

Documentation

OpenScape Voice, Sylantrö, Broadsoft

optiPoint 410/420 advance S V7.0

optiPoint 410/420 economy/standard S V7.0

optiPoint 410 entry S V7.0

Trace Guide



Communication for the open minded

Siemens Enterprise Communications
www.siemens-enterprise.com

SIEMENS

Safety Precautions

Important Notes



Do not operate the telephone in environments where there is a danger of explosions.



Use only original Siemens accessories. Using other accessories may be dangerous, and will invalidate the warranty and the CE mark.



Never open the telephone or a key module. If you encounter any problems, contact System Support.



Attention

If the optiPoint 410/420 S V6.0 is supplied with power over the LAN interface → page 42, the power source must be a limited power source PowerHub compliant with IEC 60950.

- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
- This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.
- The IP telephone optiPoint 410/420 S V6.0 complies with the European standard EN 60 950.
- The earpiece in this telephone handset contains a magnet. To prevent injury, before each use ensure objects such as pins or staples are not stuck to the earpiece.
- There is always the danger of small objects being swallowed by young children. In the case of the optiPoint 410/420 S V6.0, this applies in particular to the connecting cord clip. Please make sure that such items are not accessible to children.
- Never allow the telephone to come into contact with staining or corrosive liquids, such as coffee, tea, juice or soft drinks.

The information provided in this document contains merely general descriptions or characteristics of performance features which in case of actual use do not always apply as described or which may change as a result of further development of the products.

An obligation to provide the respective performance features only exists if expressly agreed in the terms of contract.



Note! (for U.S.A and Canada only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This product is a UL Listed Accessory, I.T.E., in U.S.A. and Canada.

Location of the Telephone

- The telephone should be operated in a controlled environment with an ambient temperature between 5 °C and 40 °C (41 °F and 104 °F).
- To ensure good handsfree talking quality, the area in front of the microphone (front right) should be kept clear. The optimum handsfree distance is 20 inches (50cm).
- Do not install the telephone in a room where large quantities of dust accumulate; this can considerably reduce the service life of the telephone.
- Do not expose the telephone to direct sunlight or any other source of heat, as this is liable to damage the electronic equipment and the plastic casing.
- Do not operate the telephone in damp environments such as bathrooms.

Telephone Maintenance

- Always use a damp or antistatic cloth to clean the telephone. Never use a dry cloth.
- If the telephone is very dirty, clean it with a diluted neutral cleaner containing some form of surfactant, such as a dish detergent. Afterwards, remove all traces of the cleaner with a damp cloth (using water only).
- Never use cleaners containing alcohol, cleaners that corrode plastic, or abrasive powders.

Labels



The device conforms to the EU guideline 1999/5/EG, as attested by the CE mark.



This device has been manufactured in accordance with our certified environmental management system (ISO 14001). This process ensures that energy consumption and the use of primary raw materials are kept to a minimum, thus reducing waste production.



All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.

The correct disposal and separate collection of your old appliance will help prevent potential negative consequences for the environment and human health. It is a precondition for reuse and recycling of used electrical and electronic equipment.

For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service, the shop where you purchased the product or your sales representative.

The statements quoted above are only fully valid for equipment which is installed and sold in the countries of the European Union and is covered by the directive 2002/96/EC. Countries outside the European Union may have other regulations regarding the disposal of electrical and electronic equipment.

Contents

Safety Precautions2

HowTo handle internal phone traces on optiPoint 410/420 S7

Reason for this HowTo	7
Pre-Conditions	7
Activate internal phone traces	8
Read out the internal phone traces	9
Deactivate internal phone traces	11

optiPoint SIP UDP Trace.....12

Activate the UDP Trace	12
Enable the SIP UDP Trace	12

Web Interface.....14

Establishing the Connection to the Phone	14
Access to the Web Interface Administrator Menu	15
Administrations Menu	16
Additional Web Pages for Tests and Tracing	17
Non user-assisted tests	17
User-assisted tests	18
RTP Statistics	19
QoS Data Collection	20
Fault Investigation	22
Trace Configuration	23
Trace View	24
Simplified trace page	24
FTP Client	25
Exception Data	25
Windview Configuration	26
SIP UDP Trace	26

Alphabetical Reference27

Description of Functions 27

- Audio loop test..... 27
- Display test 27
- Key test 28
- LED test..... 28
- Line monitor..... 28
- Ping 29
- QDC Address 29
- QDC Port 30
- RAM test 30
- ROM test..... 30
- Trace Easy Automatic Clear Before Start..... 31
- Trace Easy Empty log 31
- Trace Easy File Size 31
- Trace Easy Refresh 31
- Trace Easy Reset Settings..... 32
- Trace Easy Stop logging 32
- Trace Easy Submit/Start logging 32
- Trace Easy Trace Setting Template..... 32
- Trace Easy Timeout 32
- Trace FTP Client Download 33
- Trace FTP Client Upload 33
- Trace Level 33
- Trace Output 34
- Trace Streamsl..... 35
- Trace Timeout 37
- Trace View Source..... 38
- Trace View File Stream 38
- Trace Windview Configuration Logging Level 39
- Trace Windview Configuration Reset 39

Abbreviations and Specialized Terms 40

Index.....45

HowTo handle internal phone traces on optiPoint 410/420 S

Trace Configuration is used to inform the phone of which information is to be logged.

The "Trace output" drop down box is used to tell the phone whether to store the information to the File associated with the application stream or log the information to the generic memory buffer.

Both tracing to memory and tracing to file behave as circular buffers. The difference between 'trace output memory' and 'trace output file' is that tracing to memory logs trace records to a circular memory buffer which will be lost on a power on reset, while trace to file saves records to various files on flash. The reason for having both methods is that in the case of general functional faults, tracing to memory is the preferred option as this will have a lower impact on phone performance (this is because writing to flash is relatively slow and flash has a limited number of write cycles) while tracing to flash should only be used when investigating problems that require trace data to be retained over phone resets. All trace data should be accessible via the Web interface and thus should not require an FTP server for access.

1. Reason for this HowTo
2. Pre-Conditions
3. Activate internal phone traces
4. Read out the internal phone traces
5. Deactivate internal phone traces

Reason for this HowTo

Sometimes development is not able to pinpoint a problem with network traces only. It could happen that the message flow is correct but the phone behavior is not as it should be. For those cases the phones are able to trace internal processes that show the development what is going wrong. The steps for activating / reading out / deactivating those traces are mostly the same. With this HowTo in hands the requester must only define which traces he needs.

Pre-Conditions

Ensure that the phone is configured with a working SNTP server to have the correct time available in the traces.

- If no SNTP server is available, ensure that the correct time is configured manually.

If it is asked to deliver the internal phone traces in combination with some other traces (e.g. Wireshark) it is necessary that the trace-pc has configured the same SNTP server as the phone

- If no SNTP server is available, ensure that you've configured the same time on all tracing devices.

