OpenStage 15/20/30/40/60/80 TDM

Service Information- Trace Guide

Unify PH HQ GVS 1

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1 Important information

It is important to deactivate the trace settings manually at every phone again after downloading the trace. Otherwise the phone performance will be heavy negative influenced. Refer to chapter 4.6 (WBM) or 7.6 (OpenScape 4000 TSDM) or 11.4 (HiPath 3000 Manager E and OpenScape Business Manager E).
At OpenStage TDM only the trace functions are supported in connection with the Web Based Management. To save much time, I would use always the WBM, instead of the systems to make a phone trace.

2 Reason for this How-To

The development needs nearly every time a phone trace to analyze a phone problem. The OpenStage 60/80 TDM, in the following called OS_Hi, are able to trace internal processes that show the development what is going wrong. OpenStage 15/20/30/40, in the following called OS_Lo, only write exception logs, which should be downloaded for any phone problems.

This How-To describes the steps at OS_Hi for activating / reading out / deactivating those traces with OpenScape 4000, HiPath 3000, OpenScape Business and Web Based Management. For OS_Lo and OS_Hi it describes how to download the exception log.
With this How-To in hands the requester must only define which traces he needs for OS_Hi. Sometimes it could be necessary that to make other traces, by order of the development.

3 Trace settings

3.1 Trace component description

The following trace components/points can be chosen for a phone trace.

Administration
This deals with the changing and setting of parameters within the phone database, from both the User and Admin menus

Application framework
All applications within the phone e.g. Call view, Call log or Phonebook are run within the application framework. It is responsible for the switching: between different applications and bringing them into and out of focus as appropriate.

Application Menu
This is where applications to be run on the phone can be started and stopped.

Bluetooth Service
This handles the Bluetooth interactions between external Bluetooth devices and the phone.

Call log
This deals with the Call log application which displays the call history of the phone.

Call view
This handles the representation of telephony calls on the phone screen.

Communications
This is involved in the passing of call related information and signaling to and from the CSTA service.

Component registrar
Irrelevant for OpenStage TDM.

CSTA service
Any CSTA messages, are handled by this service. CSTA messages are used within the phone by all services as a common call progression and control :protocol.

Data Access service
This service allows other services to access the data held within the phone database.

Desktop
The desktop service is responsible for the shared parts of the phone display. Primarily these are the status bar at the top of the screen and the FPK :labels.

Digit Analysis service
This analyses and modifies digit streams which are sent and received by the phone e.g. canonical conversion.

Directory service
This performs a look up service for data in the phonebook, trying to match incoming and outgoing numbers with entries in the phonebook.

Health service
This monitors other parts of the phone for diagnostic purposes and provides a logging interface for the other services in the phone.

Help
The help function is handled by this service.

HFA Service Agent
Irrelevant for OpenStage TDM.

Instrumentation service
This is used by the Husim phone tester to exchange data with the phone for remote control, testing and monitoring purposes.

Journal service
The Journal service is responsible for saving and retrieving call history information which is used by the Call log application.

Media control service
This service provides the control of media streams (voice, tones, ringing etc.) within the phone.

Media Processing service.
This is a layer of software between the media control service and the tone generation and voice engine services. It is also involved in switching of :audio devices such as the handset and loudspeaker.

OBEX service
This is involved with Bluetooth accesses to the phone

Openstage Client Management
This provides a means by which other services within the phone can interact with the database.

Phonebook
This is responsible for the phonebook application within the phone.

Performance Marks
Irrelevant for OpenStage TDM.

Password management service
This is used to verify passwords used in the phone.

Physical interface service
This handles any interactions with the phone via the keypad, mode keys, fixed feature buttons, clickwheel and slider.

Service framework
This is the environment within which other phone services operate. It is involved in the starting and stopping of services.

Service registry
This keeps a record of all services which are currently running inside the phone

Sidecar service
This handles interactions between the phone and any attached sidecars.

Tone generation
This service handles the generation of the tones and ringers on the phone
.

Transport service
Irrelevant for OpenStage TDM.

vCard parser service
This trace is for sending/receiving vCards via the Bluetooth interface.

Voice engine service
This provides a switching mechanism for voice streams within the phone. It is also involved in QDC, Music on Hold and voice instrumentation.

Voice mail
Irrelevant for OpenStage TDM.

Web Server service
This provides the web access to the phone.

USB Backup service
This is for the backup/restore feature via USB devices.

Voice recognition
The Voice recognition service is for the voice dialing feature

Clock Service
Irrelevant for OpenStage TDM.

Please note:

For normal diagnostic operations these traces should never be enabled (If logging is enabled for these components, the phone becomes very slow):

- **Service Framework**
- **Service Registry**
- **OpenStage client management**

3.2 Examples for trace settings

- good default trace configuration
  - ***Call view***
  - ***CSTA service***
  - ***Communications***

- Audio related issues (missing ringtone, internal tone)
  - ***Digit Analysis service***
  - ***Media control service***

- ***Media Processing service.***
- ***Tone generation***
- ***Call view***

- Phonebook (name/number match)
  - ***CSTA service***
  - ***Digit Analysis service***
  - ***Directory service***
  - ***Phonebook***

- Call log (wrong/missing call log entry's)
  - ***CSTA service***
  - ***Call log***
  - ***Communications***
  - ***Journal service***

4 Web Based Management (WBM) only OS_Hi

The phone trace and also the core file can be configured and downloaded with the WBM.

4.1 Pre-conditions

A RNDIS driver, to be found on SWS under OpenStage Manager, must be installed on the PC. Run "RNDIS_V2_Rx.x.x_Setup.exe" and follow the installer's instructions. Do not plug in the USB cable before the installer asks to do it. Do not change the USB port after installation, because the phone will only work on the USB port where the phone was plugged in during the RNDIS Driver installation. In default the phone IP is 192.168.200.1 and for the RNDIS network interface the default IP set by the RNDIS Wizard is 192.168.200.2. If you have changed the phone IP in the phone Admin menu you have to change the RNDIS network interface IP to the same range like the new phone IP.

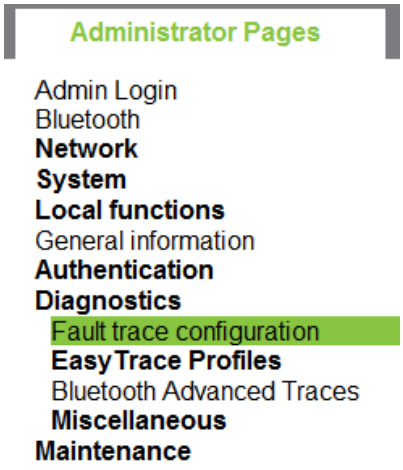
4.2 Start the WBM

When the phone is connected via the USB cable to the PC, you can reach the WBM out of the Internet Explorer with the following link:

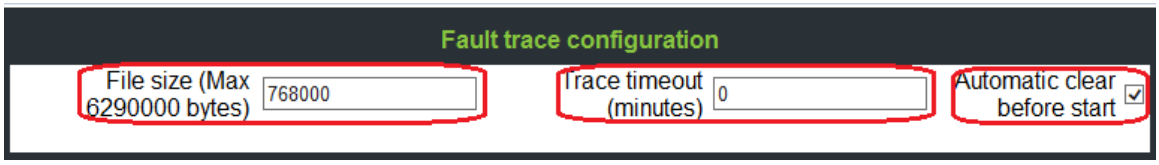
https://192.168.200.1/index.cmd?user=Admin

4.3 Activate internal phone traces (example for standard trace: Call view, Communications and CSTA Services)

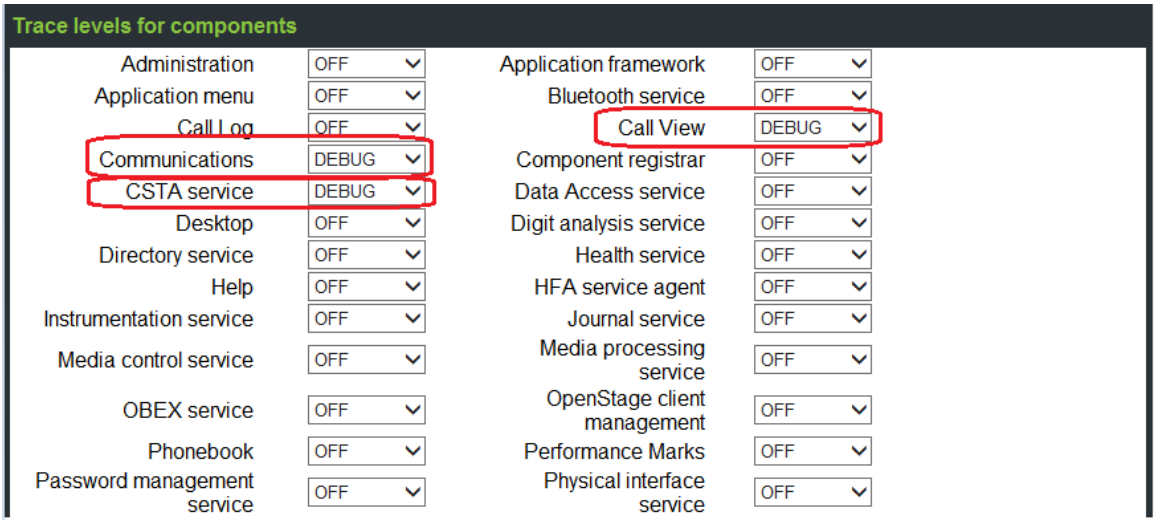
- Log-in to the WBM as administrator
- Select the **Fault trace configuration** menu under **Diagnostics**



- Set **File size** to 768000
- Set **Trace timeout** to 0 (disable trace timeout)
- Check the box for **Automatic clear before start**



- Set Call view, Communications, CSTA services and/or other necessary trace points to **DEBUG**
- Click the **Submit** Button

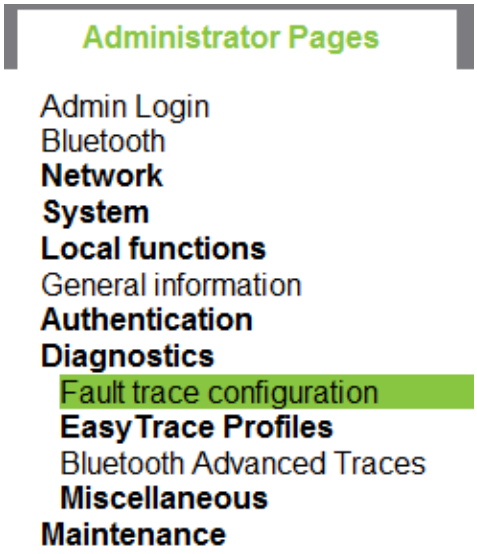


4.4 Make the phone trace

Now, if the trace configuration is transferred to the phone, reproduce the scenario which should be traced at the phone. **If the problem is reproduced, do not make any further user inputs at the phone because that would overwrite the traced problem.**

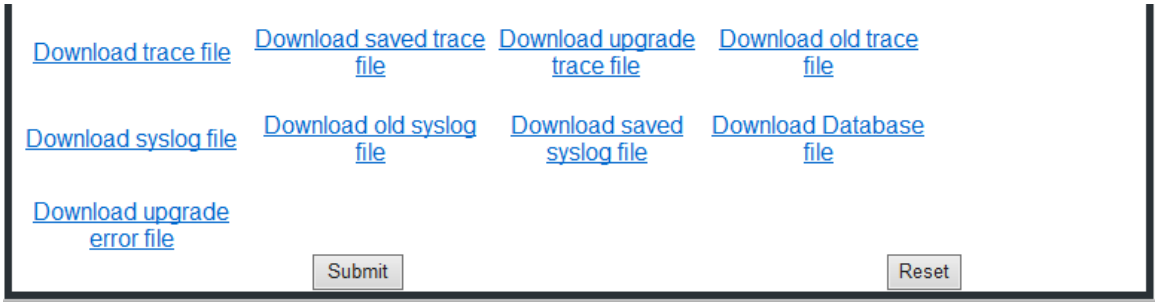
4.5 Read out the internal phone traces

- Log-in to the WBM as administrator
- Select the **Fault trace configuration** menu under **Diagnostic**



Now it is possible to download 11 different trace files

- Click on a trace file
- Save under… popup opens, save trace



- **trace file**
  The trace data according to the settings specified for the services.

