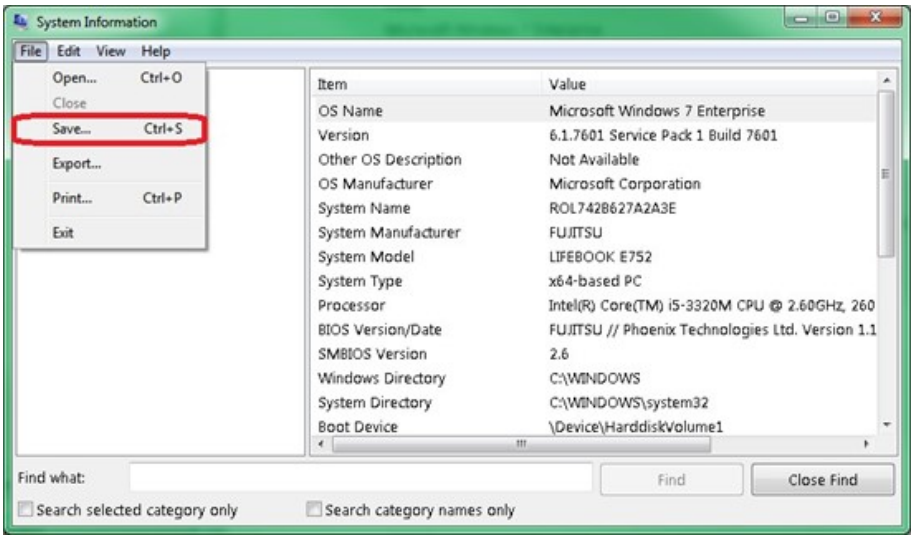


- Press **OK**

- Click on **Save trace Information**, System Information window will pop-up. Save this as an .nfo file.



- A message window will tell you that all the Trace information was saved into a folder named to the current date.

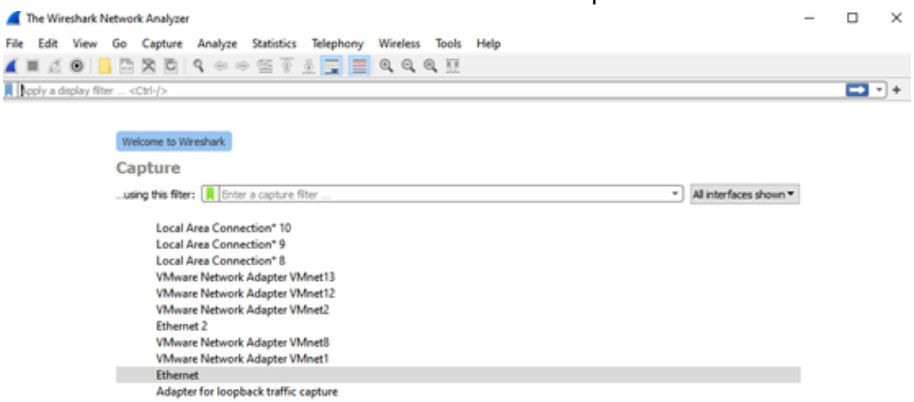


- Close all AC-Win windows and restart the AC-Win application.

  The above mentioned changes require administrator permissions; if AC-Win is run under a regular Windows account, then find the ACDiag.exe, usually under **C:\Program Files (x86)\AC-Win\Bin**, and run it as Administrator.

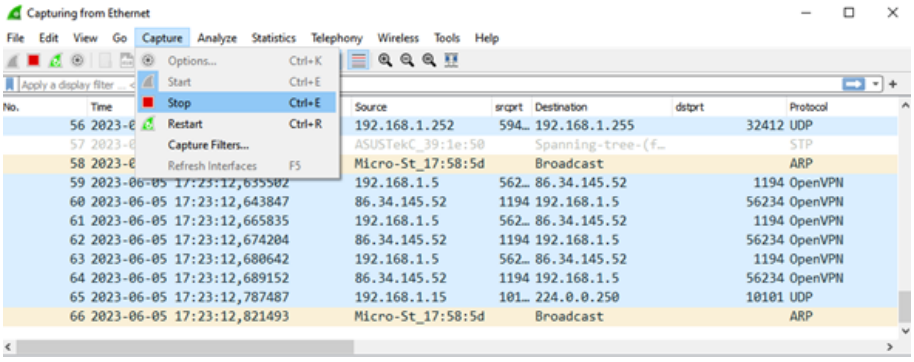
Wireshark Trace

- Please note the IP addresses of the source and target devices. Start Wireshark and select the interface normally used for access to the voice network and double click on it to start the capture
- Start Wireshark and select the interface normally used for access to the voice network and double click on it to start the capture.



- Reproduce the issue without closing the Wireshark application

- Click **Capture / Stop** after the issue is reproduced:



- Save the captured data by clicking **File / Save as**

Headset

- Specify which type of headset you are using.

5.1.2 Collecting the logs

Since Windows 7, the logs are normally located in a hidden directory,

C:\ProgramData\AC-Win IP\Log

Administrator rights might be required to enable showing of hidden folders.

Alternatively, you can check under the “Users” directory **C:\Users\All Users \AC-Win IP\Log**

NOTICE: It is recommended to stop the AC-Win application and delete the old log files before reproducing the issue.