Activate internal phone traces

- Log-in to the WBM as administrator (see → page 15)
- Select the Fault Investigation menu (see → page 22)
- Select Trace Configuration (see → page 23)

Tracing

Trace Output: Memory None Memory **File** Memory and File to trace:

Timeout (minutes):

Automatic clear before start:

- Choose File as Trace Output.
- Set the timeout to 9999 minutes (max).
- Activate the checkbox for “Automatic clear before start.”

Trace logging is stopped

Application streams to trace:

Stream	File Size (Bytes)	Trace Level
Errors	80000	Enabled
High Level	1024	None
Black Box External	1024	None
Black Box Internal	1024	None
Monitor	1024	None
Service Agent	1024	None
CTI Server	1024	None
Resource Sharing	1024	None
Home App	1024	None
SIP UI	80000	All
SIP Database	1024	None
SIP Call Control	80000	All
SIP Signaling	80000	All
SIP Os Utils	1024	None
RTP	1024	None
System Framework	1024	None
WAP	1024	None
LDAP	1024	None
ENB	1024	None
Config Service	1024	None
Web Server	1024	None
SIP FTP	1024	None
Mobility	1024	None

Severe Error Reporting:

Send SNMP traps for severe errors

IP Address:

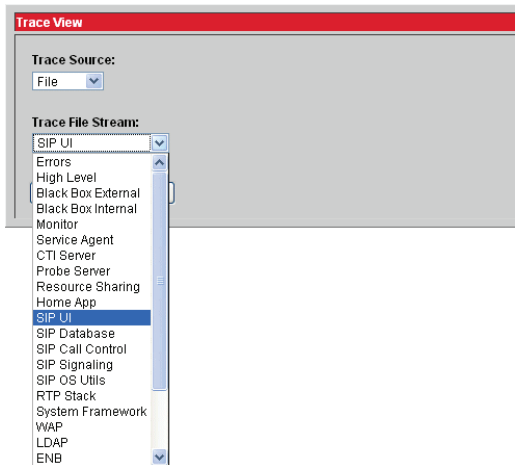
- Choose/set the parameter as seen on the picture above if nothing else has been requested.
- Click on the Submit button.

Trace logging is now activated and all relevant activities of the phone will be saved (till the trace file is full – oldest messages will be overwritten).

Read out the internal phone traces

It is recommended to wait ~3 minutes before you read out the phone internal traces. This will ensure that all log messages are written to the file and no messages are lost.

- Log-in to the WBM as administrator (see → page 15)
- Select the Fault Investigation menu (see → page 22)
- Select Trace View (see → page 24)



- Select File as Trace Source.
- Choose one of the activated traces (usually Error, SIP UI, SIP Call Control and SIP Signalling).
- Click on Submit.

The selected stream is now displayed in your browser.

HowTo handle internal phone traces on optiPoint 410/420 S

Log file

This page displays the trace log according to the details in the [Logging page](#).

Logging to File, displaying SIP UI, remaining time for logging: 9981 minute(s).

01425

Phone type: optiPoint 420 advance S

Application version: V7 R2.2.0

MAC address: 08:00:06:2a:51:ac

IP address: 192.168.1.242

Terminal no.: 3800

Time zone: 1

```
0.7610,18-Aug-2008,10:45:40,1004814,1SII
0.7636,18-Aug-2008,10:45:59,1005824,1SII
0.7637,18-Aug-2008,10:45:59,1005824,1SII
0.7638,18-Aug-2008,10:45:59,1005824,1SII
0.7639,18-Aug-2008,10:45:59,1005824,1SII
0.7640,18-Aug-2008,10:45:59,1005824,1SII
0.7666,18-Aug-2008,10:46:09,1006834,1SII
0.7667,18-Aug-2008,10:46:09,1006834,1SII
0.7668,18-Aug-2008,10:46:09,1006834,1SII
0.7669,18-Aug-2008,10:46:09,1006834,1SII
0.7670,18-Aug-2008,10:46:17,1007644,1SII
0.7696,18-Aug-2008,10:46:17,1007644,1SII
0.7697,18-Aug-2008,10:46:17,1007644,1SII
0.7698,18-Aug-2008,10:46:17,1007644,1SII
0.7699,18-Aug-2008,10:46:17,1007644,1SII
0.7700,18-Aug-2008,10:46:17,1007644,1SII
0.7726,18-Aug-2008,10:46:27,1008661,1SII
0.7727,18-Aug-2008,10:46:27,1008661,1SII
0.7728,18-Aug-2008,10:46:27,1008661,1SII
0.7729,18-Aug-2008,10:46:27,1008661,1SII
0.7730,18-Aug-2008,10:46:27,1008661,1SII
0.7755,18-Aug-2008,10:46:35,1009474,1SII
0.7756,18-Aug-2008,10:46:35,1009474,1SII
0.7757,18-Aug-2008,10:46:35,1009474,1SII
0.7758,18-Aug-2008,10:46:35,1009474,1SII
0.7759,18-Aug-2008,10:46:35,1009474,1SII
0.7760,18-Aug-2008,10:46:35,1009474,1SII
0.7786,18-Aug-2008,10:46:45,1010484,1SII
0.7787,18-Aug-2008,10:46:45,1010484,1SII
0.7788,18-Aug-2008,10:46:45,1010484,1SII
0.7789,18-Aug-2008,10:46:45,1010484,1SII
0.7790,18-Aug-2008,10:46:45,1010484,1SII
0.7816,18-Aug-2008,10:46:51,1011094,1SII
0.7817,18-Aug-2008,10:46:51,1011094,1SII
0.7818,18-Aug-2008,10:46:51,1011094,1SII
```

Unbenannt - Editor

Datei Bearbeiten Format Ansicht ?

Logging to File, displaying SIP UI, remaining time for logging: 9981 minute(s).

Phone type: optiPoint 420 advance S

Application version: V7 R2.2.0

MAC address: 08:00:06:2a:51:ac

IP address: 192.168.1.242

Terminal no.: 3800

Time zone: 1

0.7610,18-Aug-2008,10:45:40,1004814,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7636,18-Aug-2008,10:45:59,1005824,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7637,18-Aug-2008,10:45:59,1005824,1SII,stackeys,c,10,1,0,0 skStarMonitoring: Subscription Failed - Retring

0.7638,18-Aug-2008,10:45:59,1005824,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7639,18-Aug-2008,10:45:59,1005824,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7640,18-Aug-2008,10:45:59,1005824,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7666,18-Aug-2008,10:46:09,1006834,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7667,18-Aug-2008,10:46:09,1006834,1SII,stackeys,c,10,1,0,0 skStarMonitoring: Subscription Failed - Retring

0.7668,18-Aug-2008,10:46:09,1006834,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7669,18-Aug-2008,10:46:09,1006834,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7670,18-Aug-2008,10:46:17,1007644,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7696,18-Aug-2008,10:46:17,1007644,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7697,18-Aug-2008,10:46:17,1007644,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7698,18-Aug-2008,10:46:17,1007644,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7699,18-Aug-2008,10:46:17,1007644,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7700,18-Aug-2008,10:46:17,1007644,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7726,18-Aug-2008,10:46:27,1008661,1SII,stackeys,c,10,1,0,0 skStarMonitoring: Subscription Failed - Retring

