ECSTA - snom SIP phones

Version: 1.8.75.626

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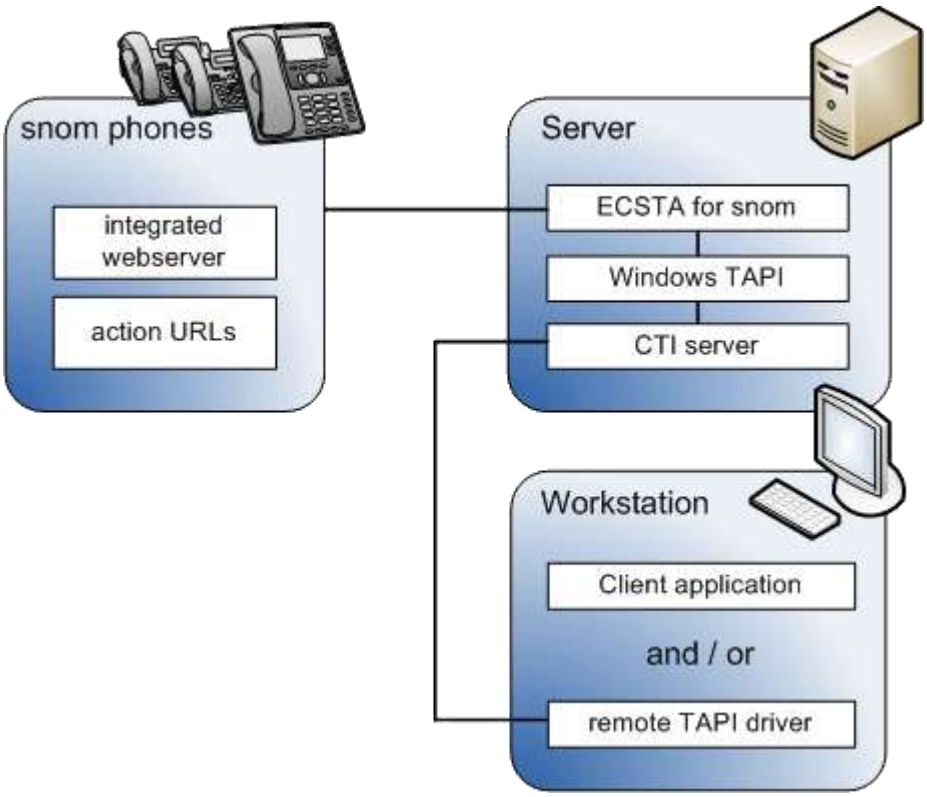
1 Welcome to ESTOS ECSTA for snom

ESTOS ECSTA for snom is a TAPI-Driver for snom VOIP telephones.

The driver allows the control and call signalling of snom telephones. The single-user version limits the functions to one telephone, the multi-user version can be used with as many telephones as required and the information is available at one centralized point.
This TAPI-Driver creates central communication between a PC (CTI Server) and the linked telephones. In this CTI Server all telephones are available as TAPI lines.

The ESTOS ECSTA for snom driver uses, for different telephone firmeware version, a proprietary or integrated CSTA port. (CSTA is supported from firmware version 7.3.4. or upwards.)



Support snom telephones

Telephone	from firmware version
snom 300, 320, 360, 370	7.3.4 to 8.4.x.x 8.7.2.1.a and newer (not 8.7.2.1) 8.7.2.2.a and newer (not 8.7.2.2) from 8.7.2.3 (Firmware images from 8.5.x.x up to and including 8.7.2.2 are not supported due to a bug in the snom firmware)
snom 720, 760	8.7.2.2.a and newer (not 8.7.2.2) from 8.7.2.3 (Firmware images from 8.5.x.x up to and including 8.7.2.2 are not supported due to a bug in the snom firmware)
snom 820, 821, MeetingPoint	8.0.12 to 8.4.x.x 8.7.2.1.a and newer (not 8.7.2.1) 8.7.2.2.a and newer (not 8.7.2.2) from 8.7.2.3 (Firmware images from 8.5.x.x up to and including 8.7.2.2 are not supported due to a bug in the snom firmware)
snom 870	8.3.2 to 8.4.x.x 8.7.2.1.a and newer (not 8.7.2.1) 8.7.2.2.a and newer (not

	8.7.2.2) from 8.7.2.3 (Firmware images from 8.5.x.x up to and including 8.7.2.2 are not supported due to a bug in the snom firmware)
snom m3, m9	not supported, does not support actionURLs, does not support machine authentication on the phone.