Archive all these files together, expected files are:

ACCapi_DDMMYYYY_HHMMSS.log

ACContIP.log

ACTapi.log

ACWinIP.log

EventLog.txt

InstalledProducts.txt

SCITraceYYYYMMDDHHMMSS.log

SiemensAll.reg

SoftOlaYYYYMMDDHHMMSS.TRC

(if the application is crashing and you can’t find this trace, then it will probably be in C:\Temp)

Up0e.log

Wireshark trace

Scenario

5.1.3 AC-WIN does not start (Licensing problem and others)

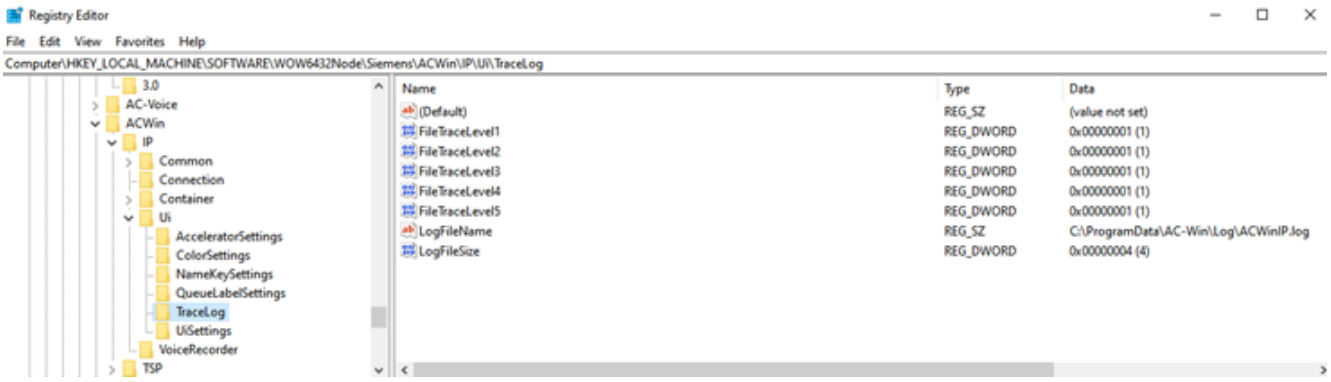
If application cannot start, then run ACDiag.exe manually from AC-Win installation directory and do the settings like described in the Turning logs on section.

If ACDiag.exe cannot be started, then you can set the logs manually in the registry.

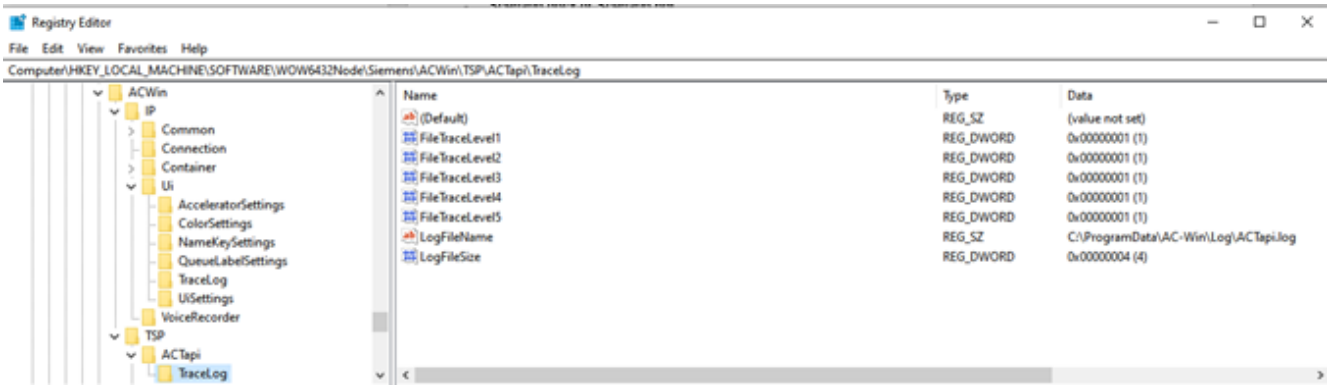
As Administrator, type **regedit** in the Windows **Start** menu, then navigate to the following paths and make the shown settings

Under **HKEY_LOCAL_MACHINE\SOFTWARE(\Wow6432Node)\Siemens**:

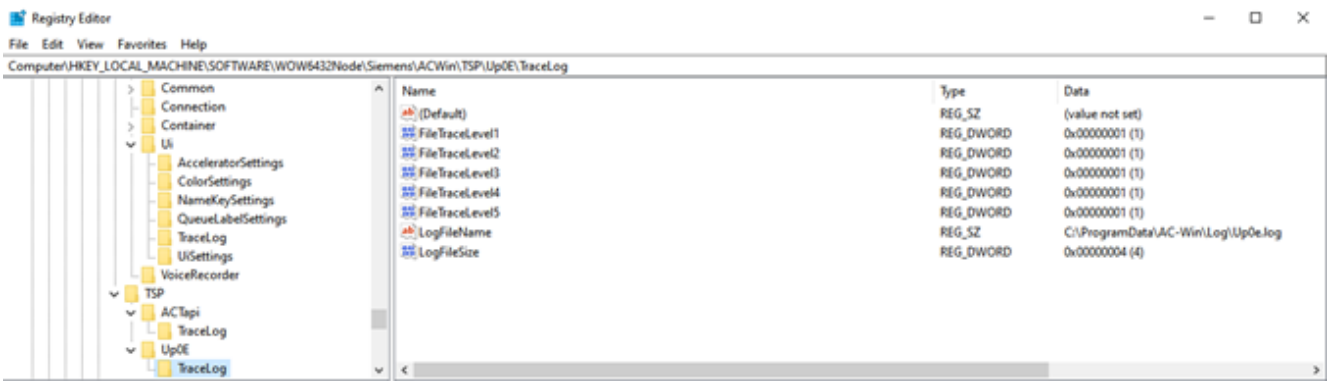
UI trace



TSP trace



Up0E trace



Container

SoftOla

5.2 DS-WIN

Collecting the logs

Since Windows 7, the logs are normally located in a hidden directory, **C:\ProgramData\DS-Win\Log**

Administrator rights might be required to enable showing of hidden folders.

Alternatively, you can check under the “Users” directory **C:\Users\All Users\DS-Win\Log**

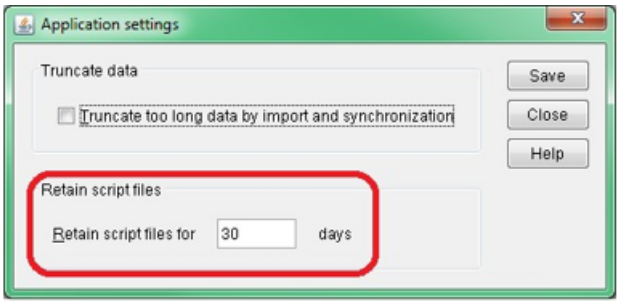
NOTICE: It is recommended to stop the DS-Win application and delete the old log files before reproducing the issue.