- **old trace file**
  The trace file is stored only in RAM. When the trace file has reached its size limit, it will be saved as old trace file, and the current exception file is emptied for future messages.

- **saved trace file**
  Normally, the trace file is saved only in the phone RAM. When the phone restarts in a controlled manner, the trace file will be saved in permanent memory

- **upgrade trace file**
  The trace log created during a software upgrade.

- **upgrade error file**
  The error messages created during a software upgrade.

- **syslog file**
  Contains system messages (eg. Dhcp requests,boot,network changes,ntpclient,kernel,LLDP)

- **old syslog file**
  The syslog file is only in RAM. When the syslog file has reached its size limit, it will be saved as old syslog file, and the current syslog file is emptied for future messages.

- **saved syslog file**
  Normally, the trace file is saved only in the phone RAM. When the phone restarts in a controlled manner, the trace file will be saved in permanent memory

- **Database file**
  Phone Database

4.6 Deactivate the phone trace

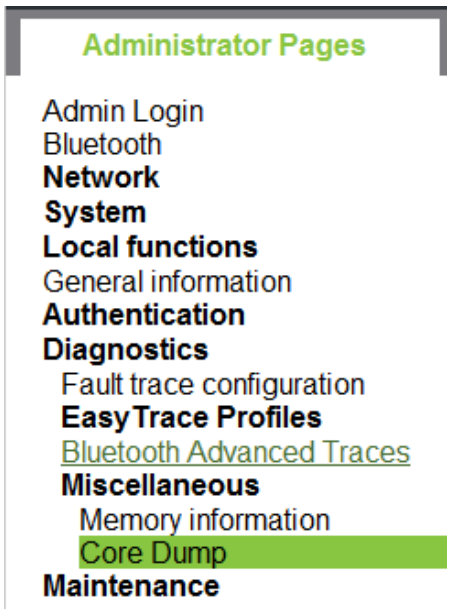
It is very important to deactivate the phone trace points manually, set all traces to OFF and transfer it to the phone. Otherwise the phone performance will be heavy negative influenced.

- Make all steps like at 4.3, but set all trace points to **OFF**

4.7 Activate core dump (set by default)

The core dump is important to see what is going wrong.
Normally the phone automatically generates a core dump if the phone crash's.

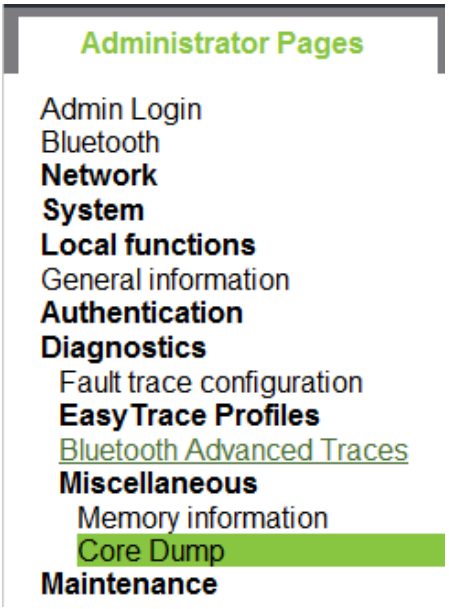
- Log-in to the WBM as administrator
- Select the **Core Dump** menu under **Miscellaneous**



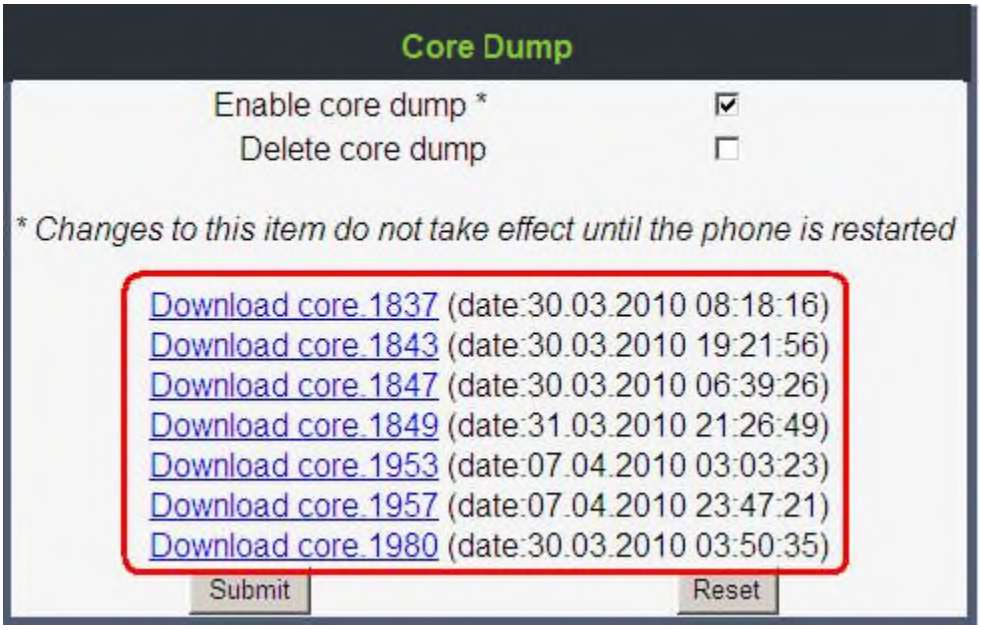
- **Activate** the checkbox for "Enable core dump"
- Press **Submit**

4.8 Download core dump

- Log-in to the WBM as administrator
- Select the **Core Dump** menu under **Miscellaneous**



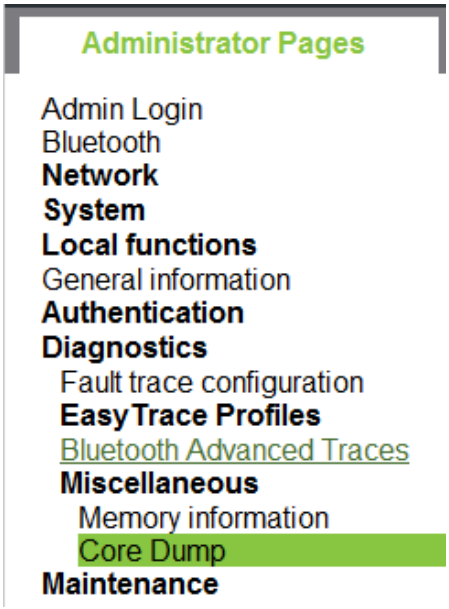
- Click on relevant core dumps
- Save under… popup opens, save trace



4.9 Delete old core dumps

Delete all old, already downloaded core files to give phone memory free.

- Log-in to the WBM as administrator
- Select the **Core Dump** menu under **Miscellaneous**



- **Activate** the checkbox for “Delete core dump”
- Press **Submit**

5 OpenScape 4000: Necessary Information to report

Very important for the analysis of phone problems is to verify, whether expected messages from the system are send to the phone and backward.
Very detailed description of the scenario will help to be able to reproduce the error, if possible.

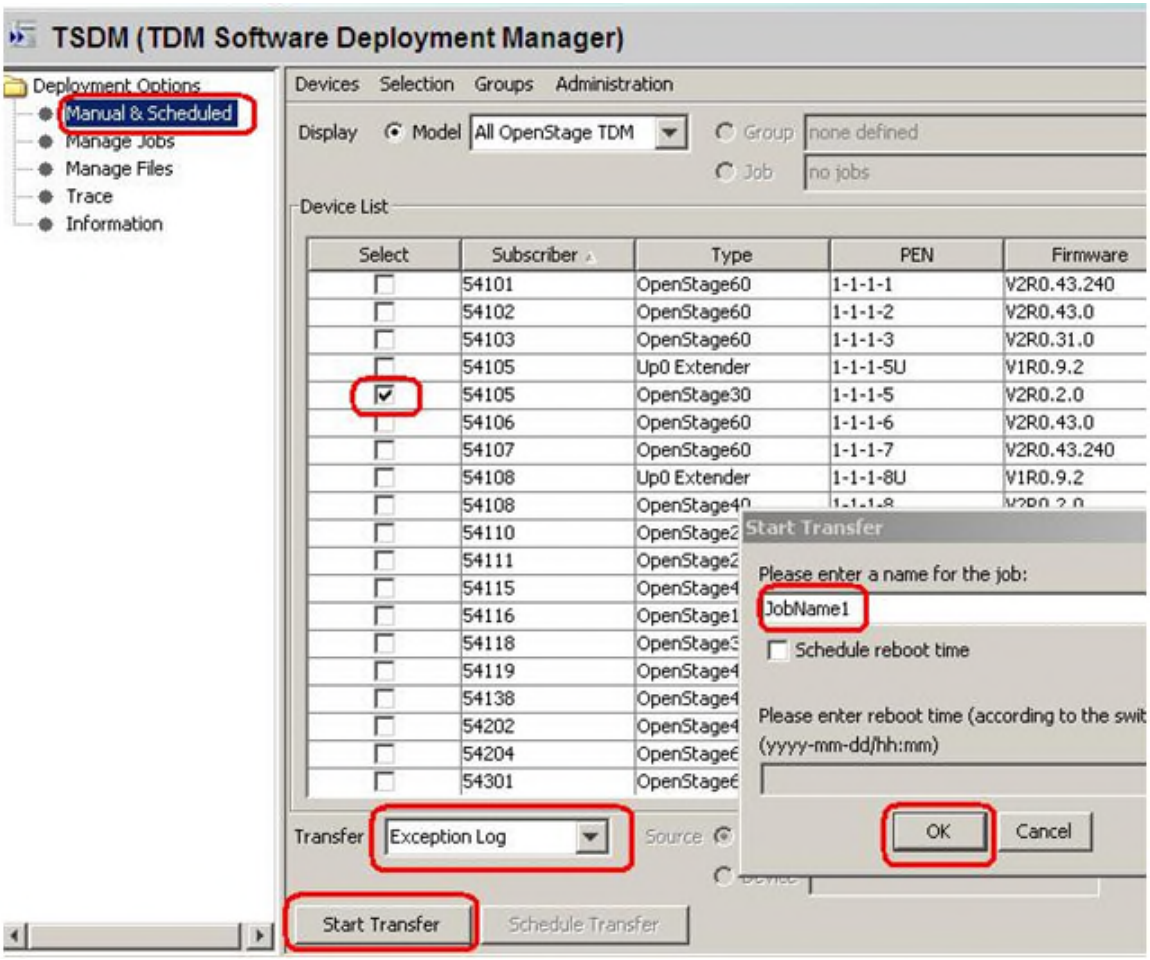
List of helpful information:

- Number of effected endpoint
- Physical Line of effected endpoint
- OpenScape 4000 Up0-Traces from the effected line
- Phonetrace at the effected phone from event
- Time / Date of observed event
- detailed description of the event (other involved endpoints, number etc) e.g. who called whom, conference, transfer
- parts of regen, which may be important for the scenario

