

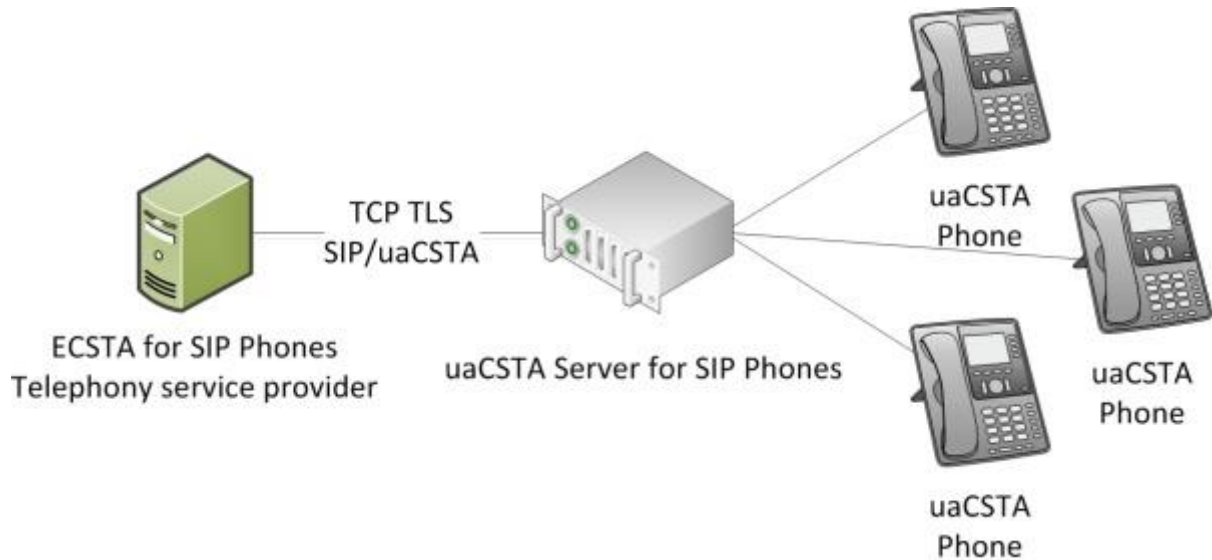
estos ECSTA for SIP Phones

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1 Einleitung

estos ECSTA for SIP Phones ist eine TAPI Treiber für uaCSTA fähige Telefone. Der Treiber kontaktiert den uaCSTA Server for SIP Phones über die Steuerung und Überwachung der dort angemeldeten Telefone ermöglicht wird. Der ECSTA for SIP Phones ist ein Telephony Service Provider für TAPI 2.1 (2.2 / 3.0).



Der ECSTA for SIP Phones stellt als Telephony Service Provider (TSP) eine standardkonforme TAPI Schnittstelle zur Steuerung der Endgeräte bereit. Der Treiber wird in Verbindung mit TAPI nutzenden Applikationen eingesetzt (UCServer, ProCall, andere TAPI Applikationen)

1.1 Installation

uaCSTA Server for SIP Phones und ECSTA for SIP Phones werden als MSI Installer bereitgestellt und können auf aktuellen 64bit Windows® Betriebssystemen eingesetzt werden. Beide Komponenten können auf ein und der selben Maschine installiert werden.

2 Requirements

2.1 Installation and Operation

The ECSTA for SIP Phones can be installed on all current 64bit Windows® systems. Use on terminal servers is support. The required uaCSTA Server for SIP Phones may be installed on the same machine.

Supported operating systems:

- Windows® 10 64bit
- Windows® 11 64bit
- Windows Server® 2016
- Windows Server® 2019
- Windows Server® 2022

3 Installation and Configuration of ECSTA for SIP Phones

3.1 Installation

Install ECSTA for SIP Phones by running the `ecstaSIPPhones_en-US_x64.msi` for 64-bit systems. Follow the instructions that will guide you through the installation process. Once the installation process has been completed, the wizard for the initial configuration of the driver will appear automatically. The individual wizard pages will be described by the following information. You can execute the administrator user interface from the *Advanced Telephone and Modem Options* entry in the Control Panel at any time.

Use in the Network

Once the driver has been installed, you can use all extensions set up on the server as TAPI lines. If you are using server-supported CTI software, you can now install this to be able to control the telephones from all workstations. For example the `estos UCServer`.

- **estos UCServer**

The `estos UCServer` is a CTI/UCC server software which distributes the telephony informations across the network using a graphical client or a multiline TAPI driver. Workgroups, domains, Active Directory® and Terminal Server are supported.