Restrictions

Wireless Dongle	The use of wireless dongles is currently unsupported. The phone presents it´s own MAC address within the configuration and the action urls but communicates using the wireless adapters MAC address. This makes an unambiguous assignment of the phone no longer possible.
Security Use hidden tags:	With enabled option "Use hidden tags" within "Advanced" "QoS/Security" the driver won´t be able to configure the phone. You need to disable this option.
Maximum of 50 phones	The ECSTA for snom can be used for environments with up to 50 phones. For larger installations, we recommend the ECSTA for SIP Phones. For operation of the ECSTA for snom SIP phones you need a firmware version 8.7.4.8. For more information, see www.estos.de.

Supported Operating systems

Usage in the network
After the driver is installed, you can use all linked telephones to the server as TAPI lines. If you use a server-supported CTI software then you can now install CTI Server software. To use the telephones from all work places the TAPI-Driver must be split in the network. The following is possible:

1. **In combination with ESTOS Tapiserver or ESTOS ProCall Enterprise**
   The ESTOS Tapiserver is a cti server software that allows you to distribut the tapi driver within your network to all windows workstations. It supports workgroups, domains and Active Directory as well as Windows Terminal Services and Citrix scenarios. ESTOS ProCall Enterprise is a complete server-client unified communication solution with cti, presence managementa and instant messaggin services. Both products are designed for perfect interaction with the ESTOS ECSTA for snom.
2. **In combination with Microsoft Windows telephony server**
   The Windows Telephony Server is a part of Windows NT Server, Windows 2000 Server and Windows Server 2003. In any case you need a domain. The installation is limited to domain users.

2 Operating mode

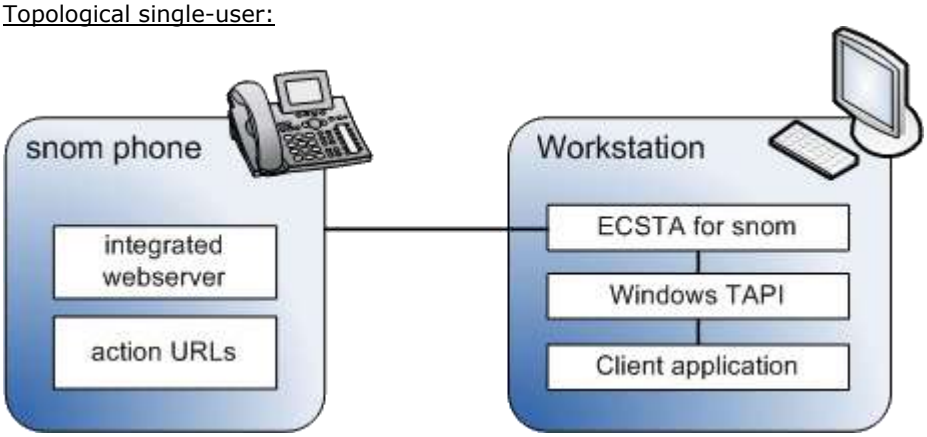
In order for the ESTOS ECSTA for snom to have access to the telephones, and the telephones are able to give the TAPI-Driver information about the current status, two seperate components must be correctly configured.
The control of the telephones out of the TAPI-Driver is implemented via the integrated WebServer. Conversely the telephone status information is notified via the telephone configuration Action URLS to the TAPI-Driver.

- The TAPI-Driver must have access to the telephone WebServer (HTTP or HTTPS).
- The telephone must be able to call the configuration Action URLS in the TAPI-Driver.