6 OpenScape 4000: Phone Exception Log OS_Lo

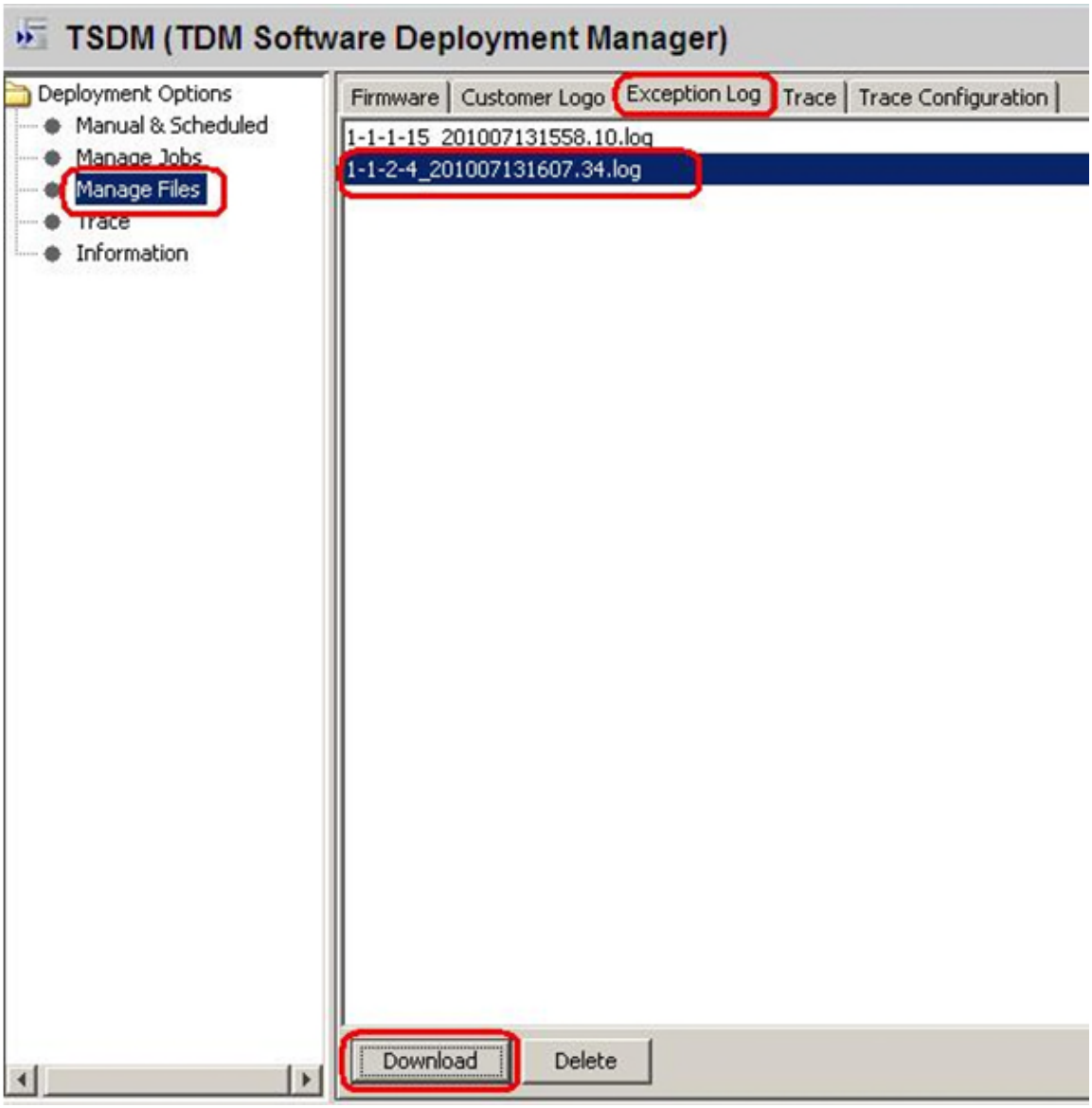
The phone exception log from the phone you can download with the TSDM (TDM Software Deployment Manager) of the OpenScape 4000 Assistant under Software Management.

- Open **TSDM**
- Open **Manual & Scheduled**
- Check the **Select** box for the phone (only one phone)
- Select **Exception Log** at Transfer
- **Start Transfer**
- Enter a job name
- Select **OK**
- Wait until the Status progress changes from 100% to an empty field



- Open **Manage Files**
- Select the tab **Exception Log**

- Mark the log file which should be downloaded
- Press **Download**



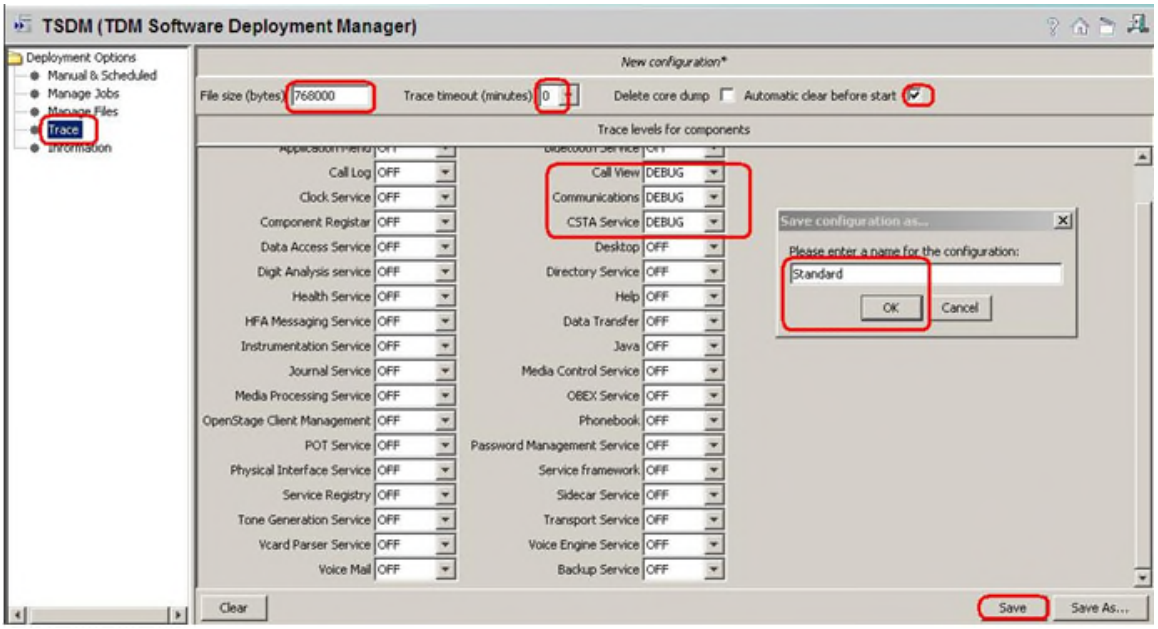
It belongs now to the browser settings if the exception log will be directly opened in an editor which you have to save or a save under… popup opens.

7 OpenScape 4000: Phone Trace OS_Hi

The phone trace can be configured and downloaded with the TSDM (TDM Software Deployment Manager) of the OpenScape 4000 Assistant. **Please note, that it is not possible to readout the actual activated trace configuration of the phone with TDSM. It needs much of time to make traces with TSDM, better use the WBM.**

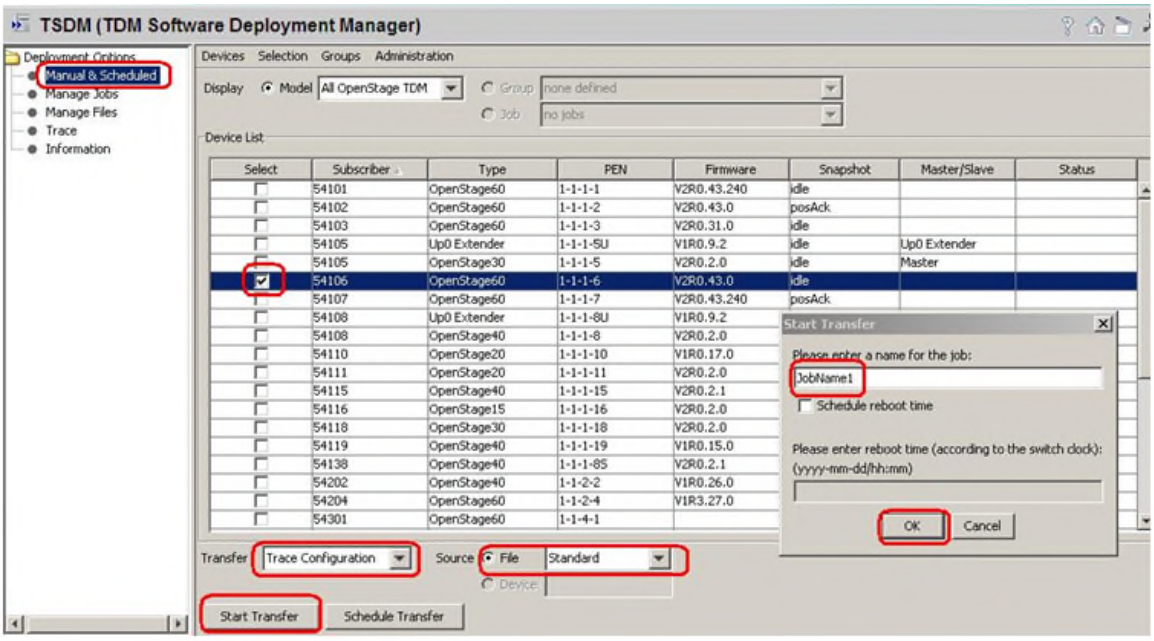
7.1 Creation of trace configuration template (example for standard trace: Call view, Communications and CSTA Services)

- Open **TSDM**
- Open **Trace**
- Set **File size** to 768000
- Set **Trace timeout** to 0 (disable trace timeout)
- Select the checkbox for **Automatic clear before start**
- Set Call view, Communications, CSTA services and/or other necessary trace points to **DEBUG**
- Press **Save**
- Enter a meaningful name for the template and select **OK**



7.2 Transfer the trace configuration to the phone

- Open **TSDM**
- Open **Manual & Scheduled**
- Select the checkbox **Select** for the phone (only one phone)
- Select **Trace Configuration** at Transfer
- Select the trace configuration template file (see 5.1) at **Source**
- **Start Transfer**
- Enter a job name
- Select **OK**
- Wait until the Status progress changes from 100% to an empty field

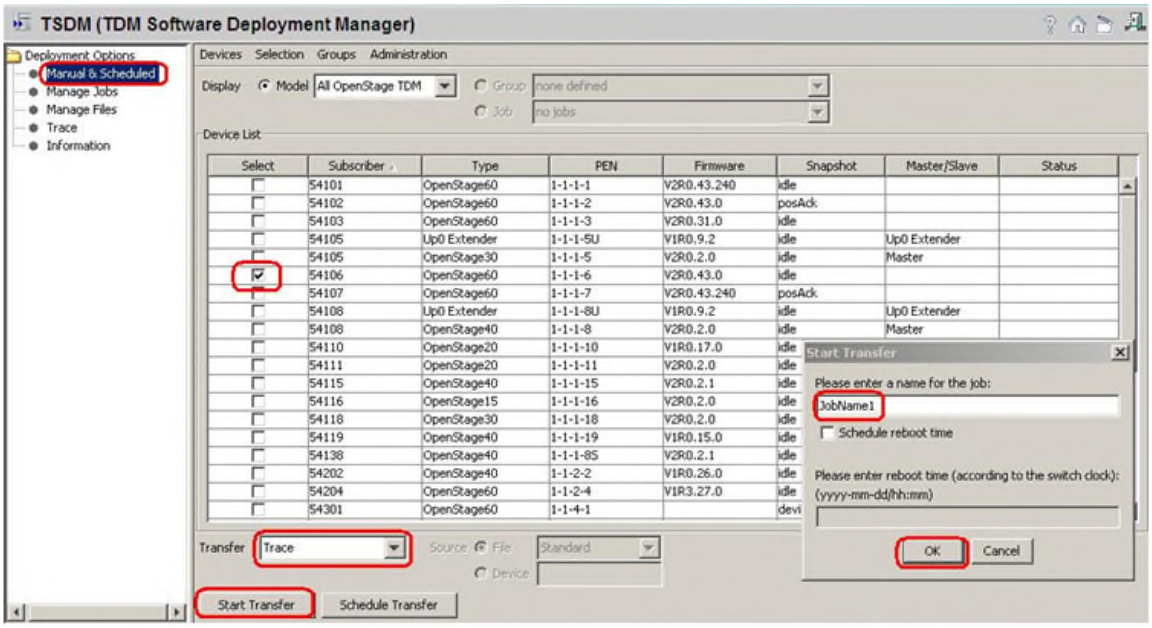


7.3 Make the phone trace

Now, if the trace configuration is transferred to the phone, reproduce the scenario which should be traced at the phone. **If the problem is reproduced, do not make any further user inputs at the phone because that would overwrite the traced problem.**