Archive all the files under subfolders Config and Log. Depending on what the problem is, further files may be required.

Problems

1) If your problem is related to **Database Migration** we will need the DS-Win database and *all the scripts* from the database installation directory (example for PostgreSQL: **C:\PSQL\13.3\scripts**).

> **NOTICE:** If the folder is empty then make sure that in DS-Win Admin the “retain script files” parameter is set with a proper value (**Options->Application Settings**).



2) If your problem is related to **Database Import** we will need the data file you used for import (**txt** or **csv**) and a short description of the import specification. If you modified the standard database, we will also need the modified version.
3) If your problem is related to **Synchronization**we will need the files **DSWin2.rsp and DSWin2_I.dat** (The path for these files can be defined in the synchronization specification, but the default folder is **C:\ProgramData \DS-Win**)
4) If you are not using the standard **GUI** and your problem is related to this, we will need your GUI.**xml** file from

   C:\ProgramData \DS-Win\Data\Forms folder and the DataSources.xml and DbTables.xml files from

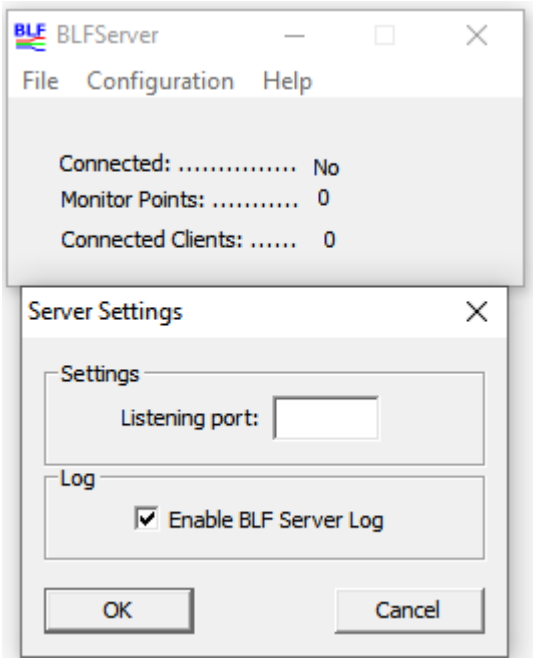
   C:\ProgramData\DS-Win\Data\DBDesc folder.
5) In case of **printing** problems, we will need the template files from **C: \ProgramData\DS-Win\Templates**.

5.3 BLF-WIN

Turning BLF logs on

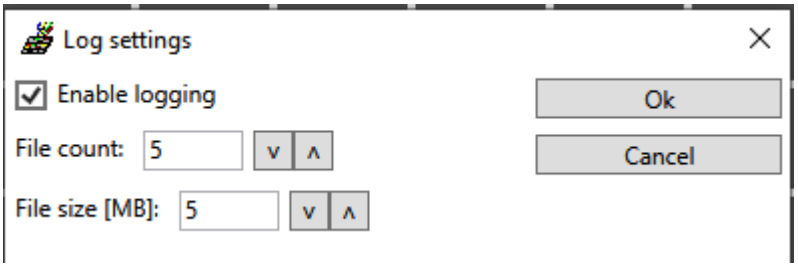
BLF Server

- Double click on the BLF Server icon in the Windows system tray, then select **Configuration -> Server Settings** and make sure the Enable BLFServer Log box is checked:



BLF Client

- Start the BLF-Win Client and select **Tools -> Options -> Log Settings**, make sure that the Enable logging box is checked; you can set here the size and number of log files (default is 5 files of 5 MB):



Turning CAP logs on

1) On the PC where the CAP is installed, go to the installation directory (default: C:\Program Files (x86)\Unify\OpenScapeCTI) and then edit the **\config\common\global.cfg** file and change the following:

```
log.level = 5
log.maxLines = 100000
log.maxFiles = 10
```

2) Go to **\config\<PC name>\CA4000 _<SCC_name> folder**, edit the CA4000 .cfg file and set

```
log.level=5
```

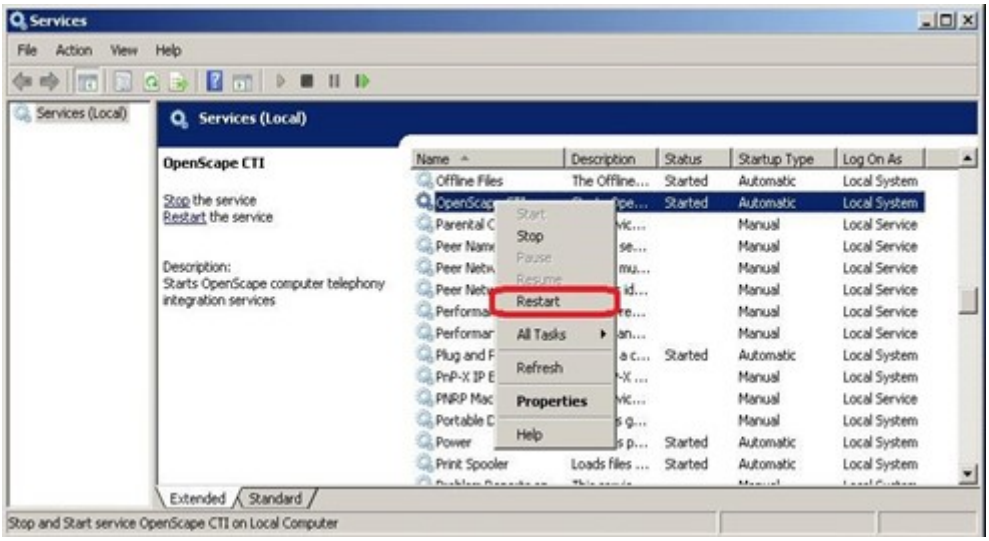
3) Go to **\config\<PC name>\telasServer_<SCC_name>** folder, edit the Telas.cfg file and set

```
log.level=5
cstaLogEnabled=1
debugLevel=9
```

4) Go to **\config\<PC name>\sccp_<SCCP_name>** folder, edit the **Telas.cfg** file and set

```
log.level=5
cstaLogEnabled=1
debugLevel=9
```

5) Restart CAP service:



Collecting BLF logs

Since Windows 7, the logs and configuration data are normally located in a hidden directory, **C:\ProgramData\BLF**.