0.7727,18-Aug-2008,10:46:27,1008661,1SII,stackeys,c,10,1,0,0 skStarMonitoring: Subscription Failed - Retring

0.7728,18-Aug-2008,10:46:27,1008661,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7729,18-Aug-2008,10:46:27,1008661,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7730,18-Aug-2008,10:46:27,1008661,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7755,18-Aug-2008,10:46:35,1009474,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7756,18-Aug-2008,10:46:35,1009474,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7757,18-Aug-2008,10:46:35,1009474,1SII,stackeys,c,10,1,0,0 skStarMonitoring: Subscription Failed - Retring

0.7758,18-Aug-2008,10:46:35,1009474,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7759,18-Aug-2008,10:46:35,1009474,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7760,18-Aug-2008,10:46:35,1009474,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7786,18-Aug-2008,10:46:45,1010484,1SII,stackeys,c,10,1,0,0 skStarMonitoring: HDLogToggle

0.7787,18-Aug-2008,10:46:45,1010484,1SII,stackeys,c,10,1,0,0 skStarMonitoring: Subscription Failed - Retring

0.7788,18-Aug-2008,10:46:45,1010484,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7789,18-Aug-2008,10:46:45,1010484,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7790,18-Aug-2008,10:46:45,1010484,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7816,18-Aug-2008,10:46:51,1011094,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7817,18-Aug-2008,10:46:51,1011094,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7818,18-Aug-2008,10:46:51,1011094,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7846,18-Aug-2008,10:46:56,1011504,1SII,stackeys,c,10,1,0,0 skStarMonitoring: HDLogToggle

0.7847,18-Aug-2008,10:46:56,1011504,1SII,stackeys,c,10,1,0,0 skStarMonitoring: Subscription Failed - Retring

0.7848,18-Aug-2008,10:46:56,1011504,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7849,18-Aug-2008,10:46:56,1011504,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7850,18-Aug-2008,10:46:56,1011504,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7876,18-Aug-2008,10:47:03,1012214,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7877,18-Aug-2008,10:47:03,1012214,1SII,stackeys,c,10,1,0,0 skStarMonitoring: Subscription Failed - Retring

0.7878,18-Aug-2008,10:47:03,1012214,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7879,18-Aug-2008,10:47:03,1012214,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7880,18-Aug-2008,10:47:03,1012214,1SII,stackeys,c,10,2,0,0 skStarMonitoring: Subscription Failed - Retring

0.7906,18-Aug-2008,10:47:05,1012424,1SII,stackeys,c,10,2,0,0 skStarMonitoring: HDLogToggle

0.7907,18-Aug-2008,10:47:05,1012424,1SII,stackeys,c,10,1,0,0 skStarMonitoring: Subscription Failed - Retring

[Return to Administration](#) [Maintenance](#)

- Copy all content between the grey Buttons into a text-file.
- Save it to your computer, using a clear name (e.g. for each stream a separate file: Error.txt; SIP UI.txt ...)

Repeat the steps above till you have copied all traces to separate files.

Deactivate internal phone traces

- Log-in to the WBM as administrator (see → page 15)
- Select the Fault Investigation menu (see → page 22)
- Select Trace View (see → page 24)



Just click on the Submit button (It doesn't matter which stream you select).
The selected stream is now displayed in your browser.

Log file

This page displays the trace log according to the details in the [Logging](#) page.

Logging to File, displaying Error, remaining time for logging: 9850 minute(s).

Push the Stop tracing button.

By clicking this button all activated traces will automatically be deactivated.
(The SIP UDP Trace is a separate trace and will not be deactivated.)

It is recommended to deactivate the traces after they have been saved to
disburden the phone as much as possible.

optiPoint SIP UDP Trace

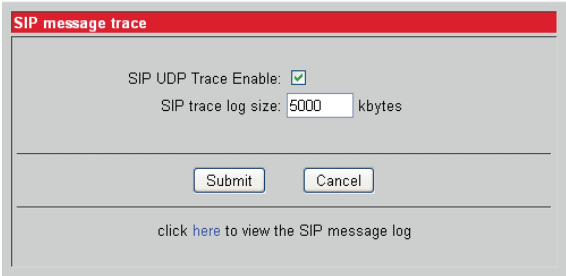
If problems in operating the optiPoint 410/420 S phones are encountered, showing a display message like "no server" or "Registering..." for a longer time, then these problems are likely to be related to the signalling with the SIP proxy or registrar. It is often helpful to capture the messages with a network hub and display these data with one of the well known tools to examine the problem in more detail.

If no hub is available or a PC trace tool cannot be used for some reason, the build in SIP UDP trace of the optiPoint can be used as well.

Activate the UDP Trace

- Log-in to the WBM as administrator (see → page 15)
- Select the Fault Investigation menu (see → page 22)
- Select SIP UDP Trace

Enable the SIP UDP Trace



The screenshot shows a web-based configuration window titled "SIP message trace". It contains the following elements:

- A red header bar with the text "SIP message trace".
- A label "SIP UDP Trace Enable:" followed by a checked checkbox .
- A label "SIP trace log size:" followed by a text input field containing "5000" and the unit "kbytes".
- A horizontal separator line.
- Two buttons: "Submit" and "Cancel".
- Another horizontal separator line.
- A link: "click [here](#) to view the SIP message log".

To enable SIP UDP tracing simply click the Trace enable box and set the log file to a suitable size, for example 5000K. Click the Submit button to active logging.

Once tracing is complete the SIP log can be viewed as indicated on the above screen shot by clicking on the word **here**.

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SIP Message Log

This page displays the contents of the SIP Message Log.

Click [here](#) to activate/deactivate SIP message logging

Empty SIP Log

```
: THU AUG 21 04:07:48 2008
Packet Out-->192.168.1.148
REGISTER sip:192.168.1.148:5060;transport=udp SIP/2.0
Via: SIP/2.0/UDP 192.168.1.253:5060;branch=z9hG4bK0c2327b5117ebb21e
Max-Forwards: 70
From: 1951 <sjp:1951@192.168.1.148:5060>;tag=1f3c76b4f3;epid=SC2566aa
To: 1951 <sjp:1951@192.168.1.148:5060>
Call-ID: 438e9582c22bf8f8
CSeq: 2366 REGISTER
Contact: 1951 <sjp:1951@192.168.1.253:5060;transport=udp>;expires=4320
User-Agent: optiPoint 410 Standard/V7 V7 R2.2.0
Content-Length: 0
```

```
: THU AUG 21 04:07:52 2008
Packet Out-->192.168.1.148
REGISTER sip:192.168.1.148:5060;transport=udp SIP/2.0
Via: SIP/2.0/UDP 192.168.1.253:5060;branch=z9hG4bK0c2327b5117ebb21e
Max-Forwards: 70
From: 1951 <sjp:1951@192.168.1.148:5060>;tag=1f3c76b4f3;epid=SC2566aa
To: 1951 <sjp:1951@192.168.1.148:5060>
Call-ID: 438e9582c22bf8f8
CSeq: 2366 REGISTER
Contact: 1951 <sjp:1951@192.168.1.253:5060;transport=udp>;expires=4320
User-Agent: optiPoint 410 Standard/V7 V7 R2.2.0
Content-Length: 0
```

The message log can be deleted afterwards.