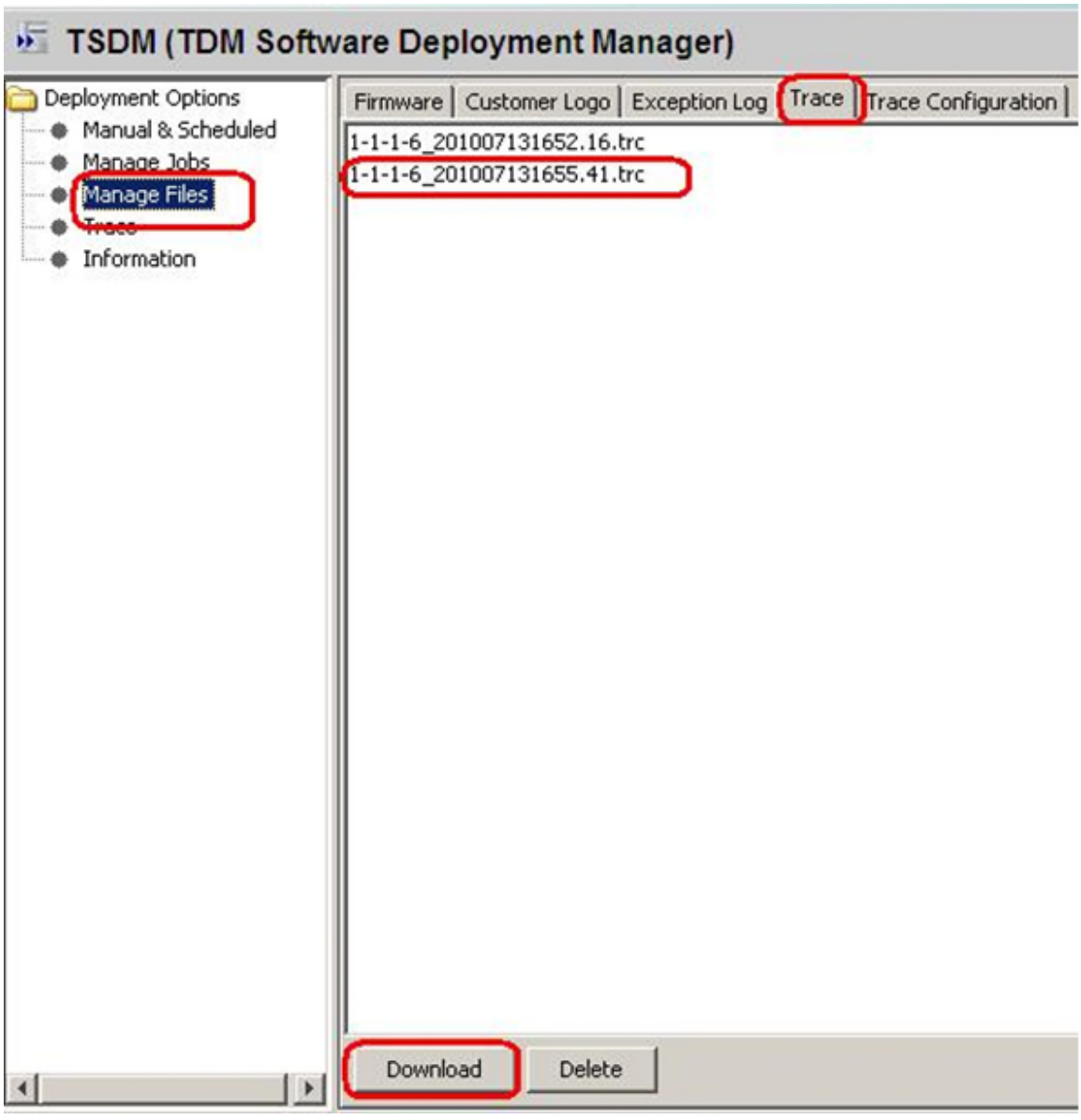
7.4 Transfer the phone trace to the OpenScape 4000

- Open **TSDM**
- Open **Manual & Scheduled**
- Select the checkbox **Select** for the phone (only one phone)
- Select **Trace** at Transfer
- **Start Transfer**
- Enter a job name
- Select **OK**
- Wait until the Status progress changes from 100% to an empty field



7.5 Download the trace from the OpenScape 4000

- Open **TSDM**
- Open **Manage Files**
- Select the tab **Trace**
- Mark the trace file which should be downloaded
- Press **Download**
- Save under… popup opens, save trace



7.6 Deactivate the phone trace

It is very important to deactivate the phone trace points manually with a trace configuration template, which has set all traces to OFF. Otherwise the phone performance will be heavy negative influenced.

- Make all steps like at 5.1, but set all trace points to **OFF**
- Make all steps like at 5.2, with the before at 6.6 created template

8 OpenScape 4000: System Trace regarding phone issues

This describes how you can make a system trace for a phone issue. **It is useful to make the system trace at the same time with the phone trace.**
The trace can be stopped at any phone of the system which has a programmed DDS key (in the following example the number 12345 has to be stored on the DDS key). It is not possible to stop the trace while dialing 12345 manually. The number in this example 12345 must be free and not reserved in the WABE. The trace will be stored on the system's hard drive under the filename you enter down. The trace configuration can be entered and run always at a OpenScape 4000 system, it is not influencing the system performance. The AMO language is English.

```
/* stop on speed dial with "12345"  (a DDS key with the number 12345 has to be programmed at least on one phone)
exec-tracs:bp;
res,all;
flagtr,off;
selmsg,pp,g1,all;
msglen,pp,g1,32;
selmsg,cp,g1,all;
msglen,cp,g1,48;
selmsg,rcv,g1,cd1,dest,40;
selmsg,rcv,g1,cd2,src,40,ne;
selmsg,stop,g1,cd1,dest,6c;  /* CP message
selmsg,stop,g1,cd2,ev,30;   /* SCR message
selmsg,stop,g1,cd3,byte,13,5;  /* byte counter or number length
selmsg,stop,g1,cd4,byte,14,01;  /* stop on called party 12345
selmsg,stop,g1,cd5,byte,15,02;
selmsg,stop,g1,cd6,byte,16,03;
selmsg,stop,g1,cd7,byte,17,04;
selmsg,stop,g1,cd8,byte,18,05;
on,hd,:diag:<filename>,99,y,y;
end
```

Should the number length be shorter, for example 4 digits "1234" delete the row with the green 05. Should the number be longer, for example 6 digits "123456" at the row:
selmsg,stop,g1,cd9,byte,19,06;
and edit the line with /* byte counter or number length at the end from **5** to **6**.

8.1 How to trace messages to/from single endpoints

English AMO language, example for the station number **64766**:

Bold lines are the commands & values to be entered.

```
<cha-funct:slang=eng;
<exec-disps:bp;
*lst,sw,loden,stno,64766,vce;
LTG  LTU  PBC/SLOT  CCT   L I N E   PHYS_LINE  SU  DI/TSI  SI  LODEN
 1T  17T  11T  9T  16T  1862T  746H  1718T  6B6H  0H   1H  0H   356H
 1T  17T  11T  9T  16T  1862T  746H  1718T  6B6H  1H   1H  0H   357H
 1T  17T  11T  9T  16T  1862T  746H  1718T  6B6H  2H   1H  0H   358H
 1T  17T  11T  9T  16T  1862T  746H  1718T  6B6H  3H   1H  0H   359H
 1T  17T  11T  9T  16T  1862T  746H  1718T  6B6H  0H   2H  4H   35AH
 ……..
*end
<
```

The red marked phys_line is needed later for the trace, in this example **6B6**:

6B6 → 06 High Byte and B6 Low Byte

exec-tracs:bp; (trace in background)
*** res,all;**
*** selmsg,sw,g1,cd1,byte,06,<Low Byte>;** example: **…,06,B6;**
*** selmsg,sw,g1,cd1,byte,07,<High Byte>;** example: **…,07,06;**
*** msglen,sw,g1,300;**
*** on,hd,:diag:<Tracefilename>,200,y,y;**
*** end**

do the scenario with the phone/phones

exec-tracs:bp;
*** off;**
*** end**
----

exec-tracs:bp; (trace command remains open)
*** res,all;**
*** selmsg,sw,g1,cd1,byte,06,<Low Byte>;** example: **…,06,B6;**
*** selmsg,sw,g1,cd1,byte,07,<High Byte>;** example: **…,07,06;**
*** msglen,sw,g1,300;**
*** on,hd,:diag:<Tracefilename>,200,y,y;**

do the scenario with the phone/phones

*** off;**
*** end**

Traces of more lines, e.g. 9EB and 9EF:

exec-tracs:bp;
*** res,all;**
*** selmsg,sw,g1,cd1,byte,06,<Low Byte>;** example**: …,06,EB&EF;**
*** selmsg,sw,g1,cd1,byte,07,<High Byte>;** example**: …,07,09;**

9 HiPath 3000 / OpenScape Business: Necessary information to report

Very important for the analysis of phone problems is to verify, whether expected messages from the system are send to the phone and backward.
Very detailed description of the scenario will help to be able to reproduce the error, if possible.