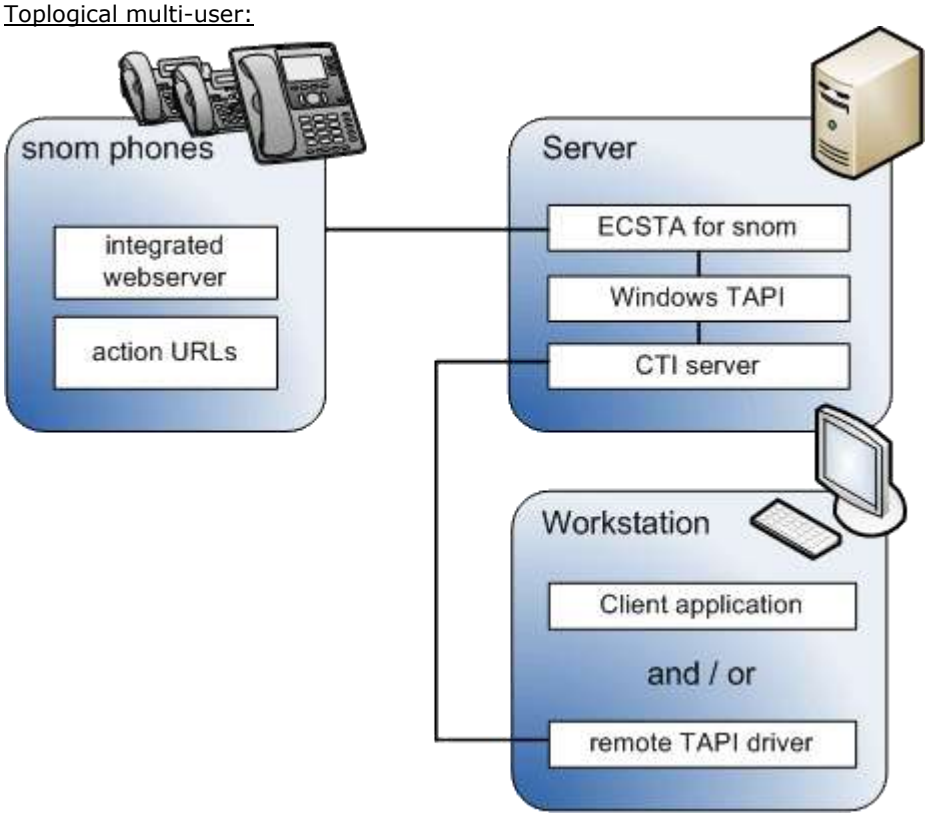
The TAPI-Driver takes over the configuration of the telephones. In the ESTOS ECSTA for snom you just have to name the telephones you want to use, the rest is completed for you by the driver. Further information of the telephone configuration can be found in Small workgroup / single-user.

If you use for the configuration of your already added snom telephones a mass configuration scenario, the driver allows you to create the adequate settings. More detailed information can be found at Mass configuration.

Topological single-user:



Toplogical multi-user:



2.1 Small workgroup / single-user

If you just want to link one or a few snom telephones, it is not suitable to use central configuration.
In this case the TAPI-Driver allows you easy telephone configuration handling so that it works together with the Driver

If you add in ESTOS ECSTA for snom telephones for use with the TAPI-Driver then these are configured automatically. Hereby the Action URLS is placed in the telephone, so that the TAPI-Driver receives the necessary information and displays the status of the telephone in the best way. You must carry out no further telephone settings. You can view the configuration status of connected telephones with the Drivers user-interface under telephones anytime.

2.2 Mass configuration

If you have already used a mass configuration scenario in the configuration of the operating snom telephones, the driver allows the creation of the adequate settings.

Add a telephone to the driver for every telephone type (snom 300, 320 etc) you want to link. (The mass configuration files are created generically from the telephone's existing information.)

In the telephone configuration interface you can now under "Extras" create mass configuration files. Enter here the location of the files and the file names are automatically generated for each telephone type.

The files you can take as the origin for mass configuration or to add the contents of used files.

When you need passwords to access the WebServer for the different telephones, please enter all used passwords in the password list. When the telephones are registered for the first time with the TAPI-Driver then the TAPI-Driver selects the correct password to access the WebServer and saves this in its configuration.