The driver interface has been divided into the following sections:

- Connection
- Lines
- Location
- Advanced
- Licence
- Information

3.2 Connection

Connection with `estos uaCSTA Server for SIP Phones`

Specify the DNS name of the IP address for `uaCSTA Server for SIP Phones` from here. The default port is 5080 for TCP, 5081 for TLS.

Create TLS Connection

Creates an encrypted connection with `uaCSTA Server for SIP Phones`.

Force a secure TLS connection

Checks if the certificate presented by the server is valid for the TLS connection. You must resolve the connection with `uaCSTA Server for SIP Phones` through a DNS name for this option, because it will be checked against the name in the certificate.

Credentials for the `uaCSTA Server for SIP Phones`

Enter the user information for the server.

Notes of this connection

From here, you can store the comments about the connection that will be displayed on the "Advanced Telephone and Modem Options" on the table.

3.3 Lines

The list will display the lines currently offered by the TAPI driver. You can comfortably accept the lines offered by `uaCSTA Server for SIP Phones` from Scan Lines. If you know the MAC address for the telephone and the settings for the identity to be monitored (user name and registrar) then the lines could be added manually. One TAPI line will be offered per telephone or per identity depending on the settings in the Advanced Options

dialog. This setting is predominantly relevant when you have configured more than one identity for the telephones. The identities will be shown as addresses when one line should be offered for each telephone. Otherwise, a different line will be provided for each identity.

Phone Number

If the numbers of identities are not in international (E.164) format available (eg +493012345123) they can be completed over the site configuration.

Extras...

- **Scan available lines...**
You can scan the lines provided from uaCSTA Server for SIP Phones. A one-to-one depiction of the server lines will be downloaded to the client for this. Lines that have been deleted from the server will be deleted by performing the scan.
- **Export Text...**
Export the current line configuration for the driver as a text file.
- **Import text...**
You can import a line list that was created previously.

Attention

After the installation of the driver it may be necessary to restart the computer.

3.4 Location

Phonenumbers will be completed by the location settings, if they are not in E.164 format (e.g. +493012345123). To do this, you have to setup your location and enable the option "use location".

3.4.1 Phone Number Format

You may enter rules for formatting the phone numbers.

The phone numbers that have been reported to ECSTA by the telephone can be modified using rules, in order to adjust them to the TAPI application in use.

The phone numbers that have been sent to ECSTA by the TAPI application (such as when making a call) can be modified using rules.

Each line in the list contains an option if direct text compare or a regular expression is used.

This modification will result through a search-and-replace process processed using regular expressions. If a search pattern is found, the result will be displayed in the Replace list. Otherwise, the unmodified phone number will be displayed. The entries will be processed sequentially. Additional lines will not be processed once a match has been found.

A differentiation is made between categories:

- **Incoming**
Phone numbers for incoming calls which are reported to the PC by the phone system are formatted with these rules.
- **Outgoing**
Numbers for outgoing calls which are reported to the PC by the phone system are formatted with these rules.
- **PC Dialling**
This section is for phone numbers that are dialed on the PC and send to the PBX system

Search for:

Enter the regular expression that will be used to match the phone number.

Hint: The caret (^) can be found on the upper left key of a keyboard with German layout.

A brief overview of the permitted expressions:

Character	Description
^	The beginning of the search string (phone number). The expression "^o" matches "o" only at the beginning of the search string.
^	Placing the caret (^) symbol immediately after an opening bracket changes the meaning of the regular expression. It means that the characters between the brackets should not be matched. The expression "[^o-8]" means that the numbers 0 through 8 will not be considered part of the match.
\$	The dollar sign (\$) designates the end of the phone number. The expression, "152\$", is only valid for phone numbers that end with "152".
	The () sign allows for both characters it stands between. The expression "8 9" allows both "8" and "9".
.	The dot (.) allows any character (or any number).
*	The asterisk (*) indicates that the character to the left of the asterisk in the expression should match 0 or more times.
+	The plus (+) is similar to asterisk but there should be at least one match of the character to the left of the + sign in the expression.
?	The question mark (?) matches the character to its left 0 or 1 times.
()	The parenthesis affects the order of pattern evaluation and also serves as a tagged expression that can be used when replacing the matched sub-string with another expression.
[]	The corner brackets ([]) indicate the amount of signs that are permitted at this point.

Replace with:

Enter the expression how the output of the phone number should look like.

\1 shows the first expression standing between regular brackets () of the *Search for* field.

\2 reads out the second, etc..

Check:

You may check your expressions right here by entering a phone number in the "phone number" field. The resulting output will be displayed. If the expression from the search pattern is not found, the phone number will be sent to the output without modification.