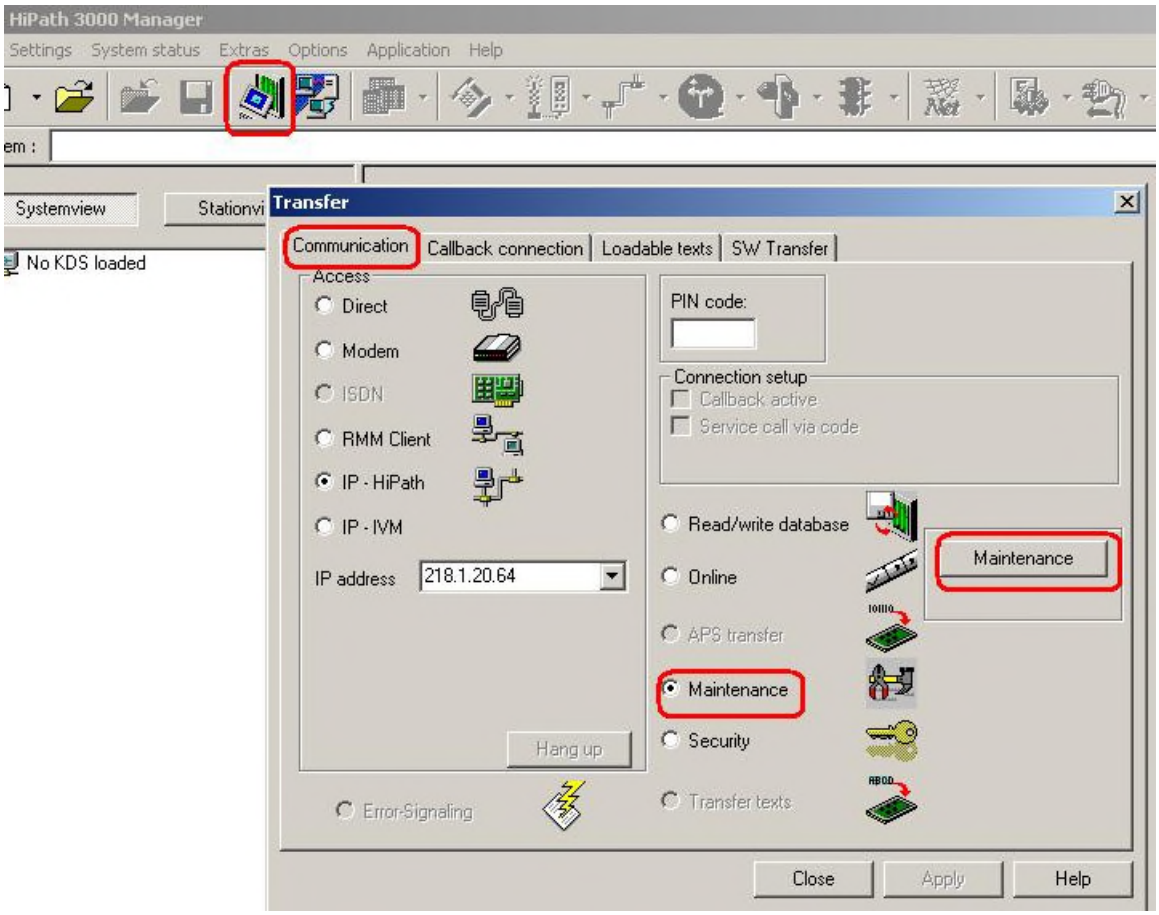
List of helpful information:

- Number of effected endpoint
- KDS of the system
- HiPath 3000 / OpenScape Business Traces configured for messages to/from phone
- Phonetrace at the effected phone from event
- Time / Date of observed event
- detailed description of the event (other involved endpoints, number etc) e.g. who called whom, conference, transfer

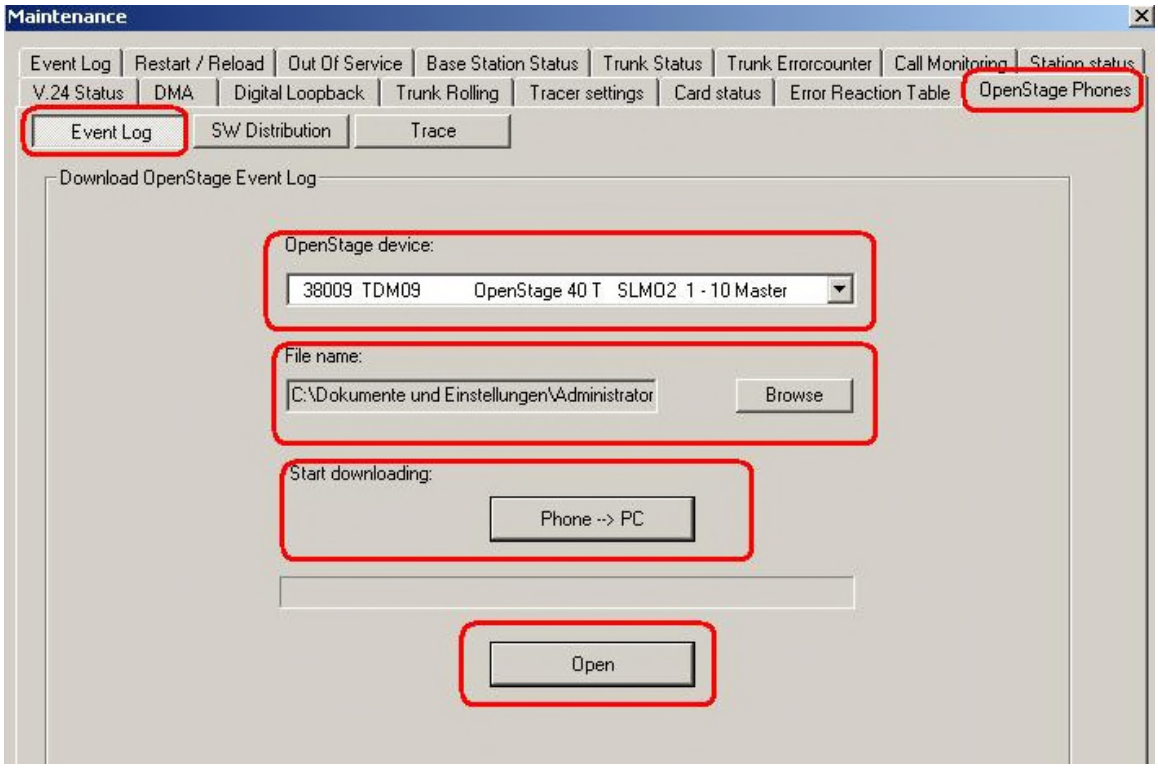
10 HiPath 3000 / OpenScape Business: Phone Event (Exception) Log OS_Lo

The phone event log from the phone you can download with the HiPath ManagerE of the HiPath 3000 / OpenScape Business under Maintenance.

- Log-in to the Manager as User group: **Development**
- Open **Transfer**
- Select checkbox **Maintenance**
- Press **Maintenance**



- Open tab **OpenStage Phones**
- Open tab **Event Log**
- Select **OpenStage device**
- Select **Browse** to enter a meaningful name and save directory
- Press **Phone → PC**
- **Wait** until the Event Log is downloaded
- Press **Open** (unnecessary, already stored in directory)
- Select Event Log, it will be opened in an editor (unnecessary, already stored in directory)
- **Save Event Log** (unnecessary, already stored in directory)

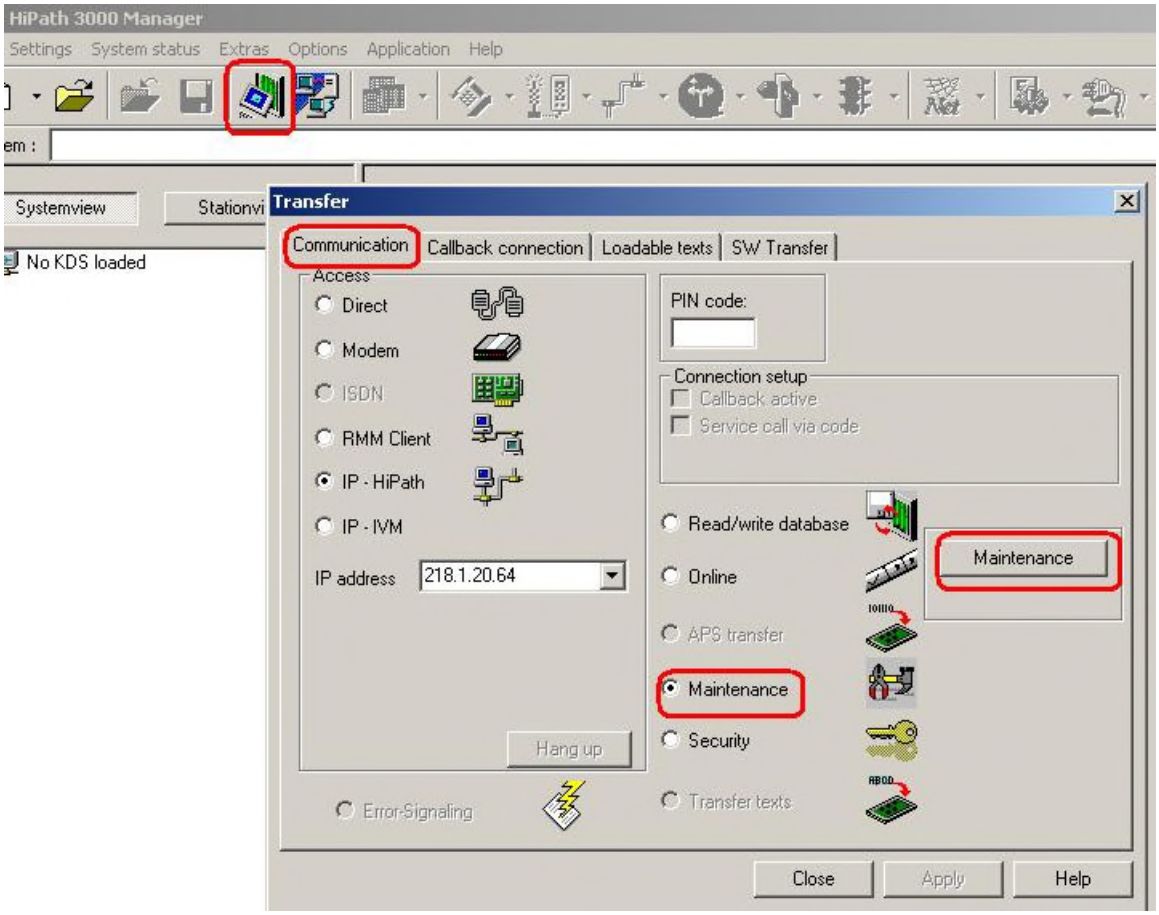


11 HiPath 3000 / OpenScape Business (X3 X5 X8): Phone Trace OS_Hi

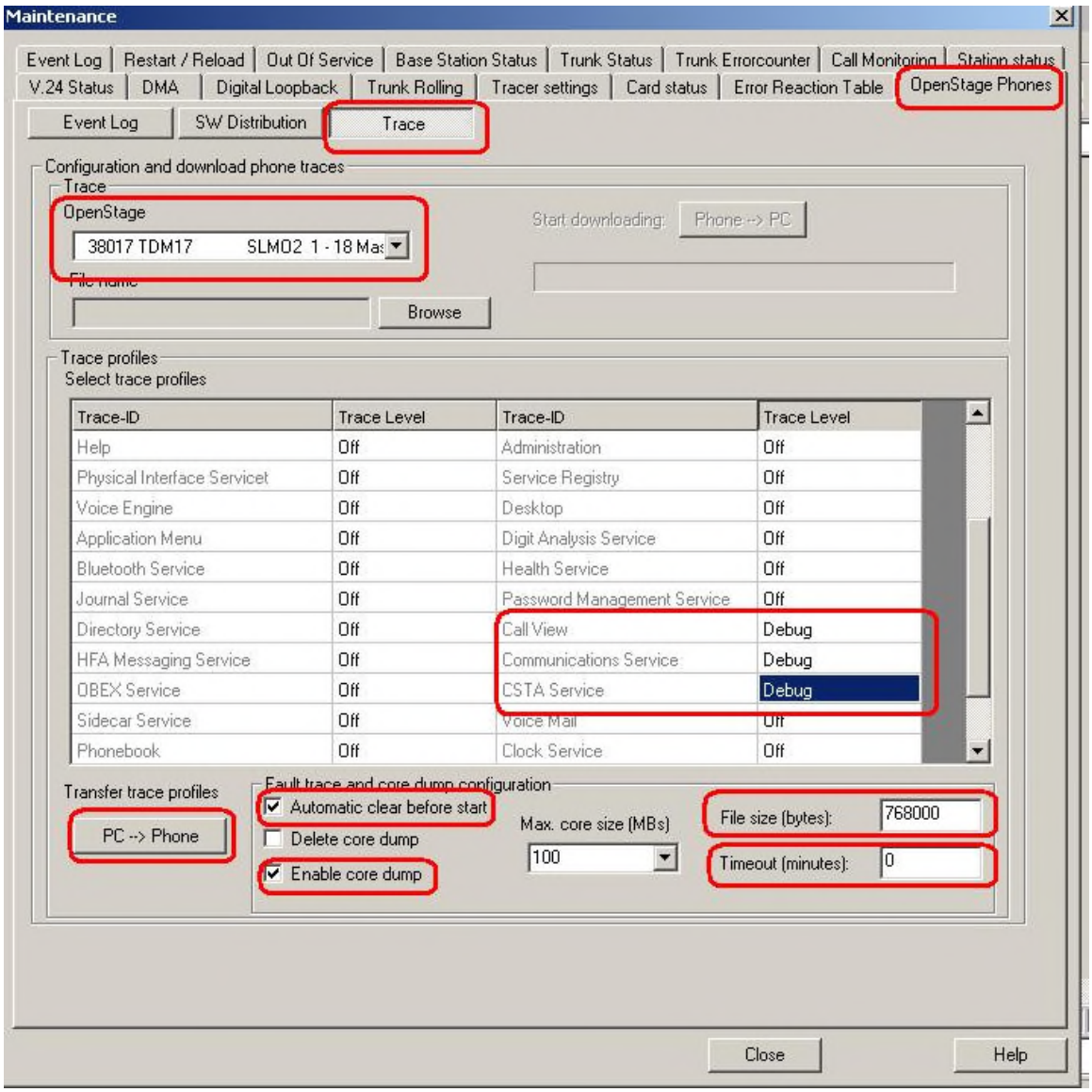
The phone trace can be configured and downloaded with the Manager E of the HiPath 3000 /OpenScape Business.
OpenScape Business X1 could not be configured via Manager E, for OS_HI configuration see chapter 4.
Please note, that it is not possible to readout the actual activated trace configuration of the phone with TDSM. It needs much of time, better use the WBM.