ESTOS ECSTA for snom supports DIGEST and BASIC authentication on the phone. If you use multiple phones with different passwords you should use BASIC authentication (Default setting). Only that way a smooth communication between phones and TAPI driver is possible if a new phone logs on to the driver. (As soon as a new phone connects, the passwords list will be used to access the configuration of the phone. DIGEST authentication allows only 3 different passwords before the phone will refuse access)

When you employ this form of configuration, you have to set at the Advanced settings the option "Put unknown telephones automatically into operation".

3 Telephone settings

Here you can see all telephones that the driver gives as TAPI lines. The list shows in single columns from left to right the following information:

- Status of telephone connection
  - HTTP/s connection, registration is successful
  - HTTP/s connection, registration is necessary
  - Telephone has been not contacted so far
  - Establishing connection
  - No connection could be established
- Telephone configuration status
  - Telephone is correctly configured
  - Configuration status not determined
  - The action URLs in the phone are not or faulty configured
  - Necessary settings in the phone are configured incorrectly
  - Configuration problem: For details see the tooltip on the icon
- Identified telephone type
- Currently registered identity
- Identity of currently registered telephone number
- IP Telephone address
- MAC Telephone address

A tooltip on the individual elements and the columns makes additional information available.
<u>The following options are available in the context menu on the entries:</u>

- Status updated
  - Checks availability and configuration of the telephone
- Remove telephone
  - Removes the telephone from a list of connected terminals
- Save configuration in the telephone
  - Configures the telephone with all necessary settings and then checks the configuration as saved
- Allocate password
  - Shows the log-in name allocated to the telephone or permits the manual allocation of a certain log-in
- Open web surface
  - Opens the web surface of the telephone
- Save configuration of the telephone locally
  - Saves the configuration of the telephone for support cases

The context menu enables you to install the current settings in a telephone configured incorrectly.

With a multi-user installation you can add more telephones by the button "Add telephones". With a single-user installation, cau can define the telephone you wish to connect via the driver by "Select telephone" or "Select a different telephone".

With the button "Extras" you can open the Password list, export current telephones or start an import and files for the Mass configuration.

3.1 Add telephones

The dialog allows you to add telephones to the TAPI-Driver. The list always indicates computer found telephones. In this connection all network segments, that the computer can access, are browsed. You can also manaully add telephones when they are not automatically found.

3.2 Password

The password list saves the Logins for all telephones. As soon as a new telephone is added that requires authorisation, the driver deposits all utilised Logins to the telephone to register. So it manages to register with a Login from the list, and will save the telephone configuration.
This list is specially made for Mass configuration scenarios , telephones that register themselves with the driver and the driver then has access to the telephone WebServer.
If the settings on the phone are protected using a admin password you can define this password within the extended Settings.

4 IP Settings

Here you can configure via which IP-Interface and which Port the driver should be available. These settings should not be changed.

Allow access from external telephones
The driver tries to validate the phones MAC-address. This validation will fail if the driver can not connect the phone directly. If this option is enabled the driver will allow access from phones whose MAC address could not be determined. This option needs to be selected for routed networks (e.g. VPN dialin, phones which are located behind a NAT router).
Public IP (dyndns name)
For telephones that cannot be reached through one of the local interfaces, a gateway can be entered by which the telephones can transmit their status to the driver. This option is specifically intended for telephones reached via the Internet. The gateway will then be your public IP address under which you can be reached in the internet. Please keep in mind that pertinent port releases must be installed if you use a NAT firewall.

With the snom WebServer setting, you can configure the HTTP and HTTPs Port WebServer in the snom telephones, as well as predefining the preferred connection type.
When all telephones are identically configured and therefore supporting HTTP or HTTPS you should set the settings to "only HTTP" or "HTTPS". This improves the driver's performance.

5 License settings

Multi-user installation can be tested without license for 45 days without restrictions.
After expiry of the test period you cannot access the TAPI lines. You can acquire the license codes when the driver is permanently activated.

The licensing can be carried out per connected telephone.
In the Driver you can choose whether to license the number of linked telephones or to license the number of used telephones at the same time. When the number of licenses is reached, you cannot add further telephones and the use of further telephones will be aborted.