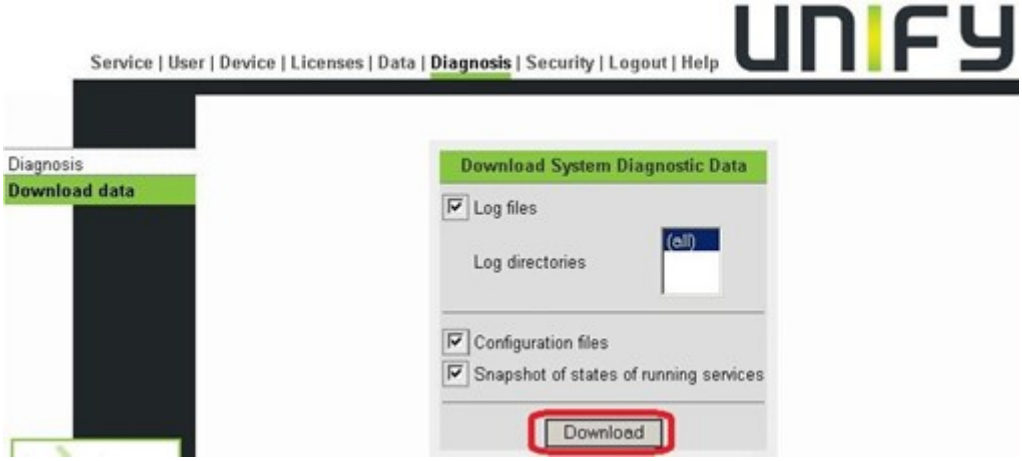
The complete content of this folder should be collected.

NOTICE: It is recommended to stop the BLF application and delete the log files before reproducing the issue.

Collecting CAP logs

1) Open CAP Management interface and go to the **“Diagnosis”** tab.

2) Select all checkboxes and click **Download**, then **save the sysdiag.zip**.



Archiving the logs

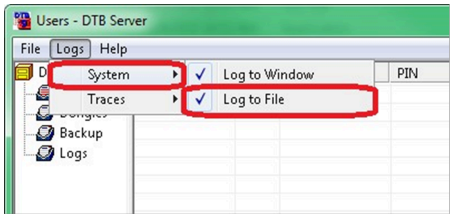
Archive all BLF and CAP log files together.

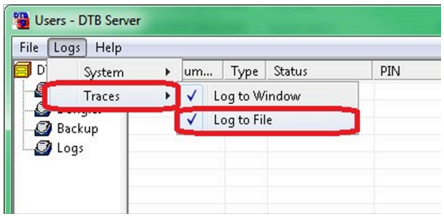
> **NOTICE:** If there are more than one BLF clients or the BLF client runs on a separate machine than the BLF server, involved, please create a separate archive for each such BLF client involved.

5.4 DTB for Windows

Turning logs on

1) Stop **DTB Master**
2) Edit `C:\DTB\DTBNetzConfig\dtbmaster.ini`
3) Set **logfile=on**
4) In DTB Server enable the options **Logs -> System -> Log to File** and **Logs -> Traces -> Log to File**





Obtaining CAP logs

- If DTB is used with CAP, please collect the CAP logs as described at the BLF-Win chapter above.

Collecting logs

- Since Windows 7, the DTB logs are usually located in the following directories:

  `C:\DTB\Display Telephonebook`

  `C:\DTB\DTBNetzConfig`

  NOTICE: It is recommended to stop the DTB application and delete the log files before reproducing the issue.

  Archive all the files under the mentioned folders + the CAP logs.

5.5 Integrated DTB

Collecting logs

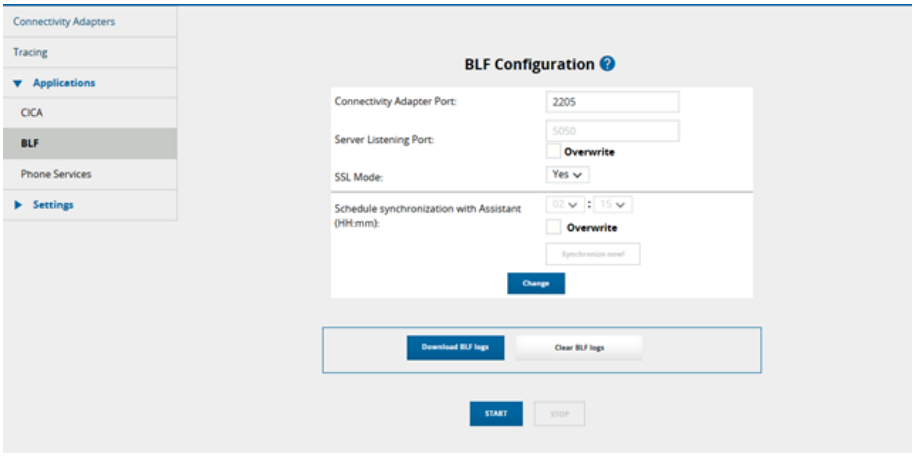
1) On the OpenScape 4000 Portal go to **Maintenance -> Logs -> Export**, make sure that the **DTB** and **Webservice** checkboxes are selected,
2) Press **Export**:

5.6 Integrated BLF Server

Collecting logs

1) On the OpenScape 4000 CSTA (accessible via **OpenScape 4000 Assistant -> Expert Mode**) go to **Applications-> BLF**,