11.1 Activate phone trace (example for standard trace: Call view, Communications and CSTA Services)

- Log-in to the Manager as User group: **Development**
- Open **Transfer**
- Select checkbox **Maintenance**
- Press **Maintenance**



- Open tab **OpenStage Phones**
- Open tab **Trace**
- Select **OpenStage device**
- Set **File size** to 768000
- Set **Timeout** to 0 (disable trace timeout)
- Select the checkbox for **Automatic clear before start**
- Select the checkbox for **Enable core dump**
- Set Call view, Communications, CSTA services and/or other necessary trace points to **Debug**
- Press **PC → Phone**
- **Wait** until the trace configuration is transferred to the phone

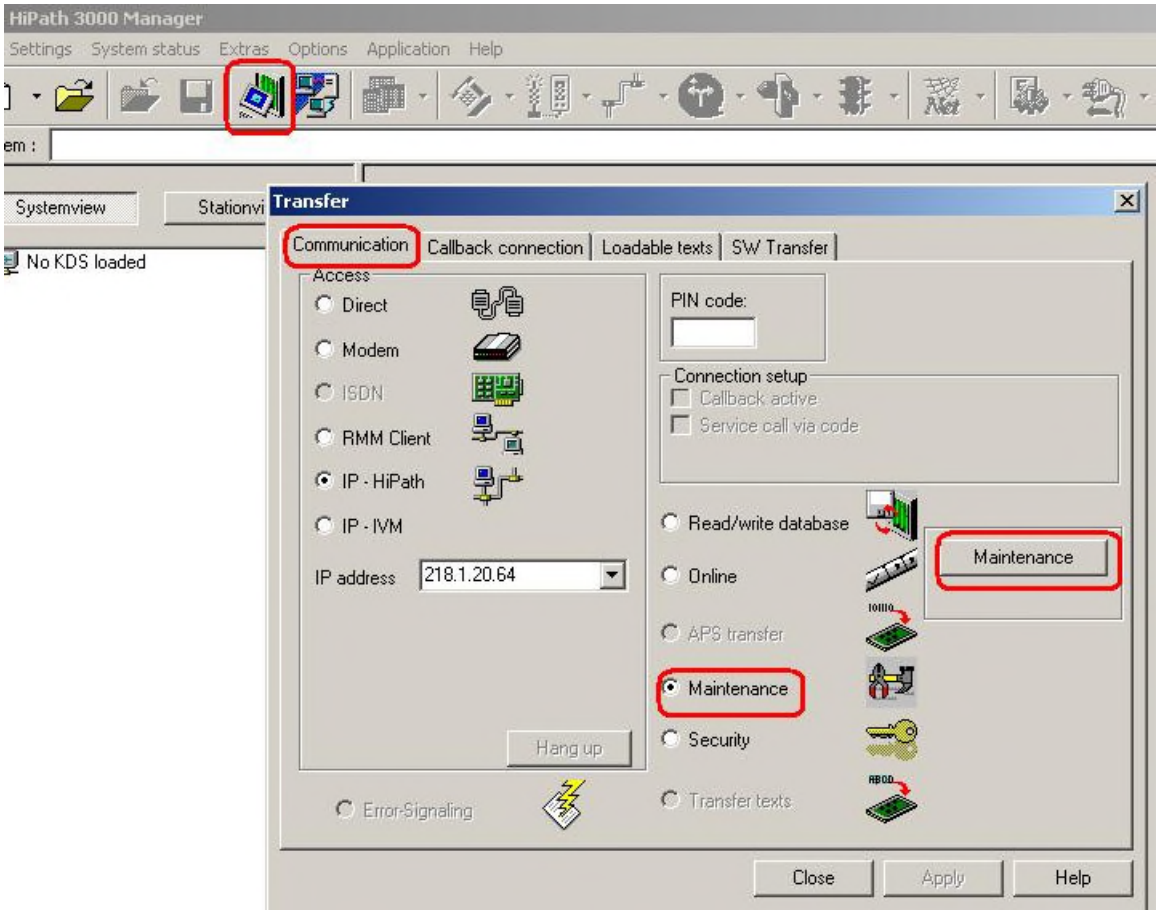


11.2 Make the phone trace

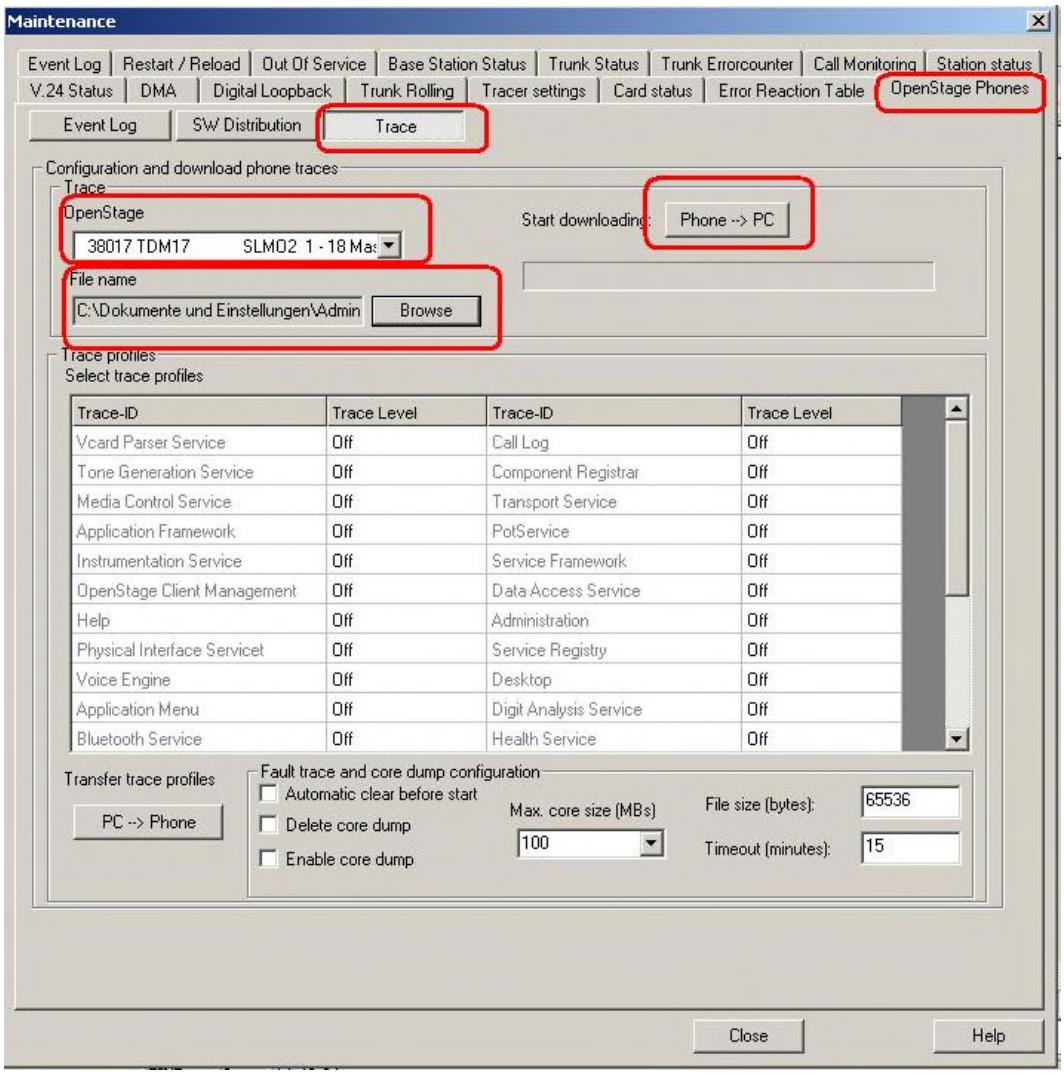
Now, if the trace configuration is transferred to the phone, reproduce the scenario which should be traced at the phone. **If the problem is reproduced, do not make any further user inputs at the phone because that would overwrite the traced problem.**

11.3 Download phone trace

- Log-in to the Manager as User group: **Development**
- Open **Transfer**
- Select checkbox **Maintenance**
- Press **Maintenance**



- Open tab **OpenStage Phones**
- Open tab **Trace**
- Select **OpenStage device**
- Select **Browse** to enter a meaningful name and directory
- Press **Phone → PC**
- **Wait** until the trace downloaded to the choosen directory above



11.4 Deactivate the phone trace

It is very important to deactivate the phone trace points manually, set all trace levels to OFF and transfer it to the phone. Otherwise the phone performance will be heavy negative influenced.