Do not forget to de-activate the SIP UDP Trace when tracing is no longer required – tracing is consuming resources and performance.

Web Interface

Establishing the Connection to the Phone

You can display and configure device and network information for the optiPoint 410/420 /economy/economy plus/standard/advance S V7.0 and the optiPoint 410 entry S V7.0 through the Web Interface.

You can access the Web Interface using one of the following web browsers:

- Microsoft Internet Explorer (recent version recommended)

To access the Web Interface, perform the following steps.

Open a web browser and enter the URL of the web page for the phone as follows:

https://[address]

where [address] is the IP address or host name of the Phone.

You can access the web interface in the browser using the host name assigned to your telephone. The presetting for the host name is the current E164 number. An example for the browser call is:

https://hostname.domainname

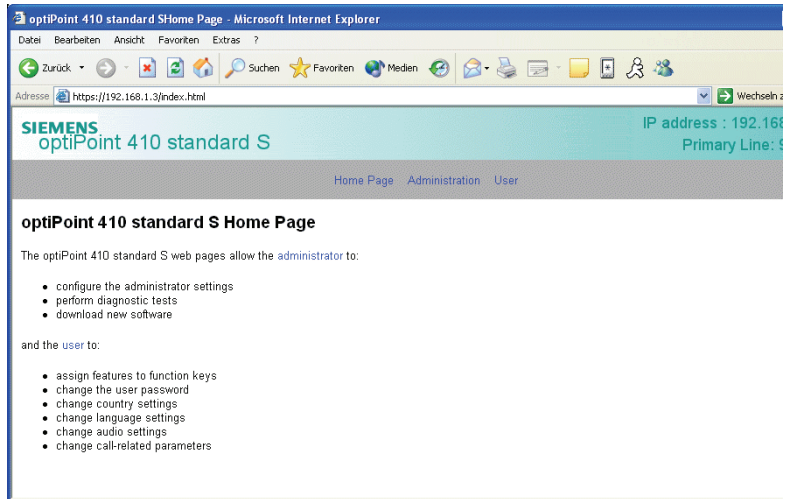
For example, the configuration page for the Phone with the IP address 192.168.1.137 is: "https://192.168.1.137".

If applicable, confirm the following advisory message with "Yes":



After entering the URL, the browser might display a certificate notification.

A screen like the following home page appears:



Click on the required field in the dialogs to see a description for each parameter.

Access to the Web Interface Administrator Menu

The following steps describe the access to the administrator menu, starting from the home page of the optiPoint 410/420.

1. Click on the link "Administration". The following login dialog appears:

Local administrator login

Password:

2. Enter the administrator password (default: "123456"; max length 24 digits) and confirm.

Administrations Menu

Administrator menu

- General Information
- Network IP and Routing
- System
 - SIP environment
 - SIP features
- Quality of service
- File transfer and phone download settings
- Time and date
- SNMP
- Speech
- Ringer settings
- LAN Port settings
- Multiline operation
- Function keys...
 - Phone
 - Key module 1
 - Key module 2
 - Key module SLK 1
 - Key module SLK 2
- Dial plan
- Dialing properties
- Feature Access
- User Mobility
- Configuration Management...
 - Settings
 - Check for updates
 - Error log
- Applications...
 - Directory
 - Address Book
 - WAP
- Upload/Download...
 - Upload configuration
 - Download application
 - Download configuration
 - Download hold music
- Diagnostics and statistics...
 - Non user-assisted tests
 - User-assisted tests
 - RTP Statistics
 - QoS Data Collection
 - **Fault investigation**
 - Simplified trace page
- Security
- Restart terminal
- Reset user password
- Change admin password
- Clear all user data
- Restore factory setting
- Port Control
- FPN Port Settings
- Survivability

[Home](#)

Fault Investigation

- Trace Configuration
- Trace View
- Simplified trace page
- FTP Client
- Exception Data
- Windview Configuration
- SIP UDP Trace



Additional Web Pages for Tests and Tracing

The web menus relevant for tests and tracing are listed below. If you click on one of the menu options, you will be directed to further explanations in the alphabetical reference.

Non user-assisted tests

Non User-Assisted Tests
Select which tests to invoke:
 Ping -- IP Address:
 ROM test
 RAM test

This page will be reloaded with the updated test results after the tests have been invoked.

Test results

	Last run at	Result
Ping:	19:41, 1 Jan 2004	passed (192.168.1.151, T=10ms)
RAM test:	19:41, 1 Jan 2004	passed
ROM test:	19:41, 1 Jan 2004	passed

User-assisted tests

optiPoint 410/420 standard/advance

User-Assisted Tests

The diagnostic tests on this page require a local user to confirm the outcome at the terminal.

Note that once a particular test has been started, the local user will assume full control of the test (using the keypad) until the test is terminated.

Run the required tests:

Display test:

LED test:

Key test:

Audio loop test:

Line monitor:

Self Labelling Keys test::

optiPoint 410/420 economy/economy plus and optiPoint 410 entry

User-Assisted Tests

The diagnostic tests on this page require a local user to confirm the outcome at the terminal.

Note that once a particular test has been started, the local user will assume full control of the test (using the keypad) until the test is terminated.

Run the required tests:

Display test:

LED test:

Key test:

Audio loop test:

Line monitor:

Not used with
optiPoint 410 entry



RTP Statistics

These parameters are used for development only.

RTP Statistics

Address-of-record:

From:

To:

Call Id:

Request URI:

Transport addr - local:

Transport addr - remote:

Session begin:

Session end:

Codec:

Frame size:

Jitter:

Av. round trip delay:

Packets received:

Packets lost:

Packets discarded due to:

out-of-sequence/delay:

buffer overrun:

other:

<< < records > >>

QoS Data Collection

These parameters are used for development only.

QoS Data Collection

Send QoS Reports to QCU:

QCU home address:

QCU port number:

Report mode:

Report interval: seconds

Observation interval: seconds

Minimal session length: * 100 milliseconds

Codec Independent Threshold Values

Max jitter threshold: milliseconds

Avg round trip delay threshold: milliseconds

Non-compressing Codec Threshold Values

Lost packet thresholds: per 1000 packets

Consecutive lost packets:

Consecutive good packets:

Compressing Codec Threshold Values


Lost packet thresholds: per 1000 packets

Consecutive lost packets:

Consecutive good packets:

Session data: [Click here](#)

Session data

 → page 20

Select a report to view:

Session data
Start of report period:
End of report period:
IP address (local):
Port number (local)::
IP address (remote):
Port number (remote):
SSRC (receiving):
SSRC (sending):
Codec:
Maximum packet size:
Silence suppression:
Count of good packets:
Maximum jitter:
Maximum inter-arrival jitter:
Periods jitter threshold exceeded:
Round trip delay:
Round trip delay threshold exceeded:
Count of lost packets:
Count of discarded packets:
Periods of lost packets:
Consecutive Packet Loss (CPL):
Periods of consecutive lost packets:
Consecutive good packets (CGP):
Periods of consecutive good packets:
Count of Jitter buffer overruns :
Count of Jitter buffer under-runs :
Codec Change on the fly:
Periods with at least one threshold exceeded:
HiPath Switch ID:
LTU Number:
Slot Number:
Endpoint Type :
Version:
Subscriber Number Type:
Subscriber Number:
Call ID:
MAC Address:

Fault Investigation

Available tracing menus (selected in “Administrations Menu” on page 16):

- “Trace Configuration” on page 23
- “Trace View” on page 24
- “Simplified trace page” on page 24
- “FTP Client” on page 25
- “Exception Data” on page 25
- “Windview Configuration” on page 26
- “SIP UDP Trace” on page 26

Trace Configuration

Trace Configuration is used to inform the phone of which information is to be logged.