2) Press **Download BLF Logs:**

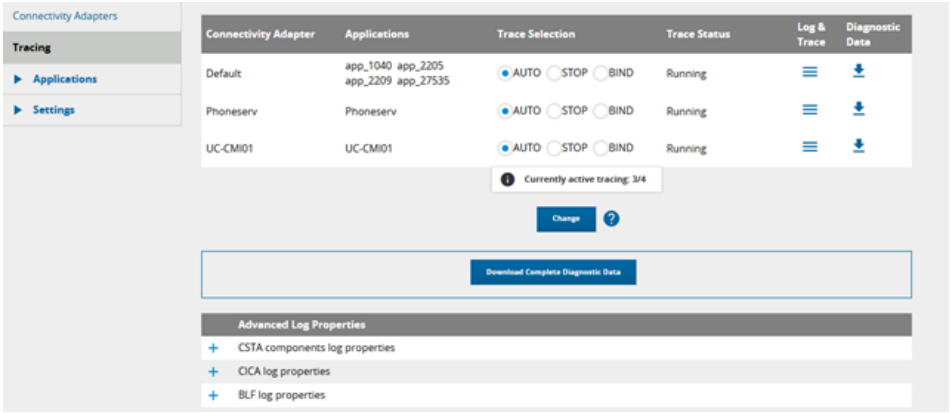


NOTICE: You should delete the old logs before reproducing an issue, via the Clear BLF logs button.

Collecting CSTA logs

For BLF-Win and DTB issues, also the OpenScape 4000 CSTA logs should be collected.

On the OpenScape 4000 CSTA (accessible via **OpenScape 4000 Assistant -> Expert Mode**) go to **Tracing** and press **Download Complete Diagnostic Data**:



6 UC Interworking with OpenScape 4000

6.1 Basic Functionality

UC works based upon Front-end/Back-end concept. It may be distributed over one or more Front-end servers and one Backend server.

“In computer science, the **front end** is responsible for collecting input in various forms from the user and processing it to conform to a specification the **back end** can use. The front end is an interface between the user and the back end. The front and back ends may be distributed amongst one or more systems.”

Additionally, it may use some MS servers for UC conferences (Note: UC conferences are not the same as OpenScape 4000 large conferences made by means of consultation and conference options from the phone menu. For OpenScape 4000 conference concept there’s no extra server needed.)

Generally, the communication between OpenScape 4000 and UC has the following flow:

OpenScape 4000	UC
CP- 4K ACL CSTA	BCOM WebClient

UC clients:

- OpenScape Web Client
- OpenScape Desktop App
- OpenScape Fusion for Office
- OpenScape Fusion for Notes
- OpenScape Extensions for Outlook

An error may be anywhere in the chain.

6.2 OpenScape 4000 System

The HISTA and SWU Regen from the system should always be provided.

The ACL component is needed in all OpenScape 4000 system traces.

The permanent trace in the OpenScape 4000 system includes this by default (TRACS profile 8).

Details can be found in the chapter 1 of this document.

6.3 OPENSCAPE 4000 CSTA

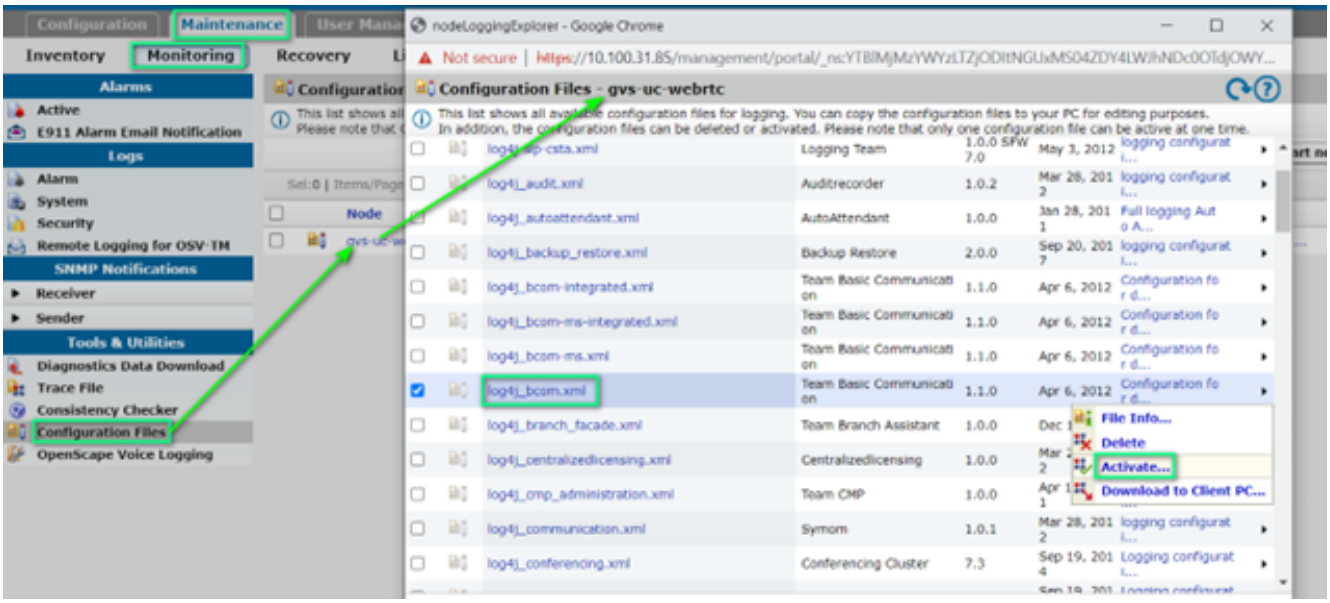
Please refer to the chapter 3 of this document.