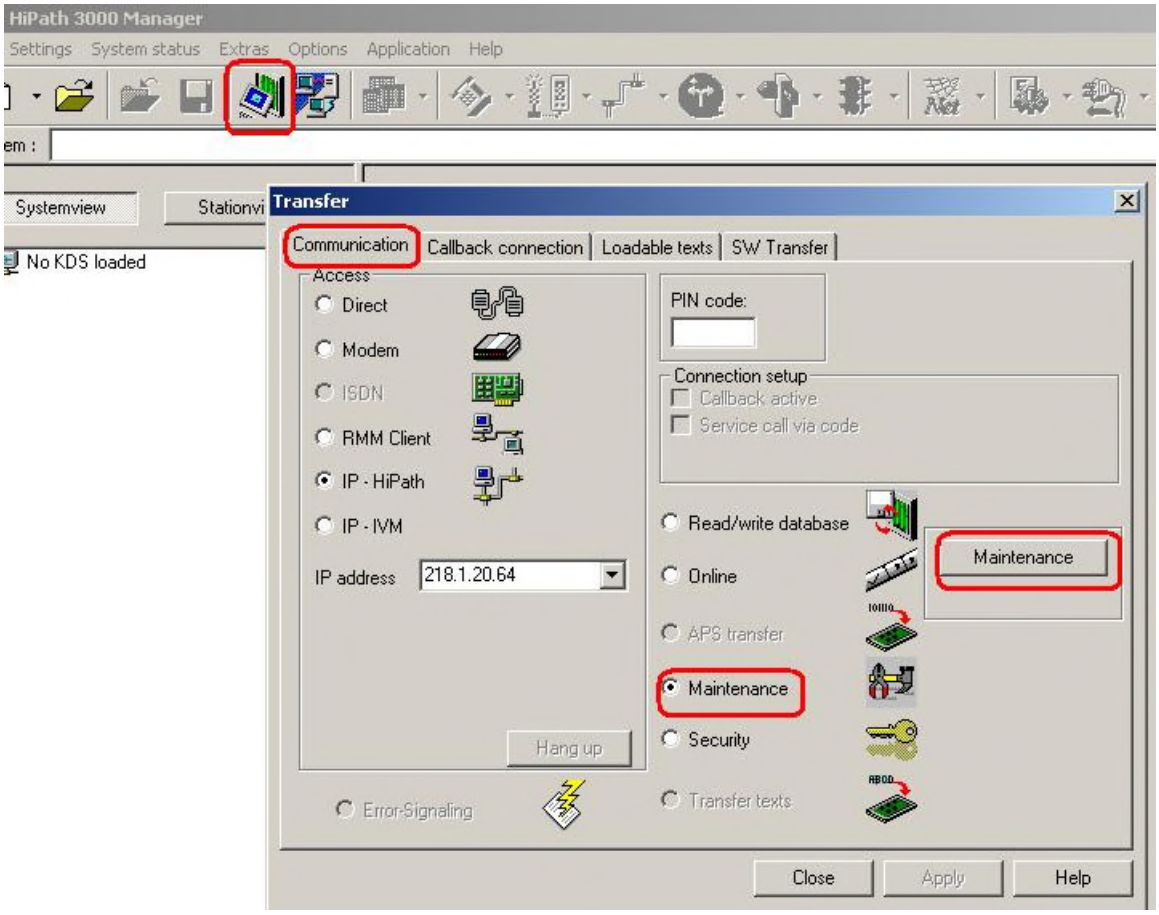
- Make all steps like at 9.1, but set all trace points to **Off**

12 HiPath 3000: System Trace regarding phone issues

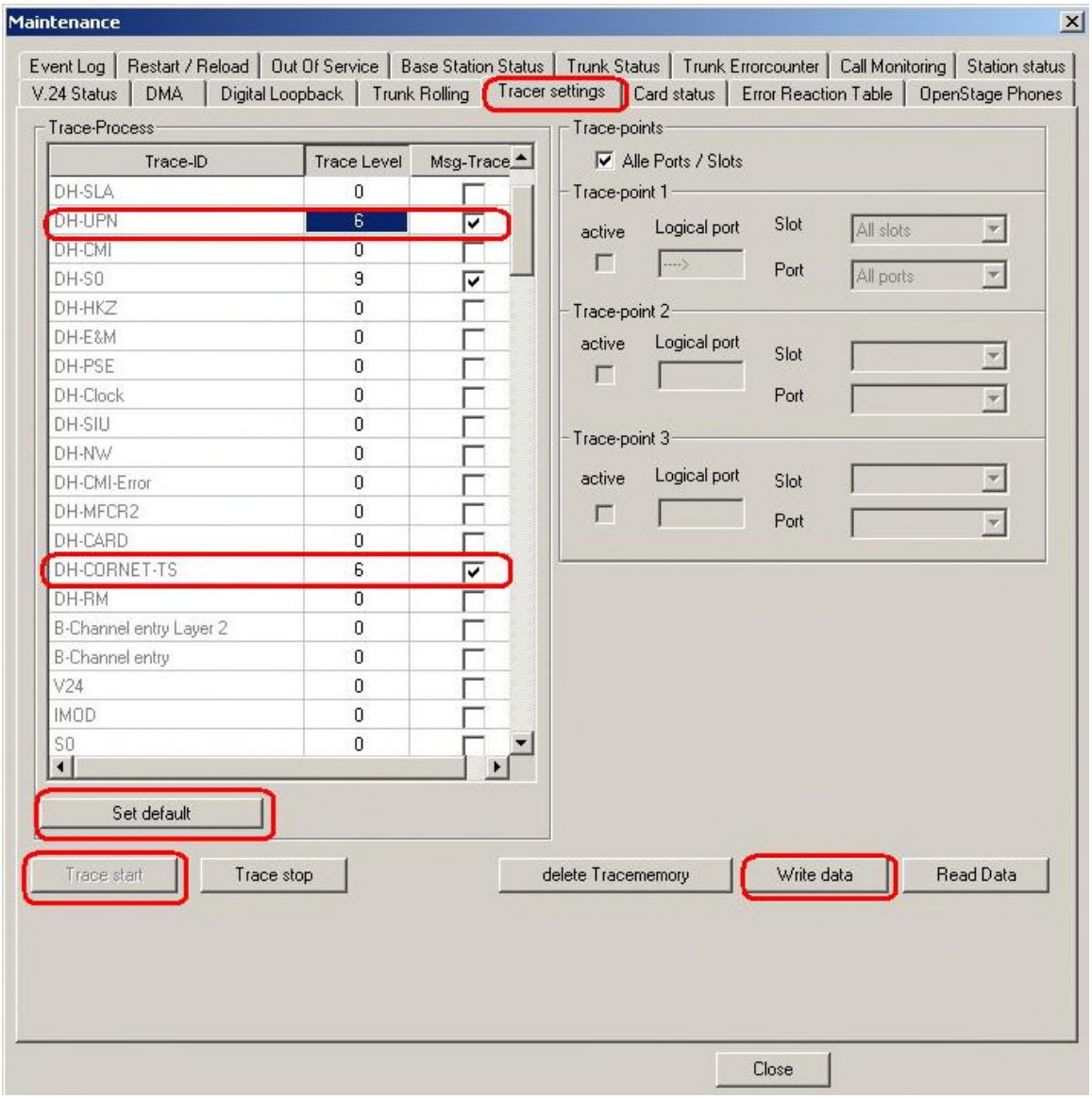
This describes how you can make a system trace for a phone issue. **It is useful to make the system trace at the same time with the phone trace. It is very important to deactivate the system trace after tracing!**

12.1 Activate system trace

- Log-in to the Manager as User group: **Development**
- Open **Transfer**
- Select checkbox **Maintenance**
- Press **Maintenance**



- Open tab **Tracer settings**
- Press **Set Default**
- For OpenStage 10/15/20/30, optiset and optiPoint
  Activate checkbox and set Trace level to 9 at **DH-UPN** and **Display**
- For OpenStage 40/60/80
  Activate checkbox and set Trace level to 9 at **DH-UPN** and **DH-CORENET-TS**
- Press **Write data**
- Press **Trace start**