Tracing

Trace Output:	Timeout (minutes):	Automatic clear before start:
Memory <input type="text"/>	15 <input type="text"/>	<input type="checkbox"/>

Trace logging is stopped

Application streams to trace:

Stream	File Size (Bytes)	Trace Level
Errors	4096 <input type="text"/>	Enabled
High Level	1024 <input type="text"/>	None <input type="text"/>
Black Box External	1024 <input type="text"/>	None <input type="text"/>
Black Box Internal	1024 <input type="text"/>	None <input type="text"/>
Monitor	1024 <input type="text"/>	None <input type="text"/>
Service Agent	1024 <input type="text"/>	None <input type="text"/>
CTI Server	1024 <input type="text"/>	None <input type="text"/>
Resource Sharing	1024 <input type="text"/>	None <input type="text"/>
Home App	1024 <input type="text"/>	None <input type="text"/>
SIP UI	1024 <input type="text"/>	None <input type="text"/>
SIP Database	1024 <input type="text"/>	None <input type="text"/>
SIP Call Control	1024 <input type="text"/>	None <input type="text"/>
SIP Signalling	1024 <input type="text"/>	None <input type="text"/>
SIP Os Utils	1024 <input type="text"/>	None <input type="text"/>
RTP	1024 <input type="text"/>	None <input type="text"/>
System Framework	1024 <input type="text"/>	None <input type="text"/>
WAP	1024 <input type="text"/>	None <input type="text"/>
LDAP	1024 <input type="text"/>	None <input type="text"/>
ENB	1024 <input type="text"/>	None <input type="text"/>
Config Service	1024 <input type="text"/>	None <input type="text"/>
Web Server	1024 <input type="text"/>	None <input type="text"/>
SIP FTP	1024 <input type="text"/>	None <input type="text"/>

Severe Error Reporting:

Send SNMP traps for severe errors
 IP Address: 0.0.0.0

Trace View

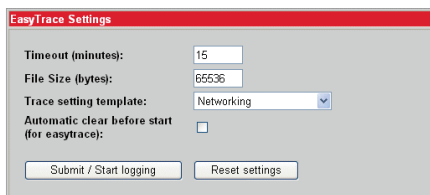
Trace View is used to retrieve trace information from the phone.



Simplified trace page

It is a simple interface for the user for an easy trace setup and data retrieval. This functionality is to be used as the usual standard procedure when investigating problems (first-time). It provides a simple access to trace information that can be used in a frequent number of support-cases.

The Easy Trace functionality gives the user the opportunity to collect multiple streams into a common log file.



Refresh Empty log Stop logging

Easy trace logging, remaining time: 15 minute(s)

320

Phone type: optPoint 420 advance S
Application version: 4.1.31
MAC address: 08:00:06:2a:51:ec
IP address: 192.168.1.153
Primary Line: 9954
Time zone: 0

Refresh Empty log Stop logging

FTP Client

To use the FTP client you will need the "Host", "username" and "password" of your FTP server account.

Where File details are required "Local File details" refers to files on the phone and "Remote File details" refers to files on the FTP server.

- The root directory of the phones file system is "/tffs0/".
- Trace log files are located in "/tffs0/tracing"
- The exception log file is located in "/tffs0/exceptions/" and is called "exc.txt".

If "Windview" logging has been enabled, the windview log if it exists can be found in "/tffs0/exceptions/" and is called "wdvlog.wvvr".

FTP Client

WARNING
Clicking on **Download** or **Upload** will cause a file transfer to take place over an insecure link.

Server details:

Host:

Username: Password:

Account:

Remote file details: **Local file details:**

Path: Path:

Filename: Filename:

Transfer type: ▼

Exception Data

It is possible to get the reason for a phone reset by use of this WEB page. Click on submit. You will then be presented with a page of exception data. This information can be used to discover the cause of the reset.

Exceptions

Display Exception Data:

Windview Configuration

Windview Configuration

Logging Level:

NONE

SIP UDP Trace

SIP message trace




SIP UDP Trace Enable:

SIP trace log size: kbytes

click [here](#) to view the SIP message log

Alphabetical Reference


This reference offers basic information that can be used by the administrator to carry out administration- and diagnostics-related jobs in the optiPoint 410/420 family S V7.0.

- The Chapter explains alphabetically sorted terms that, for instance, you will encounter in the menus.
Used symbols:
 -  Shows administration tasks with menu paths at the optiPoint 410/420 family S V7.0 and on the Web Interface.
 -  Shows the related Web Interface surfaces.
 -  Refers to the User Manual if required.
- This is followed by the Chapter “Abbreviations and Specialized Terms”.




Description of Functions


Audio loop test

- The test activates the microphone and the loudspeaker in the handset.
- You can check these components by speaking and listening.

 → page 18

Display test

- Conduct this test to check the function of the → LCD display in the Display telephone.
- Different display contents are displayed with the  and  keys. The  key terminates the test.

 → page 18


Key test

- Test to check the functions of the telephone keys.
- If you press a key on the optiPoint 410/420 family S V7.0 (except the key), the associated LED lights up and the corresponding name is displayed in the → LCD display. The key terminates the test.

 → page 18

LED test

- Run this test to check the function of the → LEDs at the optiPoint 410/420 family S V7.0.
- During the test all LEDs are flashing. The key terminates the test.

 → page 18

Line monitor

- Activate the display to view the functions and values used to run the → LAN connections at the phone.
- The status monitor remains active even during the normal operation of the optiPoint 410/420 family S V7.0. However, it does not affect the operation of the function keys.