6.4 BASIC COMMUNICATION (BCOM)

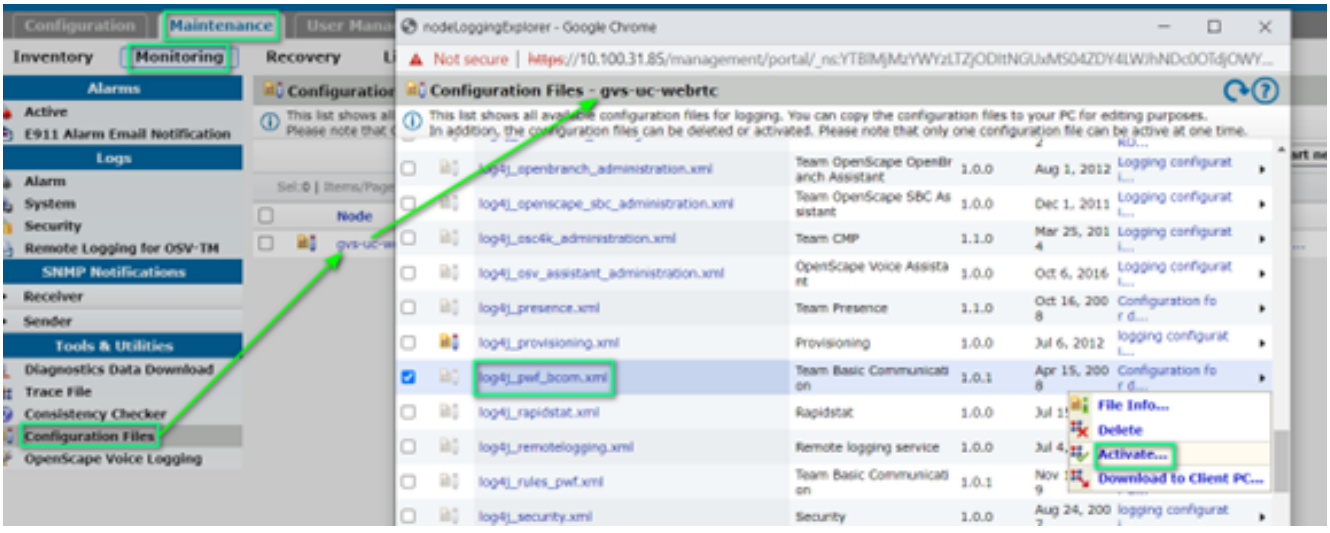
6.4.1 BCOM Trace Activation

Step by Step

1) Connect to Back-end address in order to access the CMP (Common Management Platform) Ex: **https://10.100.31.85/management/**
2) After Login go to **Maintenance** tab -> **Monitoring** -> **Configuration files**, click**BackendUC**
3) Search and check**log4j_bcom.xml**
4) Click **Activate**.



5) In case the error is preferred device or name device list related, then **log4j_pwf_bcom.xml** has to be activated.



6) In case of issues related to synchronization of numbering plans, phones from OpenScape 4000 to UC, then BCOM **log level log4j_h4k_administration.xml** has to be set. Additionally, Assistant traces

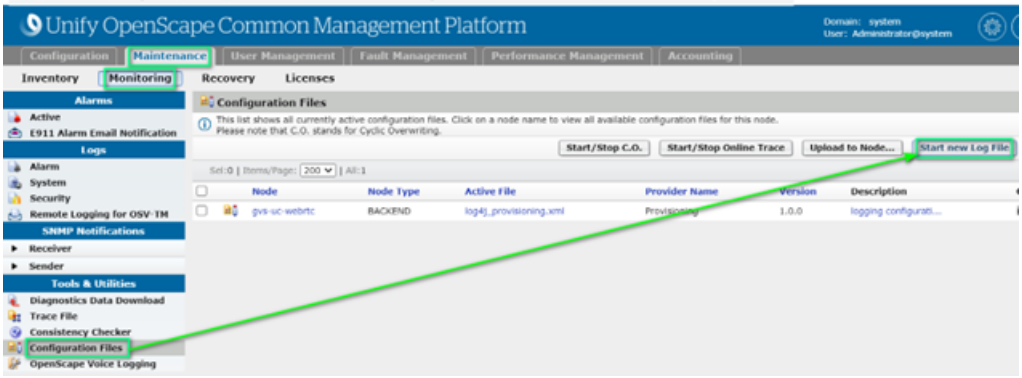
has to be provided, these can be found in Assistant (ADP) Machine under **/var/log/tomcat6/XIEservice.log .**

6.4.2 Restart of BCOM Trace

Step by Step

1) Connect to Back-end address in order to access the CMP (Common Management Platform) Ex: **https://10.100.31.85/management/**
2) After Login go to **Maintenance** tab -> **Monitoring** -> **Configuration files**,check **BackendUC**

   The FrontEnd and BackEnd nodes may have different names
3) Click **Start new log file**



6.5 WEBCLIENT

6.5.1 Activation/Verification of WebClient Logs

For nearly all issues WebClient runtime logs are needed. For all deployments besides Integrated Simplex they are located in **/var/siemens/common/log/webclient**. The logs are needed in debug-level usually to get the most information out of them and to resolve the issue as soon as possible. Please provide logs from test-system always in `log-level 5`.

Step by Step

1) For this please edit file:

   `.../opt/siemens/HiPathCA/config/common/global.cfg` and make sure the log-config-section looks as follows:

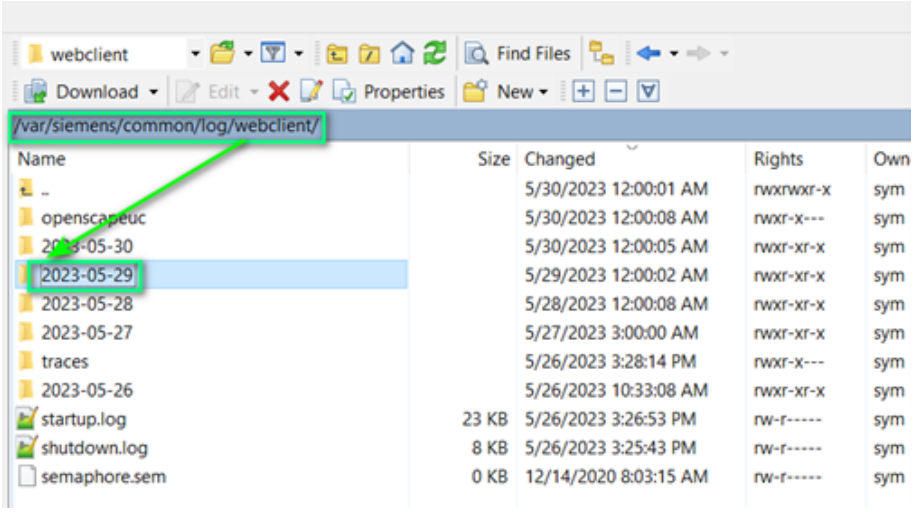
```
<?x if(<?x $IS_HP8K ?> == "1") ?>
<?x setvar (LOG_INIT_LEVEL4J = "5" ) ?>
?x setvar (LOG_INIT_LEVEL = "5" ) ?
?x setvar (LOG_INIT_MAXDAYS = "2" ) ?
?x setvar (LOG_INIT_MAXFILESPERDAY = "15" ) ?
?x else ??x setvar (LOG_INIT_LEVEL4J = "5" ) ?
?x setvar (LOG_INIT_LEVEL = "5" ) ?
?x setvar (LOG_INIT_MAXDAYS = "5" ) ?
?x setvar (LOG_INIT_MAXFILESPERDAY = "30" ) ?
?x endif ?
```