6 Advanced settings

- Special settings
  - Falsely configured telephones are automatically reconfigured correctly
    The driver checks the telephone configuration if it is registered and when a TAPI line is opened. If the driver detects that the telephone is incorrectly configured then the driver will automatically correct this, so long as this option is activated.
  - Unknown telephones are automatically put into operation
    This option must be activated if you are using a Mass configuration scenario.
  - Snapshot for active calls (seconds)
    This driver is capable of checking all active calls for validity. This ensures that the PC does not show calls that are no longer active on the telephone. A time interval in seconds is indicated. The higher this value, the longer it may take until a driver recognises a call no longer existent. The lower this value, the higher the load on the telephone.
  - Password for admin mode
    If settings on the phone are locked via admin mode you can define the admin mode password here. When configured dedicated phone credentials are not used anymore. Accessing the phone using admin mode only works with snom firmware images newer than 8.4.35 or 8.7.3.15.
  - Extract phone number from this identity field
    Depending on the SIP provider the line phone number is located in a different configuration field. You can define from which configuration field the driver will extract this number.
- Diagnosis
  Log information is created by the driver to analyse problems. Here you can set the Log level and the location where the Log information should be saved.

7 Location settings

- Location information
  Line numbers should be available in full canonical notation (+49891234567). Enter the appropriate information that the driver can format the numbers to full canonical notation.
- Telephone number formatting
  The driver supports Telephone formatting for incoming, outgoing and dialed telephone numbers.

7.1 Telephone number formatting

You may enter rules for formatting the phone numbers.

Phone numbers that are notified by the telephone to the PC, can be changed with rules to customize them to the deployed TAPI application.

Telephone numbers that have been sent from the TAPI application to the telephone (e.g. establishing call) can be changed with rules.

The modification takes place through "Search /Replace", that works with regular expressions. Is the "Search for" expression found, the result "Replace with" is released, otherwise the telephone number is transmitted unchanged. The entries are processed in order. When a hit is found, all further lines are not processed.

There are different categories:

- **Rules for dialing numbers**
  With these rules the telephone numbers dialed with the PC can be formatted. These telephones numbers will be sent after modification of the telephone.
- **Rules for registered incoming telephone calls**
  With these rules the telephone numbers for incoming calls can be formatted, which the telephone signals to the PC.
- **Rules for registered outgoing telephone numbers**
  With these rules the telephone numbers for outgoing calls can be formatted, which the telephone signals to the PC.

Search for:
Enter here a regular expression that will be used to match the phone number.
Tip: The carat sign (^) can be found in the far upper left of the German keyboard.
Here is a short description of the allowed expressions:

Character	Description
^	The beginning of telephone numbers. The expression " ^0" finds the ´0´only at the beginning of the telephone number.
^	The Caret (^) directly after the left bracket ([) has another meaning. It is utilized to exclude further characters within the bracket. The expression "[^0-8]" allows only figures from 0 to 8.
$	The dollar sign ($) indicates the end of the telephone number. The expression "152$" is only for valid phone numbers that end with "152".
|	The character (|) allows both expressions on each side. The expression "8|9" allows either '8' or '9'.
.	The dot (.) allows any character (or number).
*	The star (*) indicates that the symbol to the left must be present 0 times or more often.
+	The plus (+) is similar to the star, only that the symbol to the left must be present at least once.
?	The question mark (?) indicates that the symbol to the left must be present 0 or 1 time.

()	The round brackets (and) mark the expressions which are available in the field "Replace with" .
[]	Brackets ([and]) marks the amount of characters which are allowed in this position.

Replace with:
Enter the expression to indicate how the telpehone number should be displayed.
\1 gives the first expression marked by "( )" for the field "Search for".
\2 the second etc.

Check:
Here you can directly check your input. Enter a telephone number in the field "telephone number", that you want to test with the expression "Search/Replace". The output field shows the modified telephone number. Should there be a mistake with the regular expression then this will be indicated here. If the expression cannot be found in "Search for", then the telephone number remains unchanged.