Line Monitor information optiPoint 410

LAN Port 1 (LAN)

10 Mb/s Full duplex	LED:	9, 11
10 Mb/s Half duplex	LED:	9
100 Mb/s Full duplex	LED:	9, 10, 11
100 Mb/s Half duplex	LED:	9, 10

LAN Port 2 (PC)

10 Mb/s Full duplex	LED:	5, 7
10 Mb/s Half duplex	LED:	5
100 Mb/s Full duplex	LED:	5, 6, 7
100 Mb/s Half duplex	LED:	5, 6

Explanation report:

LED 9 or 5 'on'	Connection established
LED 9 or 5 'off'	Connection not established
LED 6 or 10 'on'	100 Mb/s connection
LED 6 or 10 'off'	10 Mb/s connection
LED 7 or 11 'on'	Full duplex connection
LED 7 or 11 'off'	Half duplex connection

Line Monitor information optiPoint 420

LAN Port 1 (LAN)


10 Mb/s Full duplex	LED:	10, 12
10 Mb/s Half duplex	LED:	10
100 Mb/s Full duplex	LED:	10, 11, 12
100 Mb/s Half duplex	LED:	10, 11

LAN Port 2 (PC)

10 Mb/s Full duplex	LED:	6, 8
10 Mb/s Half duplex	LED:	6
100 Mb/s Full duplex	LED:	6, 7, 8
100 Mb/s Half duplex	LED:	6, 7

Explanation report:


LED 10 or 6 'on'	Connection established
LED 10 or 6 'off'	Connection not established
LED 7 or 11 'on'	100 Mb/s connection
LED 7 or 11 'off'	10 Mb/s connection
LED 8 or 12 'on'	Full duplex connection
LED 8 or 12 'off'	Half duplex connection

 → page 18

Ping


- Run this → PING test to check whether a server or another terminal device (e.g. the optiPoint 410/420 family S V7.0 or servers) can be reached by → IP or domain name.
- For this, enter or select an → IP address or domain name as a test target (the connection to which you wish to test).
- Value range table (for user specified IP):

Permitted values	numeric (with DNS also alphanumeric)
Length max.	15 digits (incl. dots) (with DNS also 92 digits)

 → page 17


QDC Address

Enter IP address of the Quality Data Collection Server. For more information refer to HiPath QoS Data Collection V1.0 Interface Description.

 → page 20


QDC Port

Enter port address of the Quality Data Collection Server. For more information refer to HiPath QoS Data Collection V1.0 Interface Description.

 → page 20


RAM test

- Use this function to test the → RAM memory of your optiPoint 410/420 family S V7.0.
- The results are displayed after the test.

 → page 17


ROM test

- Use this function to test the → ROM memory of your optiPoint 410/420 family S V7.0.
- The results are displayed after the test.

 → page 17


Trace Easy Automatic Clear Before Start

When it is clicked in, the loggings are cleared every start, when it is not clicked you can see the pervious loggings. The use of this checkbox is independent from the full trace functionality. It means that only the ea-sytrace log file is emptied, but not the streams for the full trace functionality.

 → page 24


Trace Easy Empty log

Removes any stored logging data(only the status line and the header remain displayed)

 → page 24


Trace Easy File Size

The file size should be between 4096 and 524288 (bytes).

 → page 24


Trace Easy Refresh

Retrieves and displays any new logging data.

 → page 24


Trace Easy Reset Settings

Set parameters to default values.

 → page 24

Trace Easy Stop logging

Stops the current logging action.


 → page 24

Trace Easy Submit/Start logging

Store the new parameter values in the database and start the trace. All the parameter settings on this easy trace page are independent from the full trace settings.

Note: It is also important that at any given time only one kind of trace can be active. Either easy tracing or full tracing. It means that the starting of an easy tracing automatically blocks the active full tracing, and conversely, if the full tracing is started it stops the active easy tracing.

Only the parameters which are set on this easy trace page, have impact on the easy tracing, and only the parameters which are set on full trace page, have impact on full tracing.


 → page 24

Trace Easy Trace Setting Template

Predefined templates covering the most important trace-scenarios, each template is for one frequently used support case (trace-scenario) like:


- Audio
- IP Networking
- SIP signalling
- Application failure
- Maintenance.

Each template has the corresponding components with trace levels, which are inputs for the tracer.

 → page 24


Trace Easy Timeout

The time duration while the tracing should be active, the Timeout value should be between 1 and 9999 (minutes).

 → page 24


Trace FTP Client Download

To put files on to the phone fill in the "Host", "username" and "password" of your FTP server account. Fill in the "Remote File details" (This where you want the file to go on your FTP server). Fill in the "Local File details" (This is the file you want to retrieve from the phone).

 → page 25

Trace FTP Client Upload

To retrieve files from the phone fill in the "Host", "username" and "password" of your FTP server account. Fill in the "Remote File details" (This where you want the file to go on your FTP server). Fill in the "Local File details" (This is the file you want to retrieve from the phone).

 → page 25

Trace Level

Except for the Error stream, it is possible to set the level of tracing on any specified stream. Six levels of tracing are available:

- None
- High Level
- Black Box External/Internal
- White Box
- All

There is an additional logging level which is the error level. As long as the tracing level is not set to "None", errors on this stream will be logged. There follows a description of the type of information which will be logged at each trace level. When 'All' is selected then the trace will contain messages from all levels.

- **High level**
would include:
 - task creation and deletion,
 - message queue creation and deletion,
 - pipe creation and deletion,
 - semaphore creation and deletion
 - Monitoring of task stack
 - Monitoring of task activity
 - Monitoring of free heap memory
 - Monitoring of spare file descriptors
 - Monitoring of spare space on the file system
- **Black box (external)**
would include:-
 - Indication of incoming network messages from sockets
 - Indication of outgoing network messages to sockets
 - Indication of incoming network messages from 3rd party software
 - Indication of outgoing network messages to 3rd party software

- Indication of input messages from device drivers/device interfaces
- Indication of output messages to device drivers or device interfaces

- **Black box (internal or task)**

would include:


- Indication of incoming message from message queues or pipes
- Indication of outgoing message indication onto message queues or pipes
- Giving and taking of inter-task semaphores
- Changes to data stored in the file system
- Heap memory allocation and de-allocation

- **White box (internal or task)**

would include:

- Function entry (parameter data ?)
- Function exit (return value data ?)
- Logical flow within function
- Changes to internal memory variables (critical logic only)


It should be pointed out that Errors directed at the ERROR stream will still be logged. Only errors directed at the specific stream will not be logged.

 → page 23

Trace Output

The "Trace output" drop down box is used to tell the phone whether to store the information to the File associated with the application stream or log the information to the generic memory buffer.

Both tracing to memory and tracing to file behave as circular buffers. The difference between 'trace output memory' and 'trace output file' is that tracing to memory logs trace records to a circular memory buffer which will be lost on a power on reset, while trace to file saves records to various files on flash. The reason for having both methods is that in the case of general functional faults, tracing to memory is the preferred option as this will have a lower impact on phone performance (this is because writing to flash is relatively slow and flash has a limited number of write cycles) while tracing to flash should only be used when investigating problems that require trace data to be retained over phone resets. All trace data should be accessible via the Web interface and thus should not require an FTP server for access.

 → page 23

Trace Streams

It should be noted again that performance of the phone can be seriously affected, and trace messages lost, if too many components are traced at once. A lost trace message indication is given in the Error log to memory when a write to file was not possible. Messages are lost because of the slow write cycle of the Flash memory.