2) After changing the **global.cfg** according to this **you need to restart WebClient on all nodes of the deployment**.
3) Reproduce the problem, afterwards collect the complete WebClient log-folder from all nodes.

6.5.2 Collecting WebClient Logs

Step by Step

1) Connect by file transfer to back-end and front-end servers.
2) Navigate to **/var/siemens/common/log/webclient** and download the folder corresponding to the date, the error was occurring.

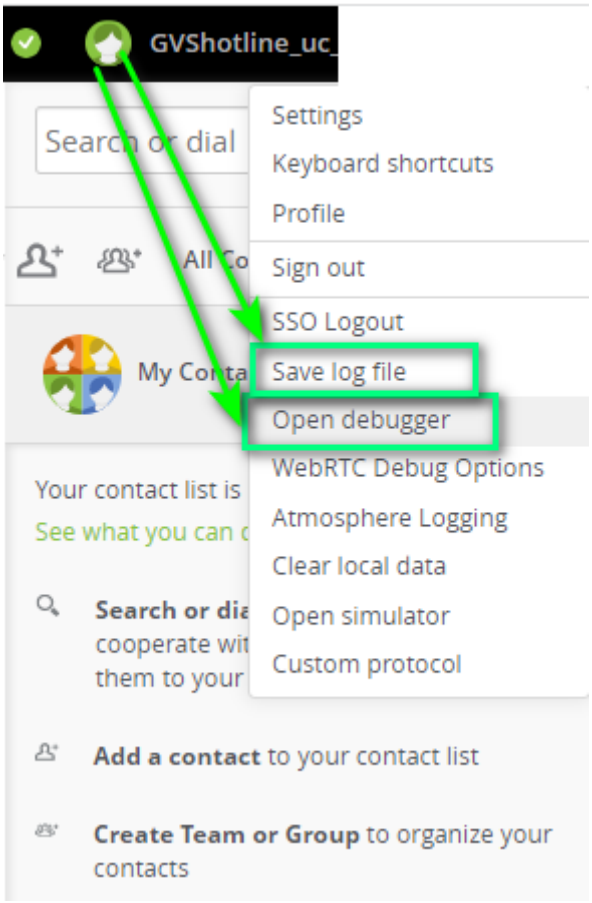


3) You may restart the traces as previously explained.

6.5.3 How to activate User Interface Trace for WebClient

Step by Step

1) Long press the Profile picture and CTRL.
2) Open the debugger and perform the scenario
3) Save the log file

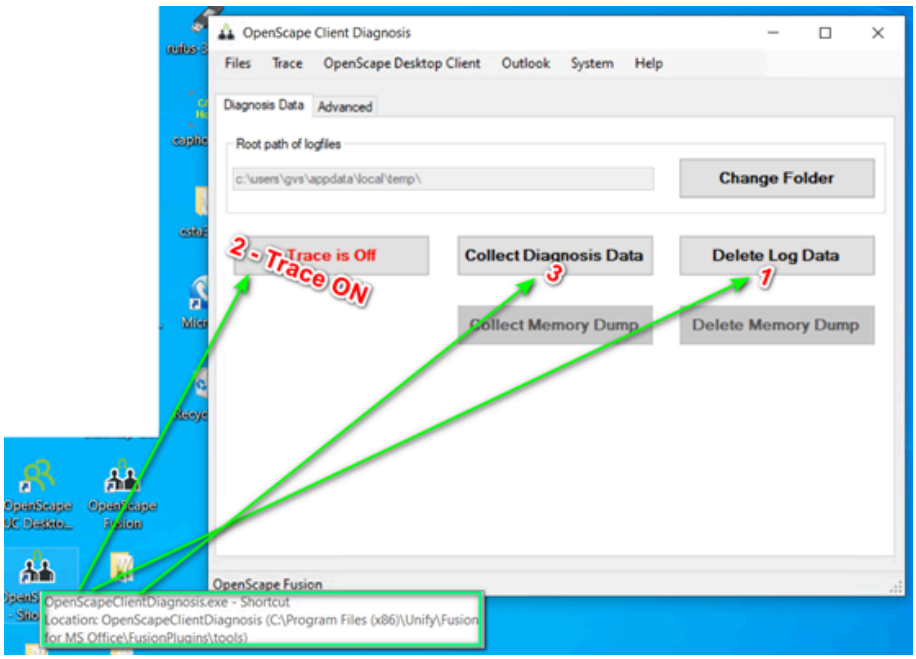


6.5.4 OpenScape Fusion for Office Traces Activation

Step by Step

1) Go to `C:\Program Files (x86)\Unify\Fusion for MS Office \FusionPlugins\Tools\`.
2) Delete the existing log data.
3) Set the trace to **ON.**
4) Exit **F4O** and log back in.

5) Perform the scenario and Collect Diagnosis Data.
The ODC_xxx.zip file is needed for the investigation of the issue.



6.5.5 SOAP Connection

For some particular cases, SOAP traces may be needed.