Examples:

Effect	**Search for**	**Replace with**
Remove the initial 0	^0(.*)	\1
Replace the initial 80 at the beginning of the phone number (e.g. to get an outside line) with a 0	^80(.*)	0\1
Remove a private Pin-number when the beginning of the telephone number starts with 50xxx	^50[0-9][0-9][0-9](.*)	\1
Withold all internal phone numbers (3 digits).	^[0-9][0-9][0-9]$	
Add an initial 0 for outgoing lines for all telephone numbers with more than 3 digits	^([0-9][0-9][0-9].+)	0\1
Add the root base number (03012345) to all internal phone numbers (1 to 3 digits)	^([0-9][0-9]?[0-9]?)$	03012345\1
Add the local area code to all numbers not beginning with 0 that has at least 4 digits (therefore not internal)	^([^0][0-9][0-9][0-9].*)	08151\1

8 Software requirements

The ESTOS ECSTA for snom may be installed on all Windows platforms that support Microsoft TAPI2.0 or higher. The driver was tested sucessfully on

- Windows XP (x64 Edition)
- Windows Vista (x64 Edition)
- Windows 7 (x64 Edition)
- Windows 2000
- Windows 2003 (x64 Edition)
- Windows 2008 (x64 Edition)
- Windows 2008 R2 (x64 Edition)

Microsoft Installer Version 2.0 is required to run the setup.

9 Supported TAPI operations

The driver overs the followin TAPI call control operations.

Action:	Corresponding TAPI function:
Dial	TSPI_lineMakecall
Hang up	TSPI_lineDrop
Answer call	TSPI_lineAnswer
Hold call	TSPI_lineHold
Retrieve call	TSPI_lineUnhold
Redirect call	TSPI_lineRedirect
Blind transfer	TSPI_lineBlindTransfer
Setup transfer	TSPI_lineSetupTransfer
Swap hold	TSPI_lineSwapHold
Complete transfer	TSPI_lineCompleteTransfer (LINETRANSFERMODE_TRANSFER)
Dial in dial tone mode	TSPI_lineDial
Forwarding	TSPI_lineForward TSPI_lineGetAddressStatus • LINEFORWARDMODE_UNCOND • LINEFORWARDMODE_UNCONDEXTERNAL • LINEFORWARDMODE_UNCONDINTERNAL
Do not disturb	TSPI_lineForward TSPI_lineGetAddressStatus

The following TAPI functions are implemented due to requirements of the TAPI subsystem.

Other exported functions:
TSPI_lineSendUserUserInfo
TSPI_lineClose
TSPI_lineCloseCall
TSPI_lineConditionalMediaDetection

TSPI_lineDevSpecific
TSPI_lineDevSpecificFeature
TSPI_lineGetDevConfig
TSPI_lineSetDevConfig
TSPI_lineGetAddressCaps
TSPI_lineGetAddressStatus
TSPI_lineGetAddressID
TSPI_lineGetCallAddressID
TSPI_lineGetCallInfo
TSPI_lineGetCallStatus
TSPI_lineGetDevCaps
TSPI_lineGetExtensionID
TSPI_lineGetIcon
TSPI_lineGetID
TSPI_lineGetNumAddressIDs
TSPI_lineNegotiateExtVersion
TSPI_lineNegotiateTSPIVersion
TSPI_lineOpen
TSPI_lineSelectExtVersion
TSPI_lineSetDefaultMediaDetection
TSPI_lineSetStatusMessages
TSPI_lineSetAppSpecific
TSPI_lineSetCallData
TSPI_providerCreateLineDevice
TSPI_providerEnumDevices

TSPI_providerFreeDialogInstance
TSPI_providerGenericDialogData
TSPI_providerInit
TSPI_providerShutdown
TSPI_providerUIIdentify
TSPI_lineGetCallIDs
TUISPI_lineConfigDialog
TUISPI_lineConfigDialogEdit
TUISPI_providerConfig
TUISPI_providerInstall
TUISPI_providerRemove
TUISPI_providerGenericDialog
TUISPI_providerGenericDialogData

10 Info about ESTOS ECSTA for snom

ESTOS ECSTA for snom is a product of ESTOS GmbH.

Product updates can be found under http://www.estos.de

For frequently asked questions and support please go to http://www.estos.de

You will get e-mail support using support@estos.de

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