Enabling tracing in most components will slow down the phone but message handling components, for example SIP Signalling, are more susceptible. User level applications such as ENB and LDAP are less critical components, although the effect is not measurable.

There follows a brief description of each traceable component. High level, Black box (external) and Black box (internal) are general use streams which do not relate to specific software modules so are not described here.

- **Monitor**
 The Monitor provides a resilience service. It allows other components' tasks to register for monitoring. Once registered a component task is obliged to report to the Monitor within a certain time period. If the task does not report in to the Monitor, the Monitor will restart the phone. The Monitor is responsible for periodically kicking the hardware watchdog. If the hardware watchdog is not kicked the phone will restart.
- **Service Agent**
 The IP-Phone device contains various services that are accessible to external clients via TCP/IP. These services are not ordinarily running in the device, so clients that require access to a service within the device must somehow launch the service on the device. This is achieved by having a minimal task that is always running that listens for incoming messages on a UDP socket on a fixed port. This task is called the "IP Service Agent".
 The IP Service Agent also provides a means for the auto-discovery of devices on the network. As the IP Service Agent processes UDP "connectionless" messages it can receive UDP messages that are broadcast over the network. The Service Agent can process the UDP messages and respond to the client, allowing the client to locate a particular device.
- **CTI Server**
 This feature is not supported .
- **Resource Sharing**
 The concept of the Resource Sharing feature is to allow PC and IP Phone users the ability to use the PC keyboard and mouse to enter text and navigate on the IP Phone. There is no feedback on the PC, and consequently it is assumed that the user, PC, and IP Phone will be in close physical proximity.
- **The Resource Sharing facility makes use of the IP LAN to pass (UDP) messages between the PC client, and the Service Agent to initialise the Resource Sharing server task. The configuration of the IP Phone**

details on the PC, and the selected initialisation method for the communications path, may require that both elements are also on the same segment, so that UDP broadcasts are not filtered by a router

- **Home App**

An application called the Home Application is provided as part of the Application Framework component group. The Application Framework is intended to provide an environment for the applications that will run on the optiPoint 410/420 range. The Home Application provides access to all applications that are available on the phone.

- **SIP UI**

The UI provides the driver applications for the two and four line displays of the phone. It also holds state information relating to the current and previous states of the phone in the current processing task. It provides the interface between the user and the call control element of the application.

- **SIP Database**

The SIP database layer handles all interactions between the phone application and the configuration files. It also provides the interface layer to the data registry.

- **SIP Call Control**

The call control application provides the interface between the user (via the UI) and the signalling element. On incoming calls it provides the UI with state information of the progress of the incoming call. It also uses information from the user to cause signalling to initiate an outgoing call.

- **SIP Signalling**

This component provides the interface between the SIP protocol stack and the phone application. For incoming calls it creates the appropriate data structures, manages these data structures and passes messages up to call control to ensure the phone is always in the correct state. This component is also responsible for responding to requests from call control to create outgoing calls.

- **SIP Os Utils**

This component encompasses all calls from the SIP application to the low level operating system.

- **RTP**

The RTP trace option outputs log messages from the RTP session and Jitter buffer components. RTP (Realtime Transport Protocol) is the protocol specified by H.323 to carry the speech packets in a call.

- **System Framework**

The Application Framework is intended to provide an environment for the applications that will run on the optiPoint 410/420 range. The set of available applications is predetermined for a given model at compile-time - it will not be configurable at run-time.

- **WAP**

Standard and Advance 410 and 420 models provide a Wireless Application Protocol (WAP) internet browser for use with a graphical display (display module). Connection to a WAP server may be by HTTP (textu-

al) or WSP (binary). If the connection is by HTTP then the administrator may optionally configure a proxy address. If the connection is by WSP then the administrator must configure a WAP gateway address.

- **LDAP (address book)**

Standard and Advance 410 and 420 models provide the user with access to a corporate directory using LDAP. When the main (character) display is only 2-line, the use of a graphical display (display module) is required. When a 4-line character display is available (advance models) this can be used if no graphical display is available.

In order to be able to query the LDAP server and to be able to understand the results, the LDAP client requires a template describing the database. This template is downloadable by the system administrator using the Administration application, the web server or the configuration service.

- **ENB (Contacts)**

Certain models provide the user with a personal directory known internally as the Electronic NoteBook (ENB). When the main (character) display is only 2-line, the use of a graphical display (display module) is required. When a 4-line character display is available, this can be used if no graphical display is available.

- **Config Service**

The configuration service is not supported.


Web Service

This service allows a browser to connect to the phone and browse web pages stored on the phone. The web pages are used to configure administration data in the phone's registry and to provide functions like download data and restart phone. The browser uses the HTTPS protocol. The phone responds by serving its HTML web pages. Access is subject to administration password control.

- **SIP FTP**


This component is the ftp client resident on the phone. It is used for the transfer of data between a specified FTP server and the phone.

This data may take the form of a new software application, a music on hold file or a configuration file. A facility is also provided to upload configuration files from the phone to a target server.

 → page 23

Trace Timeout

The trace time stamps in the trace messages reflect the time indicated on the phones display. This is the current SIP server time.

 → page 23

Trace View Source

The "Trace Source" drop down box is used to tell the phone whether to retrieve the trace information from the generic memory buffer or from the File associated with the selected application stream.

 → page 24

Trace View File Stream

The "Trace File Stream" drop down box specifies the application stream for which information is desired. This is only applicable if the "Trace Source" is set to file.

Output Structure

All logged messages have the same format header and differ only in the body of the message. The format of a trace message is given below:

Example:


```
0,1790,30-APR-2004,15:03:28,8464664,tTCMain-
Task,0xc0ea0ad0,223,tc_main.c,13,1,0,R:(19)0013 000a
00 0021 00 00 ff : 28 : 0f 00 05 48 61 6c 6c 6f
```

The fields in the above message are listed starting with the left-most field:

Element	Value	Decription
Restart count	0	A count of how many times the phone has been started
Message number	1790	A count of the number of logged messages since the last restart
Date and Time	30-APR-2004,15:03:28	Date and time of when the message was logged
Ticks since power up	8464664	Number of clock ticks from power up to when the message was logged
Task name	tTCMain-Task	Task name
Task Id	0xc0ea0ad0	VxWorks task id value
Line number	223	Line number within code of where the message originates
Filename	tc_main.c	Filename of code where message originates
Stream Id	13	Id of the stream for this message
Stream Level	1	Trace level within the stream for this message
Message Id	0	Unique id for this message across all messages

Message	R : (19) 001 3 000a 00 0021 00 00 ff : 28 : 0f 00 05 48 61 6c 6c 6f	Text of the message (may contain embedded data)
---------	---------------------------------------------------------------------------------------	-------------------------------------------------

All files are stored in the directory "/tffs0/tracing". The file names are based on the name of the log being created for example Home application logging creates the following log file "/tffs0/tracing/HomeApp.log".


 → page 24

Trace Windview Configuration Logging Level

If Windview is to be enabled then the logging level should be set to: "Windview CLASS 3(Additional Instrumentation)".