6.5.5.1 Tracing SOAP Connection for Assistant (ADP) and Manager (MGR) machines

The logs are under the following path:

```
Assistant-linux:/var/cm/sad/trace # ll -lprt *SoapServer
-rw-r----- 1 sad unity 2 May 29 15:56
uxisinit.num.SoapServer
-rw-r----- 1 sad unity 3 May 29 15:56
restart.num.SoapServer
/var/cm/sad/trace/e164log.td
```

`/var/log/tomcat6/XIEservice.log` (from OpenScape 4000 Manager)

`/var/log/tomcat6/XIEservice.log` (from OpenScape 4000 Assistant)

6.5.5.2 Tracing SOAP for UC

Activate the trace profile **log4j_h4k_administration.xml** in the same way as described under chapter BCOM Trace Activation on page 124

The traces should be reported in **symphonia.log** from the Backend.

6.5.5.3 Special Diagnosis Tool

Sometimes it could be useful in investigating problems to simulate a SOAP call e.g. like entering information via HTTPS.

Such thing and others could be achieved by application **XIEWebServiceClient**.

The application is accessible from Assistant/**Manager GUI** -> **Utilities** -> **XIE web service**.

6.5.5.4 OpenScape User Management

Please check the CM-UM related part from chapter 2 of this document.

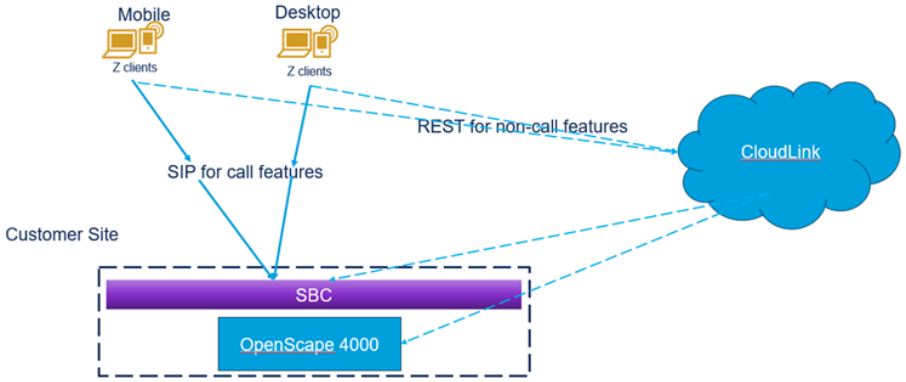
7 Zoom Phone System Integrations with OpenScape 4000

7.1 Introduction

Zoom is a cloud-based phone system that provides voice communication features such as call management, call forwarding, voicemail, and integration with Zoom Meetings. The Zoom-Mitel Phone System Integration (PSI) solution offers a hybrid communication model that enables users to maintain the telecom functions with their OpenScape 4000 system while extending its functionality with Zoom's cloud-based features.

This integration allows Zoom's Phone tab to become a SIP Softphone that registers to the Mitel Calling Platform, utilizing the OpenScape SBC, if accessing over the Internet. The OpenScape SBC acts as the secure registration point between your on-premises OpenScape 4000 and Zoom Workplace clients. This allows various Zoom PSI endpoints - including desktop clients, mobile devices, and desk phones - to connect directly to OpenScape 400.

Please ensure that the official documentation has been reviewed to confirm all the system requirements. For further details, refer to the official documentation. OpenScape Solution Set V11, Zoom with OpenScape 4000 and OpenScape SBC Phone System Integration (PSI), Service Documentation, Issue 1 *(PDF)*



- **CloudLink Platform**: Mitel CloudLink Platform enables communication between OpenScape 4000 and cloud-based applications. Acting as the intermediary, CloudLink platform bridges the Zoom and OS4K systems, ensuring seamless account integration.
- **CloudLink Daemon:** CloudLink Daemon is a software component designed for integration with multiple unified communication platforms. It complements the CloudLink gateway,which connects OS4K to the CloudLink platform and CloudLink applications, by enabling additional

  Features. The CloudLink Daemon is embedded in the OpenScape 4000 platform. Its primary function is to facilitate the connection with Mitel CloudLink enabled applications such as Zoom PSI.

7.2 Troubleshooting Connectivity Issues Between CloudLink and OpenScape 4000

If there are **connectivity issues between CloudLink and OpenScape 4000,** platform logs are required for further investigation.

These can be downloaded through OpenScape 4000 Platform Administration by navigating to:

Maintenance -> Logs -> Export -> Export Logs System Webservice (including Kubernetes).

Review the Zoom, Mitel Phone System Integration (PSI) with Zoom Troubleshooting , Service Documentation for more information related to troubleshooting procedures.

7.3 User Provisioning and Log Collection for Investigation in OpenScape 4000

User provisioning is managed in OpenScape 4000 Assistant by an OpenScape 4000 administrator. For investigation, Assistant logs related to Zoom PSI and the User Comparison Report from CloudLink are required. Assistant logs should be downloaded from Diagnostics -> Trace Download -> Zoom PSI profile.

7.4 Log Collection Guidelines for Call and Feature-Related Issues in OpenScape 4000

To diagnose call-related and non-call-related issues in OpenScape 4000, specific log files are required.

For **call-related issues** (pure SIP signaling like hold, retrieve), please provide SBC, Gateway, and RMX traces.
href="https://nuxeo.unify.com/nuxeo/site/proxy/nxdoc/view/raw/60aa78dd-af1c-447a-a698-a3dda6ae05d6"

For **non-call related issues** (CSTA-based features like Call Log, DND, CF), please provide the following traces:

1) **CSTA logs**: From Assistant, go to Expert Mode -> Permanent Logging -> CSTA Tab. Select the CloudLink CSTA connectivity adapter and download the logs.
2) **CloudLink Gateway (CLGWY) logs**: These can be downloaded from the CloudLink Platform -> System Inventory -> Applications -> CloudLink Gateways Manage -> Download Logs.
3) **RMX traces**: From Assistant, go to Expert Mode -> Permanent Logging -> System Status and Mega Traces tab.