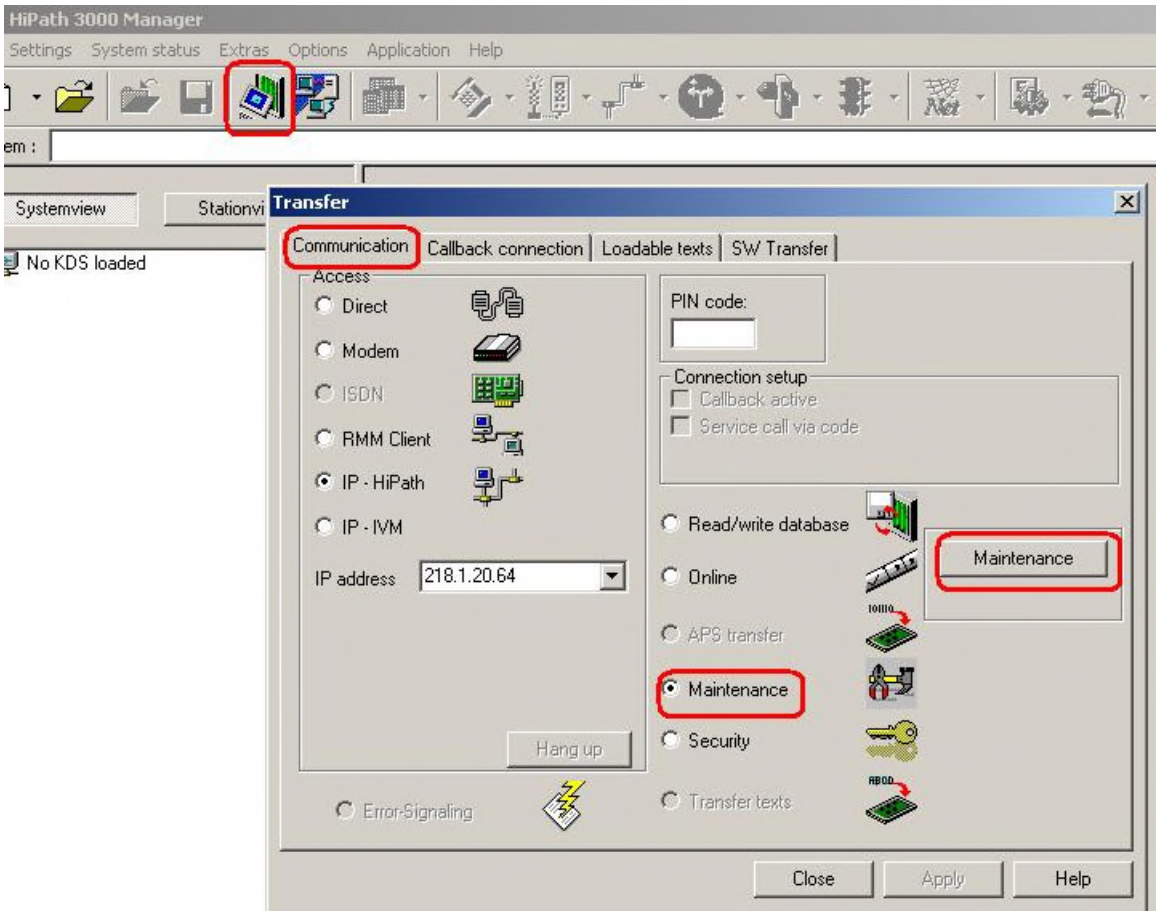


12.2 Make the trace and stop trace

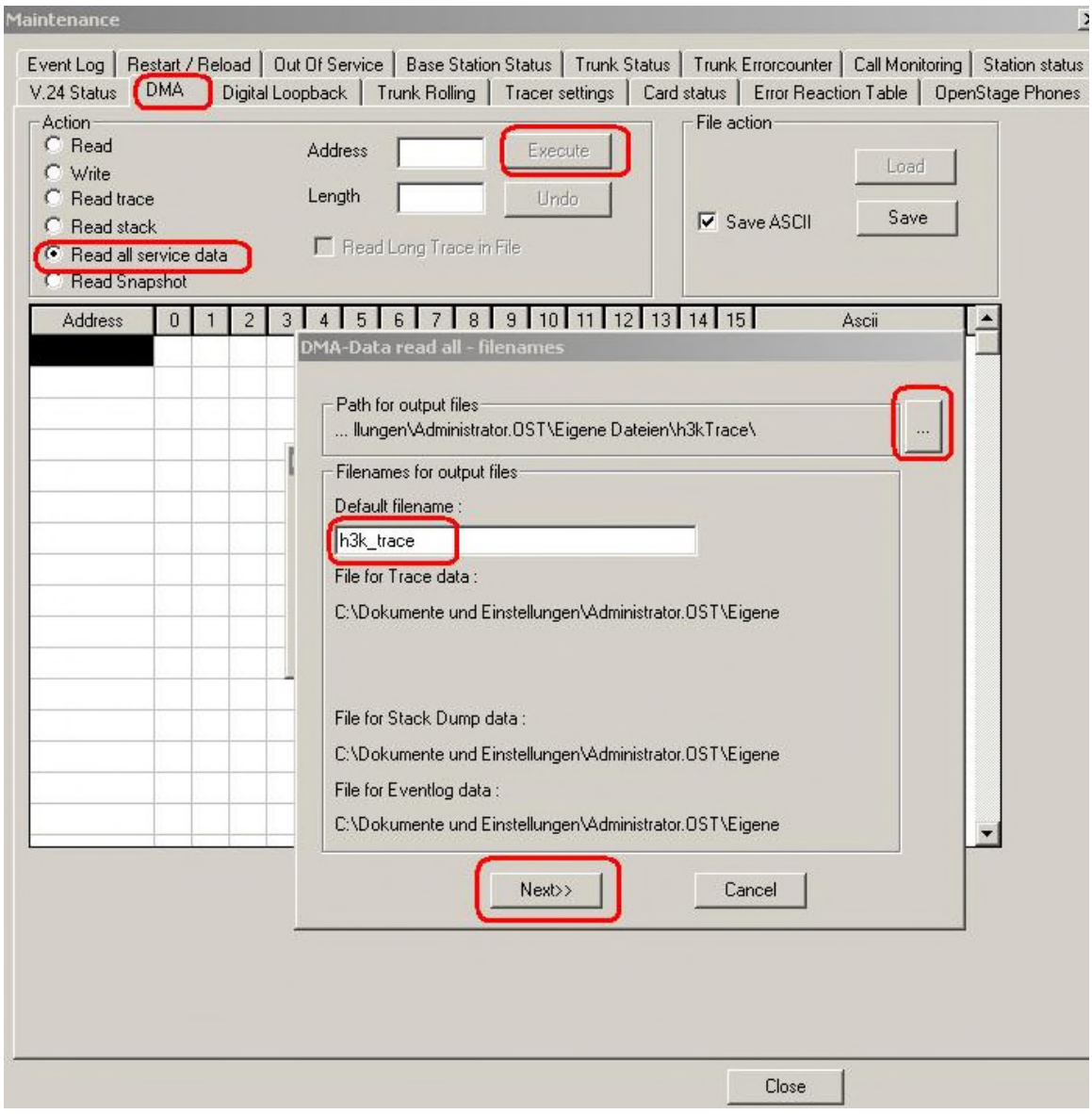
Now Reproduce the scenario. **If the problem is reproduced, do not make any further user inputs at the phone because that would overwrite the traced problem. Stop the trace in the mask of 12.1 by pressing Trace stop.**

12.3 Download system trace

- Log-in to the Manager as User group: **Development**
- Open **Transfer**
- Select checkbox **Maintenance**
- Press **Maintenance**

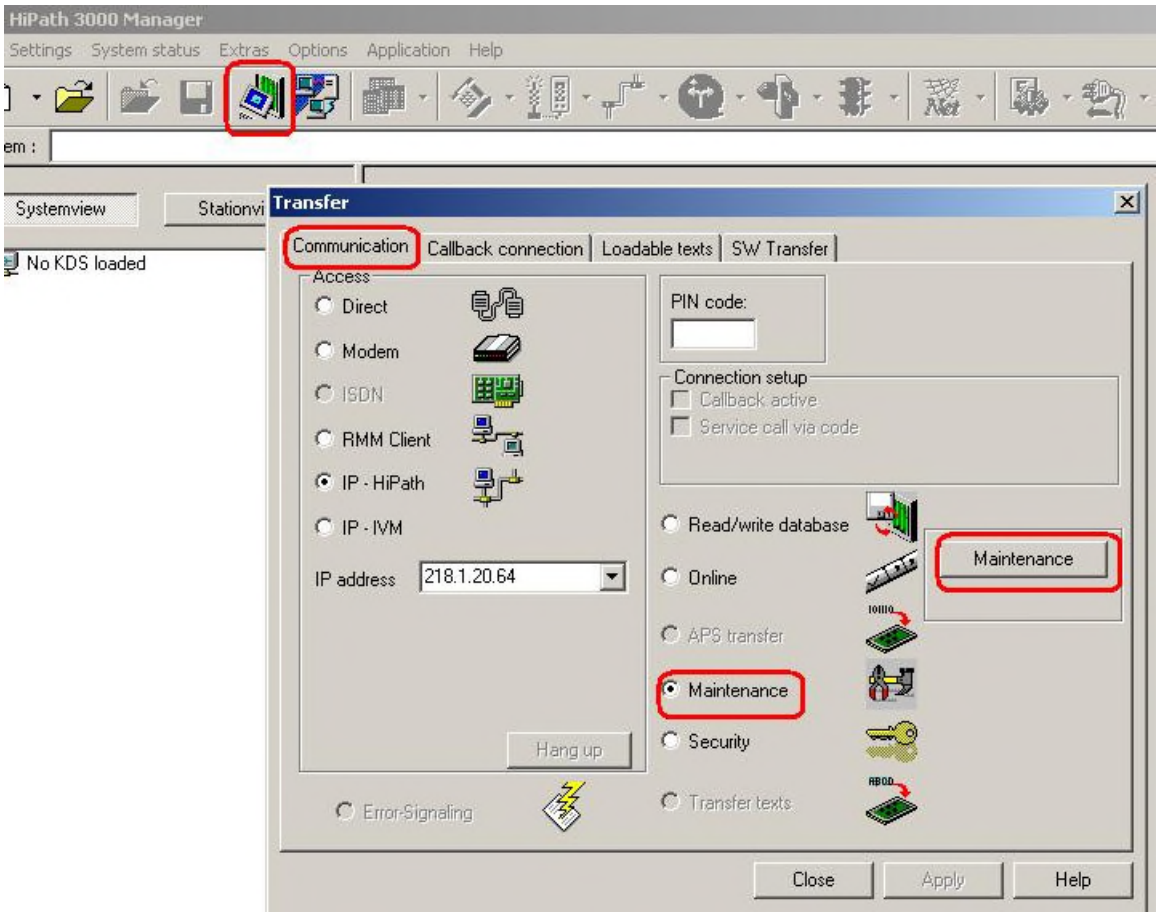


- Open tab **DMA**
- Select checkbox **Read all service data**
- Press **Execute**
- Chose output path
- Enter trace file name
- Press **Next**

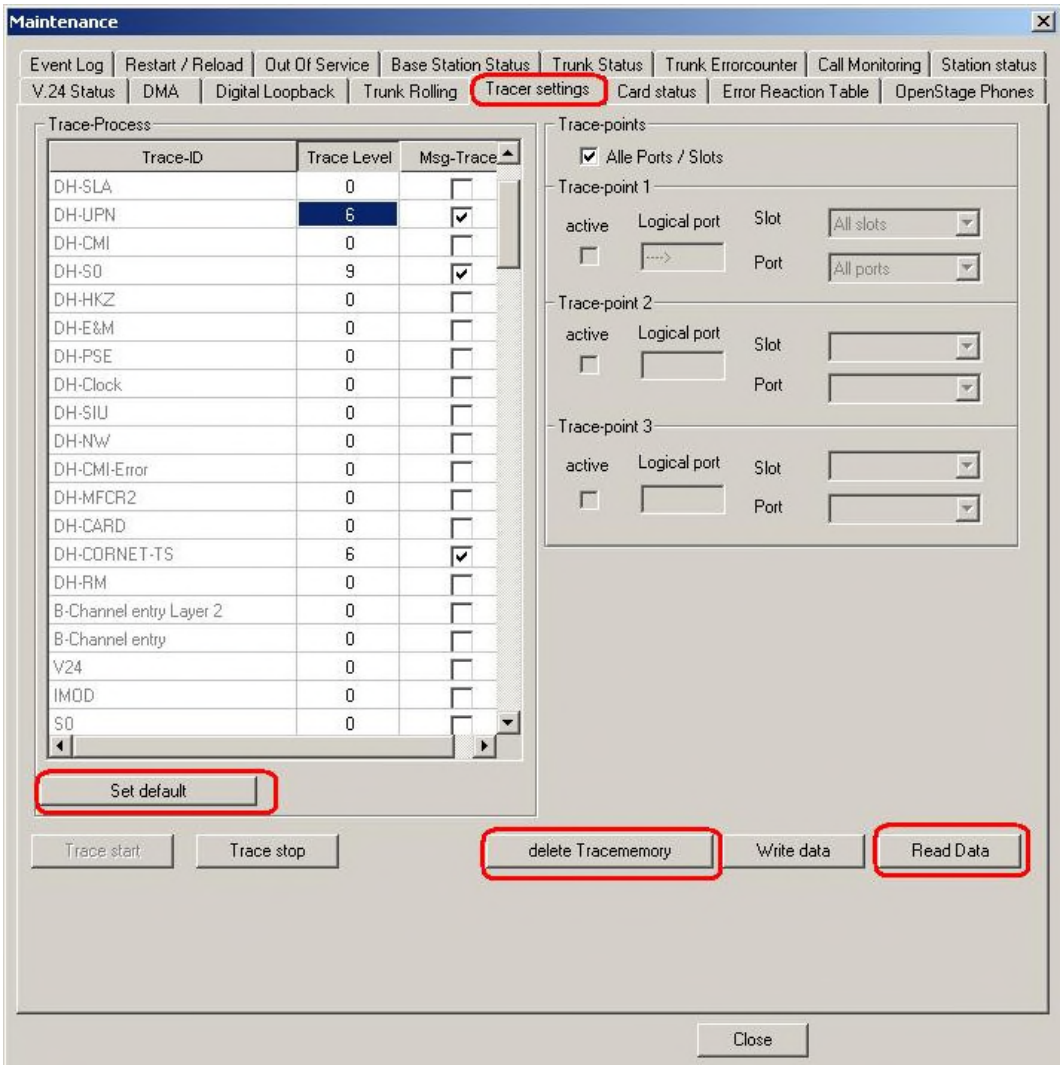


12.4 Deactivate system trace

- Log-in to the Manager as User group: **Development**
- Open **Transfer**
- Select checkbox **Maintenance**
- Press **Maintenance**



- Open tab **Tracer settings**
- Press **read Data**
- Press **Set default**
- Press **delete Tracememory**
- Press **Write data**



13 OpenScape Business: System Trace regarding phone issues

This describes how you can make a system trace for a phone issue. **It is useful to make the system trace at the same time with the phone trace.** **It is very important to deactivate the system trace after tracing!**

13.1 Activate system trace

Use OpenScape Business Assistant (WBM-Interface)

Via **Service Center -> Diagnostics -> Trace**
or **Expert mode -> Maintenance -> Traces -> Trace-Profiles**

set profiles (if not just set)

Basic
Voice_Fax_connection
Calls_with_System_device_Upn

For **OpenStage 10/15/20/30 and optiPoint**
via **Expert mode -> Maintenance -> Traces -> Trace Components**
set component (if not just set)

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(Please notice the status of the listed profile / component before changing them to be able to set back to the previous active profiles / component after tracing is finished)

13.2 Make the trace and stop trace

Now Reproduce the scenario. **If the problem is reproduced, do not make any further user inputs at the phone because that would overwrite the traced problem.**

13.3 Download system trace

Use OpenScape Business Assistant (WBM-Interface)

Via **Expert mode -> Maintenance -> Traces -> Trace Log**

To limit the data to that from the event, use

“Own Selection” and the necessary time range.

Deliver the complete trace file.

13.4 Deactivate system trace

Use OpenScape Business Assistant (WBM-Interface)

Via **Service Center -> Diagnostics -> Trace**
or **Expert mode -> Maintenance -> Traces -> Trace-Profiles**

Set back profiles / component to the status before changes from 13.1.

Basic
Voice_Fax_connection
Calls_with_System_device_Upn

For **OpenStage 10/15/20/30 and optiPoint**
via **Expert mode -> Maintenance -> Traces -> Trace Components**

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14 OptiMon Up0 Trace

This kind of trace is only needed by order of GVS or development! With OptiMon you can trace directly on an Up0-line. You need the special OptiMonBox hardware and the OptiMon program. If it is not available in the region, it will be delivered from the Client & Devices GVS together with an instruction.