Other options are:

- CLASS 1(Context Switch)
- CLASS 2(Tast state Transition)

 → page 26

Trace Windview Configuration Reset

Following a reset the FTP Client page can used to retrieve the log file. This file can be found in "/tffs0/exceptions/" and is called "wdvlog.wvr".

 → page 26

Abbreviations and Specialized Terms

You will find more information in the relevant literature on the Network Technology and → VoIP.

DHCP

Abbreviation for "**D**ynamic **H**ost **C**onfiguration **P**rotocol".
The DHCP is an Ethernet protocol that allows for the automatic configuration of IP based endpoints.

DNS

Abbreviation for "**D**omain **N**ame **S**ystem".

DTMF

Abbreviation for "**D**ual **T**one **M**ulti **F**requency".

DLS

The Deployment and Licensing Server (DLS) is a HiPath Management application that provides an integrated solution for the customers and the service personal to administer workpoints (that are optiClients and opti-Point devices) in HiPath- and non-HiPath networks

EAP

Extensible Authentication Protocol

FTP

Abbreviation for "**F**ile **T**ransfer **P**rotocol".
Is used for transferring files in networks, e.g., to update telephone software.

G.711

Audio protocol for uncompressed voice transmission. Requires a bandwidth of 64 kbit/s.

G.722

The G.722 recommendation describes ADPCM coding with a sub-band. The bandwidth for the sub-band is 7 kHz at a sampling rate of 16 kHz. The transfer rate is 64 kbps, voice quality has a MOS rating of 4.5 which is quite high.

G.723

Audio protocol for compressed voice transmission. The quality is worse than in → G.711 and → G.729. Requires a bandwidth of about 6 kbit/s.

G.729

Audio protocol for compressed voice transmission. The quality is worse than in → G.711 and better than in → G.723. Uses a bandwidth of about 8 kbit/s.

Gateway

Mediation components between two different network types, e.g., → IP network and ISDN network.

HTTP

Abbreviation for "**H**ypertext **T**ransfer **P**rotocol".
Protocol for the transfer of data in → IP networks.

IP

Abbreviation for "**I**nternet **P**rotokoll".

IP address

Also called "→ IP" in short. The unique address of a terminal device in the network. It consists of four number blocks of 0 to 255 each, separated by a point. To simplify the notation, voice names can be released from a → DNS into the IP addresses.

Jitter

Runtime fluctuations in data transmission in → IP networks.

LAN

Abbreviation for "**L**ocal **A**rea **N**etwork".

Layer 2

2nd layer (Data Link Layer) of the 7-layer OSI model for describing data transmission interfaces.

Layer 3

3rd layer (Network Layer) of the 7-layer OSI model for describing the data transmission interfaces.

LCD

Abbreviation for "**L**iquid **C**rystal **D**isplay".
Display of numbers, text or graphics with the help of liquid crystal technology.

LDAP

Abbreviation for "**L**ightweight **D**irectory **A**ccess **P**rotocol".
Simplified protocol for accessing standardized directory systems, e.g., a company telephone directory.

LED

Abbreviation for "**L**ight **E**mitting **D**iode".
Cold light illumination in different colours at low power consumption.

MAC

Abbreviation for "**M**edium **A**ccess **C**ontrol **A**ddress".
A 48-bit address with the help of which a terminal device (e.g., → IP telephone or Network card) identifies itself uniquely in a network all over the world.

MIB

Abbreviation for "**M**anagement **I**nformation **B**ase".
Database containing descriptions of error messages of the devices and functions in a network.

PBX

Abbreviation for "**P**rivate **B**ranch **eX**change".
Private telephone system that connects the different internal devices to the ISDN network

PING

Abbreviation for "**P**acket **I**nternet **G**roper".
A program to test whether a connection can be made to a defined → IP target. Data is sent to the target and returned from there during the test. The result of the test displays the success / failure of the transmission and possible additional information such as the transmission time.

PoL

Abbreviation for "**P**ower **o**ver **L**AN".

Port

Ports are used in → IP networks to permit several communication connections simultaneously. Different services often have different port numbers.

QoS

Abbreviation für „**Q**uality **o**f **S**ervice".

RTCP

Abbreviation for "**R**ealtime **T**ransport **C**ontrol **P**rotocol".

RTP

Abbreviation for "**R**ealtime **T**ransport **P**rotocol".

RAM

Abbreviation for "**R**andom **A**ccess **M**emory".
Memory with read / write access.

ROM

Abbreviation for "**R**ead **O**nly **M**emory".
Memory with read only access.

SDP

Abbreviation for "**S**ession **D**escription **P**rotocol".

SIP

Abbreviation for "**S**ession **I**nitiation **P**rotocol".
Protocol standard for initialising calls in → IP networks. Additional informa

SNMP

Abbreviation for "**S**imple **N**etwork **M**anagement **P**rotocol".
The protocol is used for communication with servers that takeover network management functions. This includes for example, protocolling errors that occur in network components (SNMPTrap). Additional information

SNTP

Abbreviation for "**S**imple **N**etwork **T**ime **P**rotocol".
The protocol is used between timeservers and terminal devices of a network to synchronize the time of the terminal device. Additional information

Subnet Mask

Classifies networks in A-, B- and C networks. Each class has a subnet mask that demasks the relevant bits. 255.0.0.0 for Class A, 255.255.0.0 for Class B and 255.255.255.0 for Class C. In a Class C network, for instance, there are 254 → IP addresses.

Switch

Network device that selects a path or circuit for sending data to its next destination. A switch may also include a router function.

TCP

Abbreviation for "**T**ransmission **C**ontrol **P**rotocol".

TLS

Abbreviation for "**T**ransport **L**ayer **S**ecurity".
This protocol ensures privacy between communicating applications.

UDP

Abbreviation for "**U**ser **D**atagram **P**rotocol".

VLAN

Abbreviation for "**V**irtual **L**ocal **A**rea **N**etwork".

VoIP

Abbreviation for "**V**oice **o**ver **I**P".
E.g., voice transmission through → IP technology.

WAP

Abbreviation for "**W**ireless **A**pplication **P**rotocol".
Synonym for graphical applications on mobile telephones, organizers and other suitable terminal devices, transferred in accordance with the protocol by the same name.

WSP

Abbreviation for "**W**ireless **S**ession **P**rotocol".
Protocol for transferring data to → WAP-enabled terminal devices.

Index

A

Abbreviations	40
Audio loop test	27

C

Conformity	4
------------------	---

D

Display test	27
--------------------	----

E

Explanations to specialized terms	40
-----------------------------------------	----

K

Key test	28
----------------	----

L

LED test	28
Line monitor	28
Location of the Telephone	3

M

Maintenance of the phone	3
--------------------------------	---

P

Ping	29
Ping test	29
Precautions	2

R

RAM test	30
ROM test	30

S

Specialized terms	40
-------------------------	----

T

Telephone	
Location	3
Maintenance	3
Testing	
Connections per line monitor	28
Keys	28
LEDs	28
Ping	29
RAM	30
ROM	30

W

Web pages	
Access to	15
Connection establishing	14

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