Examples:

Effect	Search for	Replace with
Removal of a leading 0	<code>^0(.*)</code>	<code>\1</code>
Replacing a 80 at the beginning of a number (e.g. targeted external dialing code) with 0	<code>^80(.*)</code>	<code>0\1</code>
Removal of a private PIN which is added to the beginning of a phone number as 50xxx	<code>^50[0-9][0-9][0-9](.*)</code>	<code>\1</code>
Suppress all phone numbers that are internal (not more than 3 digits).	<code>^[0-9][0-9][0-9]\$</code>	
Add an external dialing code code (leading 0) for all numbers with more then 3 digits	<code>^([0-9][0-9][0-9].+)</code>	<code>0\1</code>
Add the phone system base number (03012345) to all internal numbers (1 to 3 digits in length)	<code>^([0-9][0-9]?[0-9]?)\$</code>	<code>03012345\1</code>
Adding an area code to all numbers not beginning with 0 and containing at least 4 digits (thus not internal).	<code>^[^0][0-9][0-9][0-9].*</code>	<code>08151\1</code>

3.5 Advanced

Performance Parameter:

Snapshot for active calls

The driver can check the validity of all active calls. This prevents displaying calls on the PC, which no longer exist in the telephone.

Retry MonitorStart

If the driver cannot start monitoring a phone number in uaCSTA Server for SIP Phones, the attempt will be retried at periodic intervals.

Advanced Features:

Show identities as addresses

If you have configured on the connected phone multiple identities hereby whether these identities are to be offered as separate lines or TAPI represented as a line which addresses the phone.

Automatically update Lines

The driver can independently update the lines offered by uaCSTA Server for SIP Phones. To do so, at least on line must be opened so that the TAPI sub-system will be initialized and the driver has a connection with uaCSTA Server for SIP Phones. If you use the driver in connection with UCServer, it will automatically hold a line open.

Determine phone numbers automatically

The driver can automatically determine the phone numbers for the lines. If you would like to assign the phone numbers manually, deactivate this option. The phone numbers can then be configured from the properties for the lines.

3.6 Licences

The driver can be licensed in 2 different ways:

About the estos UCServer:

The estos UCServer assigns a licence for each line activated in the UCServer. The number of lines licensed in estos UCServer is divided between the SIP lines and TAPI lines entered in UCServer. If additional line licences are required, the licences in estos UCServer must be increased.

With a registered licence

A licence can be entered in the driver and/or a test licence can be downloaded. With a test licence, 25 lines are available without restriction for 45 days. Several licences can be entered to increase the number of line licences.

The following applies to both types of licences:

If the existing licences are used up, opening additional lines will fail.

If you have added several driver instances, all instances share the licences entered. You can allocate the lines to different instances as required.

3.7 Information

Shows the most important information about this driver instance

Diagnostics

From this dialog, you can configure the log files for the diagnosis of problems.

Log Driver

Starts a general driver log.

SIP&CSTA Log

Activates the logging mechanisms for SIP and CSTA messages about uaCSTA Server for SIP Phones.

Delete log files daily

If this option has been activated, all log files will be deleted daily.

Log File Filter (MAC Addresses)

In order to be able to analyze problems with individual telephone better, logging can be limited to specific telephones. Enter the MAC addresses for the telephones to be logged from here. Use a comma as the separator (AABBCCDDEEFF, 001122334455).

Log File Size (Mb)

Multiple log files will be written. Each log file will be re-created cyclically, when the size in megabytes has been exceeded.

Log File Path

The log files will be stored in this directory. Please note that the service will require the appropriate write privileges for this directory.

Delete Log Files

Deletes the log files.

3.8 Supported TAPI operations

The driver offers the following 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	TSPI_lineRedirect
Blind transfer	TSPI_lineBlindTransfer
Setup transfer	TSPI_lineSetupTransfer
Swap hold	TSPI_lineSwapHold
Complete transfer	TSPI_lineCompleteTransfer (LINETRANSFERMODE_TRANSFER)
Create conference	TSPI_lineCompleteTransfer (LINETRANSFERMODE_CONFERENCE)
Pickup	TSPI_linePickup
Generate digits	TSPI_lineGenerateDigits
Dial in dial tone mode	TSPI_lineDial
Call redirections	TSPI_lineForward TSPI_lineGetAddressStatus
Do Not Disturb	TSPI_lineForward TSPI_lineGetAddressStatus
Message waiting	TSPI_lineSetLineDevStatus TSPI_lineGetLineDevStatus

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

Other exported functions:

TSPI_lineSetupConference

TSPI_lineSendUserUserInfo

TSPI_lineAddToConference

TSPI_lineRemoveFromConference

TSPI_linePrepareAddToConference

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

4 Information about estos uaCSTA Server for SIP Phones

estos uaCSTA Server for SIP Phones is a product of estos GmbH.

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

Frequently asked questions and answers, as well as support, can be found under <https://www.estos.de/service>.

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