

# estos ECSTA for SIP Phones

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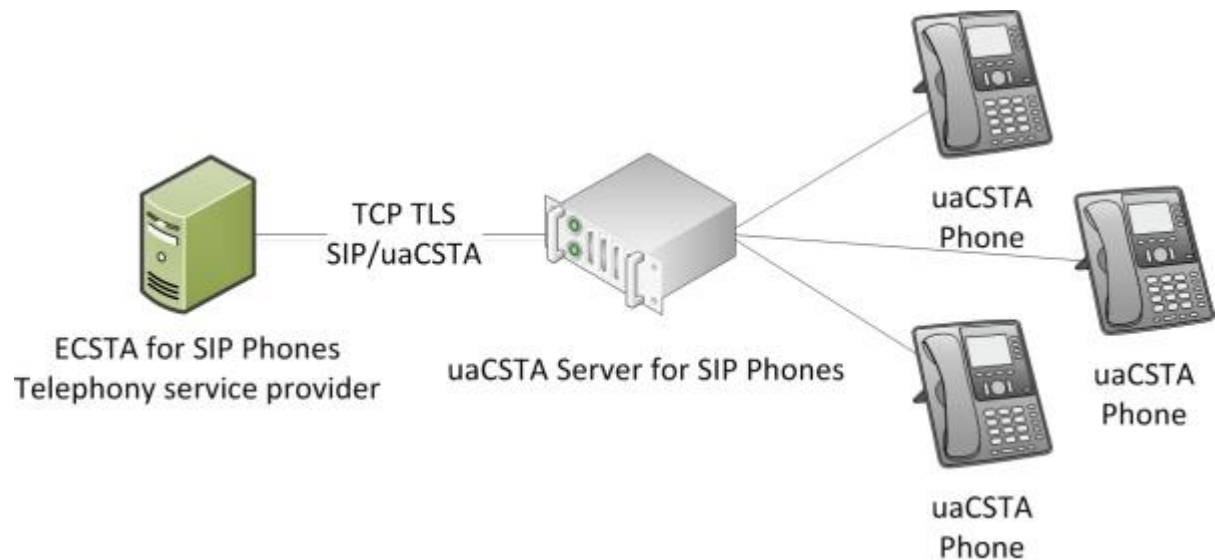
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## 1 Einleitung

estos ECSTA for SIP Phones ist eine TAPI Treiber für uaCSTA fähige Telefone. Der Treiber kontaktiert den uaCSTA Server for SIP Phones über den 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)

uaCSTA Server for SIP Phones und ECSTA for SIP Phones werden als MSI Installer bereitgestellt und können auf aktuellen 32 und 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 32/64bit 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
- Windows® 11
- Windows Server® 2012
- Windows Server® 2012 R2
- 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.msi` setup program for 32-bit Systems or `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

After installing the driver, you may use all configured line devices on the server as TAPI-lines. If you are using a server based CTI Software, you may install it now. To have the TAPI-devices available on all workstations, the TAPI-driver must be distributed in the network. There are the following options:

1. **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.
2. **estos CallControlGateway**  
The estos CallControlGateway for Lync/OCS is a gateway that connects the TAPI-lines with the Lync/OCS server. This enables the Lync/OCS client to use traditional telephone devices via Remote Call Control (RCC).
3. **Windows® Telephony Server**  
The Windows® Telephony Server is a component of Windows® server operating systems since Windows® NT. You will need a domain. The service is limited to domain users.

The driver interface has been divided into the following sections:

Connection

Lines

Location

Advanced

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. "[^" means that the characters between the brackets should not be matched. The expression "[^o-8]" means that the numbers o 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 ([ and ]) 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 (leading 0) for all numbers with more than 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 one 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 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.

## 3.7 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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